2012

STANDARD PRODUCTS

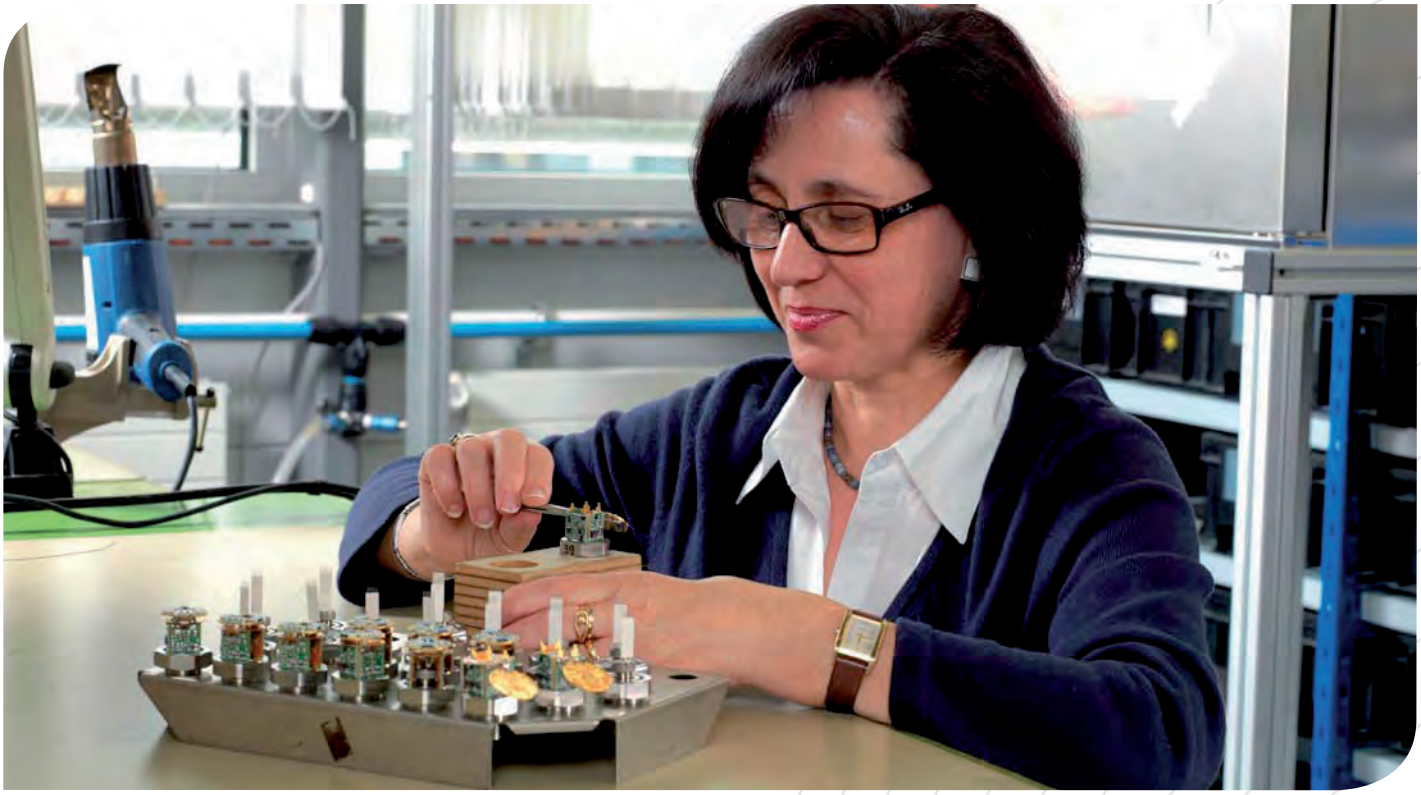
BMR - Tél. 04.42.55.31.67 - info@bmr-france.fr - www.bmr-france.fr

Sensors and controls for the monitoring of pressure and temperature

The measurement devices are employed everywhere where overall requirements are particularly stringent, as for example relative to shock, vibration, EMC, long-term stability, serviceable lifespan (MTBF) and special approvals (shipbuilding, railways, EX, etc.)

Sensoren und Steuergeräte für die Überwachung von Druck und Temperatur

Die Messgeräte finden überall dort ihren Einsatz, wo grosse Anforderungen gestellt werden wie beispielsweise bezüglich: Schock, Vibration, EMV, Langzeitstabilität, Lebensdauer (MTBF) und spezielle Zulassungen (Schiffbau, Eisenbahn, EX usw.)



Standard or customized?

Trafag puts great emphasis on solutions to best meet customer's requirements. Our experience of many years guarantees a successful project realization.

Standard products
Ideally suited for a variety of applications and requirements.

Adapted variants
Standard products for special requirements. Standard products that can easily be adapted to special requirements.

Customized products
Trafag develops and manufactures special customized products according to your specifications to meet your requirements.

Standardisiert oder kundenspezifisch?

Trafag legt grossen Wert auf kundenoptimierte Lösungen. Unsere langjährige Erfahrung gewährleistet Ihnen ideale Voraussetzungen für eine erfolgreiche Projektumsetzung.

Standardisierte Varianten
Ideal und unkompliziert für vielfältige Anwendungen und zahlreiche Anforderungen.

Adaptierte Varianten
Für standardisierte Anwendungen mit Sonderwünschen. Zusatzoptionen können auf einfachste Weise beigefügt werden.

Kundenspezifische Varianten
Wir entwickeln und produzieren auch speziell auf Ihre Bedürfnisse zugeschnittene Lösungen.

News

News

News

PAGE 15

Flush Membrane Transmitter

8235

Thin-film-on-steel transmitter with flush membran for a wide variety of applications.

Dünnfilm-auf-Stahl-Transmitter mit frontbündiger Membrane für eine Fülle möglicher Anwendungen.

Transmetteur de type couche mince sur acier pour membrane affleurante pour une grande quantité d'applications.

PAGE 12

Economic Industrial Pressure Transmitter

8482

Successor of the well-proven general purpose ceramic transmitter now in smaller size.

Nachfolger des Keramik-Transmitters für allgemeine Anwendungen neu mit geringerer Baugrösse.

Successeur du transmetteur céramique pour les applications – à présent avec des dimensions plus faibles.

PAGE 52

EX Pressure Transmitter

8292

Intrinsically safe pressure transmitter for Ex-applications. Excellent long-term stability due to high-quality thin-film-on-steel membrane.

Eigensicherer Drucktransmitter für Ex-Anwendungen. Ausgezeichnete Langzeitstabilität dank hochwertiger Dünnfilm-auf-Stahl-Membrane.

Transmetteur de pression à sécurité intrinsèque pour les applications anti-déflagrantes. Excellente stabilité à long terme grâce à une membrane couche mince sur acier de toute première qualité.

PAGE 25

Picostat PST4B

9B4

Redesign of the economic 9B4 pressure switch with 10% reduced height. Improved adjustment and indicator of switch point.

Überarbeiteter Druckschalter 9B4 mit 10% geringerer Bauhöhe. Einfachere Einstellung und Ablesbarkeit des Schaltpunktes.

Pressostat 9B4 repensé d'une hauteur 10% plus faible. Réglage et lecture plus faciles du point de commutation.

PAGE 32

Differential Pressure Picostat PST4D

9D4

New Differential Picostat with new bellows system and improved adjustment and indication of switch point.

Neuer Differential-Druckschalter mit neuem Fühlersystem und verbesserter Einstellung und Ablesbarkeit des Schaltpunktes.

Nouveau Pressostat différentiel avec un nouveau système de détection, réglage et lecture améliorés du point de commutation.

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For HVAC
For low pressures
For shipbuilding
For differential pressure
Electronic pressure switches
CANopen
Connection of
Flush membrane

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Picostats (block design)
Pressure switches
Differential pressure switches

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Für HLK
Für kleine Druckbereiche
Für Schiffbau
Für Differenzdruck
Elektronische Druckschalter
CANopen
Anschluss von
Frontbündig

Druckschalter
Picostate (Blockbauform)
Druckschalter
Differenz-Druckschalter

Thermostate
Raumthermostate
Kanalthermostate
Rohrthermostate
mit direkt montiertem Fühler
mit frei montierbarem Fühler
Einbau-Thermostate
Frostschutz-Thermostate
Industriethermostate
Schiffbau-Thermostate
Schutzrohre

Temperaturtransmitter
Elektronischer Mehrstufenlimistat
Anzeige-Einheit mit Relais
Transmitter
PT100/PT1000 Fühler

Feuchte

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Drucktransmitter
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	Electronic Pressure Transmitters						
STANDARD TYPE	NAT...A NAT...V	NAH...A NAE...A	ECT2...A ECT2...V ECTR2...A ECTRV2...A	FPT	NSL...A	NAP...A EXNA...A Ex	NAL...A
PAGE/SEITE	11	12, 18	12, 13, 14	15	16	16, 52	17
LEGEND/ LEGENDE			NEW	NEW			
SENSOR TECHNOLOGY	Thin film on steel	Thin film on steel	Thick film on ceramic	Thin film on steel	Thin film on steel	Piezoresistive	Piezoresistive
MATERIAL SENSOR	DIN 1.4542 (AISI 630)	DIN 1.4542 (AISI 630)	Ceramic (Al_2O_3) O-Ring: FKM, CR	DIN 1.4548 (AISI630)	DIN 1.4542 (AISI 630)	DIN 1.4435 (AISI 316L)	DIN 1.4435 (AISI 316L)
MEASURING RANGE [bar]	min. 0 ... 2.5 max. 0 ... 600	min. 0 ... 2.5 max. 0 ... 600	min. -1 ... 9 max. 0...400	min. 0 ... 1 max. 0 ... 100	min. 0 ... 0.2 max. 0 ... 2.5	min. 0 ... 0.1 max. 0 ... 1000	min. 0 ... 0.1 max. 0 ... 25
OUTPUT	4...20 mA, 0...10 VDC	4...20 mA	4...20 mA, 0...10 VDC	4...20 mA	4...20 mA	4...20 mA	4...20 mA
SUPPLY VOLTAGE [VDC]	24	24	24	24	24	24	24
ACCURACY typ. (at 25 °C) NLH (BSL) % FS	± 0.2	± 0.1	± 0.2	± 0.2	± 0.1	± 0.5	± 0.5
OPERATING TEMPERATURE [°C]	-25 ... 85	-40 ... 125	-25 ... 85	-40 ... 85	-40 ... 125	0 ... 70	-5 ... 50
MEDIA TEMPERATURE [°C]	-25 ... 125	-40 ... 125	-25 ... 125	-40 ... 125	-40 ... 125	0 ... 80	-5 ... 50
IP PROTECTION	IP65	IP67	IP65	IP65	IP67	IP65	IP68
ELECTRICAL CONNECTION	Industrial Standard DIN 43650-C 9.4 mm	M12x1	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	M12x1	EN175301-803-A (DIN 43650)	Cable
PRESSURE CONNECTION	G1/4" male	G1/4" male	G1/4" male 7/16"-20 UNF m/f	G1/2" male	G1/4" male	G1/4" male	with 4 inlets
MATERIAL PRESSURE CONNECTION	DIN 1.4301 (AISI 304)	DIN 1.4301 (AISI 304)	DIN 1.4301 (AISI 304)	DIN 1.4301 (AISI 304)	DIN 1.4301 (AISI 304)	DIN 1.4435 (AISI 316L)	DIN 1.4435 (AISI 316L)
APPLICATIONS							
Shipbuilding / Schiffbau	○	● NAE	○	○	○	○	●
Engine / Motorenbau	○	● NAE	○	○	●	○	○
Railway / Schienenfahrzeuge	○	○	○	○	○	○	○
Machine tools / Maschinenbau	●	●	● ECT2	○	●	●	○
Hydraulics / Hydraulik	●	●	● ECT2	●	○	○	○
HVAC / HLK	●	○	●	○	○	○	○
Refrigeration / Kältetechnik	●	○	●	○	○	○	○
Process Technology / Prozess-Technologie	●	●	○	●	●	●	●
Test benches / Prüfstände	○	●	○	○	●	○	○
Ex	○	○	○	○	○	●	○

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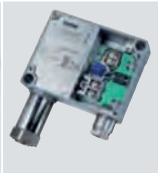
Electronic Pressure Transmitters

	ECL...A	EPN...A	EPI...A	ECON...A	NPN...A4 NPN...AF4	N...	ND...	DCS...AR	CMP...M
	17	18	19	20	20, 21	21	22	22	23
									
	Thick film on ceramic	Thin film on steel	Thin film on steel	Thick film on ceramic	Thin film on steel	Thin film on steel	Thin film on steel	Thin film on steel	Thin film on steel
	Ceramic (Al_2O_3) O-Ring: FKM	DIN 1.4548 (AISI 630)	DIN 1.4548 (AISI 630)	Ceramic (Al_2O_3) O-Ring: FKM	DIN 1.4548 (AISI 630)	DIN 1.4542 (AISI 630)	DIN 1.4542 (AISI 630)	DIN 1.4542/1.4435 (AISI 630/316L)	DIN 1.4542 (AISI 630)
	min. 0 ... 0.1 max. 0 ... 25	min. 0 ... 2.5 max. 0 ... 600 EPNCR max. 0...2500 bar	min. 0 ... 2.5 max. 0 ... 600	min. 0 ... 1 max. 0 ... 250	min. 0 ... 2.5 max. 0 ... 400	min. 0...1.0 max. 0...600	min. -1 ... 1.5 max. 0 ... 16	min. 0 ... 2.5 max. 0 ... 600	min. 0 ... 4 max. 0 ... 600
	4...20 mA	4...20 mA	4...20 mA	4...20 mA	4...20 mA	4...20 mA	4...20 mA	4...20 mA Relays	Bus protocol CANopen
	24	24	24	24	24	24	24	24	12/24
	± 0.3	± 0.2	± 0.2	≤ 160 bar: ± 0.3 ≥ 160 bar: ± 0.5	± 0.2	± 0.2	± 0.5	± 0.2	± 0.2
	-25 ... 80	-40 ... 125	-40 ... 125	-25 ... 85	-40 ... 100	-25 ... 85	-25 ... 85	-25 ... 80	-40 ... 85
	-25 ... 80	-40 ... 125	-40 ... 125	≤60 bar: -25...85 ≥60 bar: -10...85	-40 ... 100	-25 ... 125	-25 ... 125	-25 ... 125	-50 ... 125
	IP68	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP67
	Cable	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	Terminal screw	Terminal screw	M12x1	M12x1
	M10x1	G1/4" male	G1/4" male	G1/4" male	G1/4" female	G1/4" female	2x G1/4" female	G1/4" male	G1/4" male
	DIN 1.4435 (AISI 316L)	DIN 1.4542/1.4301 (AISI 630/304)	DIN 1.4542/1.4301 (AISI 630/304)	DIN 1.4435 (AISI 316L)	DIN 1.4542/1.4301 (AISI 630/304)	DIN 1.4435 (AISI 316L)	DIN 1.4542 (AISI 630)	DIN 1.4301 (AISI 304)	DIN 1.4301 (AISI 304)
	○	●	○	●	●	●	●	●	○
	○	●	○	●	●	●	●	○	●
	○	○	○	○	●	○	○	○	●
	○	●	●	○	●	○	○	●	●
	○	●	●	○	●	○	○	●	●
	○	○	●	○	○	○	○	○	○
	○	○	●	○	○	○	○	○	○
	●	○	●	○	○	○	○	●	●
	○	○	○	○	○	○	○	○	●
	○	○	○	○	○	○	○	○	○

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Mechanical Pressure Switches

STANDARD TYPE	PST4B...4	PST...4	PSTM...4	PSTK...4	PST...S4	P... PS... EXP... Ex	PV... PVF...
PAGE/SEITE	25	26	27	28	29	29, 30, 52 Ex	30, 31
LEGEND/ LEGENDE							
SENSOR TECHNOLOGY	Bellows	Bellows	Membrane	Piston	Bellows	Bellows	Bellows
MATERIAL SENSOR	Bronze $CuSn_6$	Bronze $CuSn_6$	FKM	DIN 1.4404 (AISI 316L) PTFE-Sealing	DIN 1.4404 (AISI 316 L)	Bronze $CuSn_6$	Bronze $CuSn_6$
MEASURING RANGE [bar]	min. -0.6 ... 3.4 max. 4 ... 40	min. -0.6 ... 3.4 max. 4 ... 40	min. 1 ... 16 max. 10 ... 100	min. 1 ... 16 max. 40 ... 400	min. 0 ... 6 max. 1 ... 16	min. -0.9 ... 1.5 max. 4 ... 40	min. -0.9 ... 1.5 max. 4 ... 40
OUTPUT	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)
SWITCHING DIFFERENTIAL [bar]	min. 0.3 max. 1.8	min. 0.3 max. 1.6	min. 0.4 ... 1.7 max. 4 ... 16	min. 0.8 ... 2.4 max. 15 ... 50	min. 0.3 max. 0.7	min. 0.03 max. 1.5	min. 0.1 ...1.3 max. 3 ...18 (adjustable)
OPERATING TEMPERATURE [°C]	-25 ... 85	-25 ... 85	0 ... 80	-25 ... 85	-25 ... 85	-20 ... 70	-20 ... 70
MEDIA TEMPERATURE [°C]	-25 ... 125	-25 ... 120	0 ... 80	-25 ... 120	-25 ... 120	-40 ... 150	-40 ... 150
IP PROTECTION	IP65	IP65	IP65	IP65	IP65	IP65	IP65
ELECTRICAL CONNECTION	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	EN175301-803-A (DIN 43650)	Terminal screw	Terminal screw
PRESSURE CONNECTION	G1/4" female flange connection	G1/4" female flange connection	G1/4" female flange connection	G1/4" female flange connection	G1/4" female flange connection	G1/4" female	G1/4" female
MATERIAL PRESSURE CONNECTION	EN AC-AlSi10Mg (A360) chemically nickel plated	Brass CuZn39Pb3	Brass CuZn39Pb3	DIN 1.4404 (AISI 316L)	DIN 1.4404 (AISI 316L)	Brass CuZn39Pb3	Brass CuZn39Pb3
APPLICATIONS							
Shipbuilding / Schiffbau	●	●	●	●	●	●	●
Engine / Motorenbau	●	●	●	●	●	●	●
Railway / Schienenfahrzeuge	●	●	●	●	●	●	●
Machine tools / Maschinenbau	●	●	●	●	●	●	●
Hydraulics / Hydraulik	○	○	●	●	●	●	●
HVAC / HLK	○	○	○	○	○	○	○
Refrigeration / Kältetechnik	○	○	○	○	○	○	○
Process Technology / Prozess-Technologie	○	○	○	○	○	○	○
Test benches / Prüfstände	○	○	○	○	○	○	○
Ex	○	○	○	○	○	●	○

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Mechanical Pressure Switches				
	PK... EXPK...	PST4D...	PD... EXPD...	987...
	31, 53	32	32, 53	32
	Piston	Bellows (Different. pressure)	Bellows (Different. pressure)	Bellows
	DIN 1.4435 (AISI 316L)	Bronze $CuSn_6$	Bronze $CuSn_6$	Bronze $CuSn_6$ 1.4301 (AISI 304)
	min. 1 ... 10 max. 25 ... 250	min. 0.5 ... 2 max. 1 ... 5	min. -0.6 ... 3.4 max. 1 ... 16	min. -0.3 ... 1.3 max. 1 ... 10
	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)
	min. 0.45 ... 0.9 max. 8 ... 32	min. 0.3...0.5 max. 0.6...1.5	min. 0.16 max. 0.4	min. 0.1 max. 0.6
	-20 ... 70	-25 ... 85	-25 ... 70 -30 ... 65	-25 ... 70
	-30 ... 100	-25 ... 125	-40 ... 150	-25 ... 80
	IP65	IP65	IP65	IP40
	Terminal screw	EN175301-803-A (DIN 43650)	Terminal screw	Terminal tag
	G1/4" female	G1/4" female	2x G1/8"female	G1/4" male
	DIN 1.4435 (AISI 316L)	AlMgSi1 anodized	Brass CuZn39Pb3	Brass CuZn39Pb3 1.4301 (AISI 304)
	●	●	●	○
	●	●	●	○
	●	○	●	○
	●	○	●	●
	●	●	●	○
	○	○	○	○
	○	○	○	○
	○	○	○	○
	○	○	○	○
	●	○	●	○

	Electronic Temperature Transmitter
STANDARD TYPE	T...
PAGE/SEITE	50
LEGEND/ LEGENDE	
SENSOR TECHNOLOGY	PT100 (with/without)
MATERIAL SENSOR	DIN 1.4435 (AISI 316 L)
MEASURING RANGE [°C]	min. -50 ... 250 max. 0 ... 550
OUTPUT	4 ... 20 mA
ACCURACY typ. (at 25 °C) NLH (BSL) % FS	± 0.05
OPERATING TEMPERATURE [°C]	-40 ... 85
MEDIA TEMPERATURE [°C]	-
IP PROTECTION	IP65
ELECTRICAL CONNECTION	Spring terminal
CAPILLARY TUBE LENGTH [m]	-
SUPPLY VOLTAGE [VDC]	24
APPLICATIONS	
Shipbuilding / Schiffbau	●
Engine / Motorenbau	○
Railway / Schienenfahrzeuge	●
Machine tools / Maschinenbau	○
Hydraulics / Hydraulik	○
HVAC / HLK	●
Refrigeration / Kältetechnik	●
Process Technology / Prozess-Technologie	○
Test benches / Prüfstände	○
Ex	○

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Mechanical Thermostats

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Page/Seite	34	35	35, 36	36, 37, 54 Ex	37, 38	38	39, 40	
Legend/Legende								
SENSOR TECHNOLOGY	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube	
MATERIAL SENSOR	Cu	Cu	Cu	Cu	Cu	Cu	Cu 1.4435 / 316L	
MEASURING RANGE [°C]	min. -30 ... 30 max. 0 ... 60	min. -30 ... 30 max. 0 ... 60	min. -30 ... 30 max. 0 ... 60	min. -30 ... 30 max. 0 ... 60	min. -30 ... 40 max. 20 ... 150	min. -10 ... 35 max. 20 ... 110	min. -30 ... 40 max. 70 ... 350	
OUTPUT	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	
SWITCHING DIFFERENTIAL [°C]	0.7 ... 6 (adjustable)	min. 0.3 max. 0.7	min. 0.7 max. 1.8	0.7 ... 6 (adjustable)	min. 0.7 ... 10 max. 2.5 ... 16 (adjustable)	3.7...14 (adjustable)	min. 0.7 ... 10 max. 4 ... 40 (adjustable)	
OPERATING TEMPERATURE [°C]	min. -30 ... 40 max. -30 ... 70	min. -30 ... 40 max. -30 ... 70	min. -30 ... 40 max. -30 ... 70	min. -30 ... 40 max. -30 ... 70	≤45°C: -30 ... 50°C 45...250°C: -30...70°C	-30...70	≤45°C: -30 ... 50°C 45...250°C: -30...70°C >250°C: -10...70°C	
MEDIA TEMPERATURE [°C]	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"	
IP PROTECTION	IP54	IP54	IP54	IP54	IP54, IP65	IP54	IP54	
ELECTRICAL CONNECTION	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw	
CAPILLARY TUBE LENGTH [m]	–	–	–	–	–	–	2	
APPLICATIONS								
Shipbuilding / Schiffbau	○	○	○	○	○	○	○	
Engine / Motorenbau	○	○	○	○	○	○	○	
Railway / Schienenfahrzeuge	○	○	○	○	○	○	●	
Machine tools / Maschinenbau	○	○	○	○	●	○	●	
Hydraulics / Hydraulik	○	○	○	○	○	○	○	
HVAC / HLK	●	●	●	●	●	●	●	
Refrigeration / Kältetechnik	●	●	○	○	●	○	●	
Process Technology / Prozess-Techchnologie	○	○	○	○	●	○	●	
Test benches / Prüfstände	○	○	○	○	○	○	○	
EX	○	○	○	●	○	○	○	

OTHER OPTIONS SEE DATA SHEET | ANDERE OPTIONEN SIEHE DATENBLATT | D'AUTRES OPTIONS VOIR FICHE TECHNIQUE

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

Mechanical Thermostats

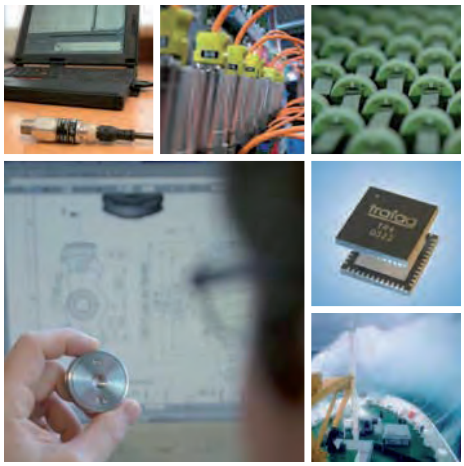
	GS...	D...R	M2S...	L... L...R	F... F...R	I... IS... IS...R EXS... Ex	ISP... ISPT...	ISN... ISNT...	KTSB Ex
	40	41	41	42	43	44, 45, 55 Ex	45, 46	46, 47	54
	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube	Capillary tube
	Cu with FEP Protection	Cu	Cu 1.4435 / 316L	Cu 1.4435 / 316L	Cu	Cu 1.4435 / 316L	Cu	Cu	1.4435 (AISI 316L)
	min. 5 ... 95 max. 20 ... 150	min. 5 ... 95 max. 40 ... 300	min. -30 ... 40 max. 70 ... 350	min. -30 ... 40 max. 70 ... 350	-5 ... 15	min. -30 ... 40 max. 70 ... 350	min. 5 ... 95 max. 20 ... 150	min. 20 ... 110 max. 20 ... 150	min. 20 ... 230 max. 70 ... 350
	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)	micro switch (on/off)
	min. 2.5 max. 3	min. 2 ... 12 max. 4 ... 40 (adjustable)	min. 1.8 max. 5.0	min. 0.7 ... 10 max 4 ... 40 (adjustable)	2	min. 0.7 ... 10 max 4 ... 40 (adjustable)	min. 4 max. 5	min. 2 max. 2.5	0.5 % FS 2.5 ... 8
	-30...70	-30...70	-30...70	-30...70	2 + switchpoint ... 70	-30...70	-30 ... 70	-30 ... 70	-50 ... 60
	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"	max. 140	depending on „Measuring range“	depending on "Measuring range"	depending on "Measuring range"	depending on "Measuring range"
	IP54	IP54	IP54	IP00	IP42	IP65	IP65	IP65	IP66
	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw	Terminal screw
	1.5	2	2	2	6 or 3	2	ISP: 3 ISPT: Sensor on housing	ISN: 3 ISNT: Sensor on housing	2
	○	○	○	○	○	○	●	●	○
	○	○	○	○	○	○	●	●	○
	○	○	○	○	○	○	●	●	○
	○	○	●	●	○	●	○	○	●
	○	○	○	○	○	○	●	○	○
	○	●	●	○	●	○	●	○	●
	○	●	●	○	●	○	○	○	○
	●	○	●	○	○	○	○	○	●
	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	●	○	○	●

OTHER OPTIONS SEE DATA SHEET | ANDERE OPTIONEN SIEHE DATENBLATT | D'AUTRES OPTIONS VOIR FICHE TECHNIQUE

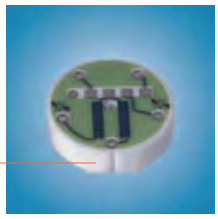
Pressure Transmitter

Drucktransmitter

Transmetteurs de pression



Ceramic membrane
Keramik-Membrane
Membrane en céramique



Ceramic sensor
Keramik-Sensor
Capteur en céramique

Trafag Transmitters & Sensors – High precision products

Trafag transmitters are used for the sensing of pressure and the transmission of pressure proportional electrical signals.

Options
- various process and electrical connections
- absolute/relative pressure measurement
- analogue/digital outputs
- with/without bus interface
- CE, EX or Marine Approvals

Trafag sensors are the basis of precise Pressure Transmitters.

Method of measuring
- Thin film strain gauge. The force of the measured media deforms the thin film strain gauges thereby producing an electrical signal.

Steel sensors
Technology: Thin film on steel
Advantages:
- Very good long-term stability
- Resistant to high medium temperatures
- All wetted parts are stainless steel (without additional material)
- Very good overpressure resistance, ideal for nominal pressures up to 2000 bar

Ceramic Sensors
Technology: Thick film on ceramic
Advantages:
- Resistant to aggressive media
- Ideal for low pressure ranges
- No filling with liquids behind the membrane
- Excellent cost-performance ratio

Steel membrane
Stahl-Membrane
Membrane en acier

Trafag-Transmitter & -Sensoren – Hochpräzise Produkte

Trafag-Transmitter werden für elektronische Druckwertermittlungen und deren Auswertungen benutzt.

Ausführungsvarianten
- variable Druck- und Steckeranschlüsse
- Druckmessung absolut/relativ
- analoge/digitale Ausgänge
- mit/ohne Bus-Schnittstelle
- CE-, EX- oder Schiffszulassungen

Trafag-Sensoren bilden die Basis für die präzisen Drucktransmitter.

Messprinzip
- DMS (DehnungsMessStreifen). Durch Krafteinwirkung des Messmediums wird die DMS-Messbrücke verformt, die ein elektrisches Signal abgibt.

Stahl-Sensoren
Technologie: Dünnfilm auf Stahl
Vorteile:
- Sehr gute Langzeitstabilität
- Erträgt hohe Medientemperaturen
- Alle medienberührenden Teile aus Edelstahl (ohne Zusatzmaterial)
- Sehr gute Überdruckfestigkeit, ideal für Nenndrücke bis 2000 bar

Keramik-Sensoren
Technologie: Dickfilm auf Keramik
Vorteile:
- Resistent gegen aggressive Medien
- Ideal für tiefe Druckbereiche
- Keine Hinterfüllung mit Flüssigkeiten
- Gutes Preis-Leistungs-Verhältnis

Steel sensor
Stahl-Sensor
Capteur en acier

Transmetteurs et capteurs Trafag – Produits de haute précision

Les Transmetteurs Trafag sont utilisés pour l'interprétation et la détection électronique de pression.

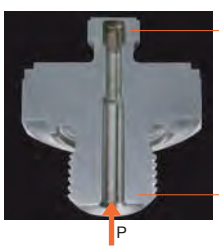
Exécutions
- différents raccords et connecteurs
- mesure pression absolue/relative
- sorties analogiques/digitales
- avec/sans interface Bus
- approbations CE, EX ou navales

Les capteurs Trafag sont la base des transmetteurs de pression.

Principe de mesure
- Jauge de contrainte à couche mince. La force exercée au milieu de la cellule déforme la jauge de contrainte qui fait varier un signal électrique.

Capteurs en acier
Technologie: Couches minces sur acier
Avantages:
- Excellente stabilité à long terme
- Supporte des températures de fluides élevées
- Toutes les parties en contact avec les médias sont en acier (sans matériel supplémentaire)
- Excellente résistance à la pression, idéale pour des pressions nominales de 2000 bar

Capteurs céramique
Technologie: Film épais sur céramique
Avantages:
- Résistant contre les médias agressifs
- Idéale pour faibles plages de pression
- Absence de liquide de remplissage derrière la membrane
- Excellent rapport prix/performances



Pressure sensor
Drucksensor
Capteur de pression

Pressure connection
Druckanschluss
Raccord de pression

Catalogue 2012

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

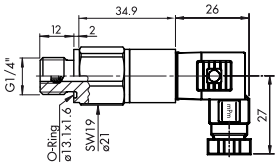
4...20 mA
with completely welded steel sensor system, no sealings, excellent long-term stability

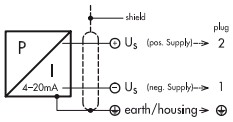
NAT...A
INDUSTRIAL PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	4...20 mA
Electrical connection	industrial standard
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+125

Absolute versions see data sheet

Data sheet H72250
Instruction H73250





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
✓	**NAT2.5A**	0...2.5	5	9...32	±0.2
✓	**NAT4.0A**	0...4.0	8	9...32	±0.2
✓	**NAT6.0A**	0...6.0	12	9...32	±0.2
✓	**NAT10.0A**	0...10.0	20	9...32	±0.2
✓	**NAT16.0A**	0...16.0	32	9...32	±0.2
✓	**NAT25.0A**	0...25.0	50	9...32	±0.2
✓	**NAT40.0A**	0...40.0	80	9...32	±0.2
✓	**NAT100.0A**	0...100.0	200	9...32	±0.2
✓	**NAT250.0A**	0...250.0	500	9...32	±0.2
✓	**NAT400.0A**	0...400.0	800	9...32	±0.2
✓	**NAT600.0A**	0...600.0	1000	9...32	±0.2

NOTES

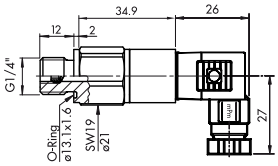
0...10 VDC
with completely welded steel sensor system, no sealings, excellent long-term stability

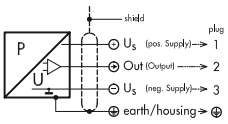
NAT...V
INDUSTRIAL PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	0...10 VDC
Electrical connection	industrial standard
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+125

Absolute versions see data sheet

Data sheet H72250
Instruction H73250





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**NAT2.5V**	0...2.5	5	15...32	±0.2
❍	**NAT4.0V**	0...4.0	8	15...32	±0.2
✓	**NAT6.0V**	0...6.0	12	15...32	±0.2
✓	**NAT10.0V**	0...10.0	20	15...32	±0.2
✓	**NAT16.0V**	0...16.0	32	15...32	±0.2
✓	**NAT25.0V**	0...25.0	50	15...32	±0.2
✓	**NAT40.0V**	0...40.0	80	15...32	±0.2
✓	**NAT100.0V**	0...100.0	200	15...32	±0.2
✓	**NAT250.0V**	0...250.0	500	15...32	±0.2
✓	**NAT400.0V**	0...400.0	800	15...32	±0.2
❍	**NAT600.0V**	0...600.0	1000	15...32	±0.2

NOTES

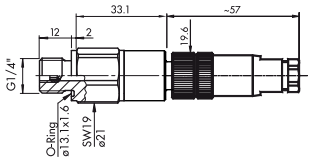
4...20 mA
NAT with extended temperature range and high accuracy, M12 connector, IP67 protection

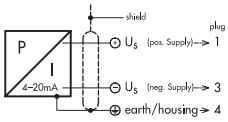
NAH...A
HYDRAULICS PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP67
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	4...20 mA
Electrical connection	M12x1
Operating temperature [°C]	-40...+125
Media temperature [°C]	-40...+125

Absolute versions see data sheet
Versions with higher accuracy see data sheet

Data sheet H72300
Instruction H73250





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
✓	**NAH2.5A**	0...2.5	5	9...32	±0.1
○	**NAH4.0A**	0...4.0	8	9...32	±0.1
✓	**NAH6.0A**	0...6.0	12	9...32	±0.1
✓	**NAH10.0A**	0...10.0	20	9...32	±0.1
○	**NAH16.0A**	0...16.0	32	9...32	±0.1
○	**NAH25.0A**	0...25.0	50	9...32	±0.1
○	**NAH40.0A**	0...40.0	80	9...32	±0.1
○	**NAH100.0A**	0...100.0	200	9...32	±0.1
✓	**NAH250.0A**	0...250.0	500	9...32	±0.1
✓	**NAH400.0A**	0...400.0	800	9...32	±0.1
✓	**NAH600.0A**	0...600.0	1000	9...32	±0.1

NOTES

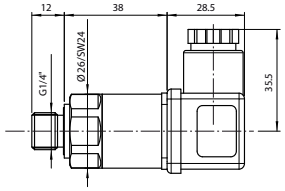
4...20 mA
with ceramic sensor, excellent media compatibility, steel housing

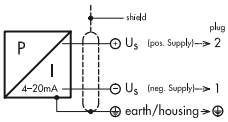
NEW

ECT2...A
ECONOMIC PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thick film on ceramic
Sensor material	Al_2O_3, 1.4301/304 FKM
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	accessories page 60
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+125

Data sheet H72331
Instruction H73331





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**ECT2-1.0A**	0...1.0	2	9...30	±0.2
○	**ECT2-2.5A**	0...2.5	5	9...30	±0.2
○	**ECT2-6.0A**	0...6.0	12	9...30	±0.2
○	**ECT2-10.0A**	0...10.0	20	9...30	±0.2
○	**ECT2-16.0A**	0...16.0	32	9...30	±0.2
○	**ECT2-25.0A**	0...25.0	50	9...30	±0.2
○	**ECT2-40.0A**	0...40.0	80	9...30	±0.2
○	**ECT2-100.0A**	0...100.0	200	9...30	±0.2
○	**ECT2-250.0A**	0...250.0	500	9...30	±0.2

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

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Online-download of data sheet & instruction:

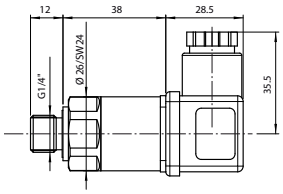
0...10 VDC
with ceramic sensor, excellent media compatibility, steel housing

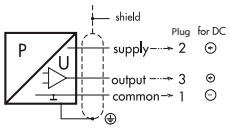
NEW

ECT2...V
ECONOMIC PRESSURE TRANSMITTER

Data sheet H72331
Instruction H73331

Kind of measurement	relative pressure
Sensor technology	thick film on ceramic
Sensor material	Al_2O_3, 1.4301/304 FKM
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	accessories page 60
Output	0...10 VDC
-25...+125Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	

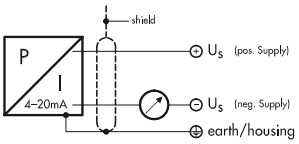




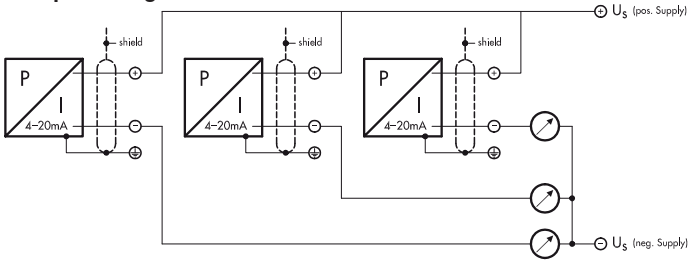
	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]	NOTES
❍	**ECT2-1.0V**	0...1.0	2	15...30	±0.2	
❍	**ECT2-2.5V**	0...2.5	5	15...30	±0.2	
❍	**ECT2-6.0V**	0...6.0	12	15...30	±0.2	
❍	**ECT2-10.0V**	0...10.0	20	15...30	±0.2	
❍	**ECT2-16.0V**	0...16.0	32	15...30	±0.2	
❍	**ECT2-25.0V**	0...25.0	50	15...30	±0.2	
❍	**ECT2-40.0V**	0...40.0	80	15...30	±0.2	
❍	**ECT2-100.0V**	0...100.0	200	15...30	±0.2	
❍	**ECT2-250.0V**	0...250.0	500	15...30	±0.2	

CONNECTION OF

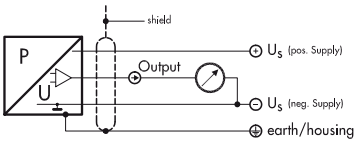
I-Out: 2-wires
single arrangement



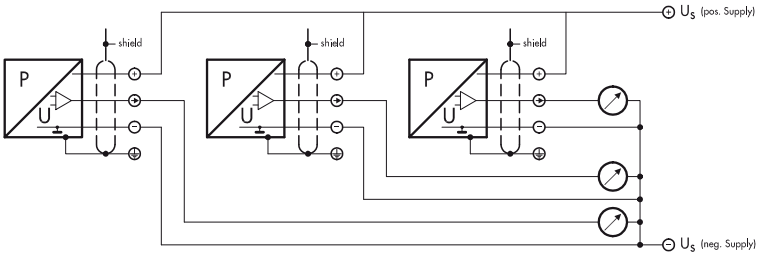
multiple arrangement



U-Out: 3-wires
single arrangement



multiple arrangement



Catalogue 2012

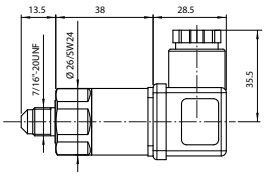
4...20 mA
with ceramic sensor, excellent media compatibility

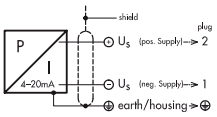
NEW

ECTR2...A
ECONOMIC HVAC PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thick film on ceramic
Sensor material	Al_2O_3, 1.4301/304 CR
Protection	IP65
Pressure connection	7/16“-20UNF male
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+85

Data sheet H72331
Instruction H73331





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**ECTR2-9.0A**	-1...9.0	20	9...30	±0.2
❍	**ECTR2-16.0A**	-1...16.0	32	9...30	±0.2
❍	**ECTR2-25.0A**	0...25.0	50	9...30	±0.2
❍	**ECTR2-30.0A**	0...30.0	50	9...30	±0.2
❍	**ECTR2-40.0A**	0...40.0	80	9...30	±0.2

NOTES

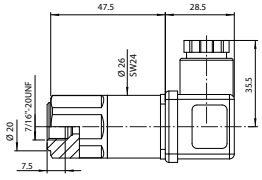
4...20 mA
with valve opener & ceramic sensor, excellent media compatibility

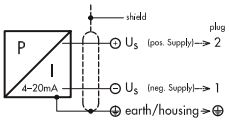
NEW

ECTRV2...A
ECONOMIC HVAC PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thick film on ceramic
Sensor material	Al_2O_3, 1.4301/304 CR
Protection	IP65
Pressure connection	7/16“-20UNF female
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+85

Data sheet H72331
Instruction H73331





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**ECTRV2-9.0A**	-1...9.0	20	9...30	±0.2
❍	**ECTRV2-16.0A**	-1...16.0	32	9...30	±0.2
❍	**ECTRV2-25.0A**	0...25.0	50	9...30	±0.2
❍	**ECTRV2-30.0A**	0...30.0	50	9...30	±0.2
❍	**ECTRV2-40.0A**	0...40.0	80	9...30	±0.2

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
❍ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

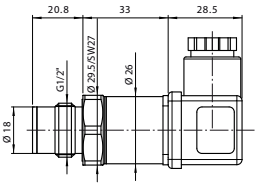
4...20 mA
steel sensor with flush membrane

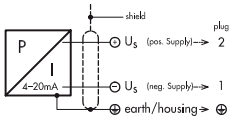
NEW

FPT...A
FLUSH MEMBRANE PRESSURE TRANSMITTER

Data sheet H72316
Instruction H73316

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4548 (630)
Protection	IP65
Pressure connection	Flush membrane G1/2“ male
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-40...+85
Media temperature [°C]	-40...+125





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**FPT10.0A**	0...10.0	20	9...30	±0.2
❍	**FPT16.0A**	0...16.0	32	9...30	±0.2
❍	**FPT25.0A**	0...25.0	50	9...30	±0.2
❍	**FPT40.0A**	0...40.0	80	9...30	±0.2
❍	**FPT100.0A**	0...100.0	200	9...30	±0.2

NOTES

Pressure adapters & other accessories see pages 58-64

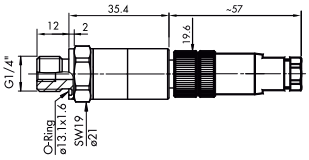
4...20 mA
high temperature range and accuracy, excellent over pressure safety

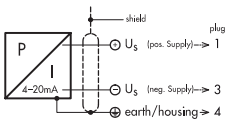
NSL...A
LOW PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP67
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	4...20 mA
Electrical connection	M12x1
Operating temperature [°C]	-40...+125
Media temperature [°C]	-40...+125

Absolute versions see data sheet

GL, RINA, DNV





Data sheet H72302
Instruction H73250

	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**NSL0.2A**	0...0.2	1.2	9...32	±0.1
○	**NSL0.4A**	0...0.4	1.2	9...32	±0.1
○	**NSL0.6A**	0...0.6	1.5	9...32	±0.1
○	**NSL1.0A**	0...1.0	2	9...32	±0.1
○	**NSL1.6A**	0...1.6	3.5	9...32	±0.1
○	**NSL2.5A**	0...2.5	5	9...32	±0.1

NOTES

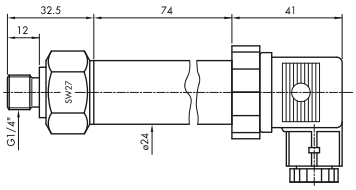
4...20 mA
for shipbuilding, piezo-resistive measuring element

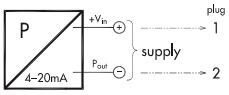
NAP...A
PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	piezo-resistive
Sensor material	1.4435 /316L
Protection	IP65
Pressure connection	G1/4“ male
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	0...+70
Media temperature [°C]	0...+80

Versions with frontal or flush diaphragm see data sheet

GL, KRS





Data sheet H72230

	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**NAP0.1A**	0...0.1	3	9...33	±0.5
○	**NAP0.2A**	0...0.2	3	9...33	±0.5
○	**NAP0.4A**	0...0.4	3	9...33	±0.5
○	**NAP0.6A**	0...0.6	3	9...33	±0.5
○	**NAP1.0A**	0...1.0	3	9...33	±0.5

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

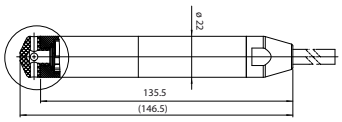
4...20 mA
for depth and level measurement

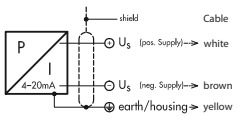
ECL...A
SUBMERSIBLE PRESSURE TRANSMITTER

Data sheet H72328
Instruction H73328

Kind of measurement	relative pressure
Sensor technology	thick film on ceramic
Sensor material	Al_2O_3 316L, 1.4435
Protection	IP68
Output	4...20 mA
Electrical connection	cable
Operating temperature [°C]	-25...80
Media temperature [°C]	-25...80
Cable insulation	PUR/PTFE/PE

- Please indicate employment medium
- Please indicate cable material
- Fix cable length: ECL0.2A L = 5 m PUR
  ECL0.5A L = 10 m PUR





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
✓	**ECL0.2A**	0...0.2	2	9...30	±0.3
✓	**ECL0.5A**	0...0.5	2	9...30	±0.3

NOTES

4...20 mA
for depth and level measurement from 1 m, also for shipbuilding

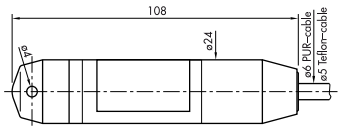
NAL...A
SUBMERSIBLE PRESSURE TRANSMITTER

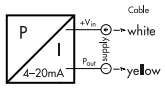
Data sheet H72228

Kind of measurement	relative pressure
Sensor technology	piezo-resistive
Sensor material	1.4435 /316L
Protection	IP68
Output	4...20 mA
Electrical connection	cable
Operating temperature [°C]	-5...50
Media temperature [°C]	-5...50
Cable insulation	PUR/Teflon

- Please indicate employment medium
- Please indicate cable material PUR (NALPUR/M) or Teflon (NALTEF/M)
- Options: Saltwater and oil resistant (see data sheet)

GL, KRS





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**NAL0.1A**	0...0.1	3	9...33	±0.5
○	**NAL0.2A**	0...0.2	3	9...33	±0.5
○	**NAL1.0A**	0...1.0	3	9...33	±0.5

NOTES

4...20 mA, NAT Version with ship approvals extended temperature range and high accuracy, M12 connector, IP67 protection

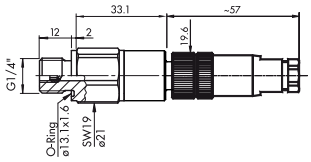
NAE...A
ENGINE PRESSURE TRANSMITTER

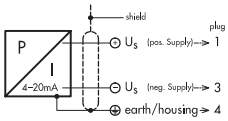
Data sheet H72301
Instruction H73250

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP67
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	4...20 mA
Electrical connection	M12x1
Operating temperature [°C]	-40...+125
Media temperature [°C]	-40...+125

Versions with higher accuracy see data sheet

GL, ABS, BV, DNV, RINA, LRS, KRS, NKK





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**NAE2.5A**	0...2.5	5	9...32	±0.1
○	**NAE4.0A**	0...4.0	8	9...32	±0.1
○	**NAE6.0A**	0...6.0	12	9...32	±0.1
○	**NAE10.0A**	0...10.0	20	9...32	±0.1
○	**NAE16.0A**	0...16.0	32	9...32	±0.1
○	**NAE25.0A**	0...25.0	50	9...32	±0.1
○	**NAE40.0A**	0...40.0	80	9...32	±0.1
○	**NAE100.0A**	0...100.0	200	9...32	±0.1
○	**NAE250.0A**	0...250.0	500	9...32	±0.1
○	**NAE400.0A**	0...400.0	800	9...32	±0.1
○	**NAE600.0A**	0...600.0	1000	9...32	±0.1

NOTES

4...20 mA, thin film on steel sensor, no sealings for shipbuilding, with high accuracy and EN175301-803 electrical connector

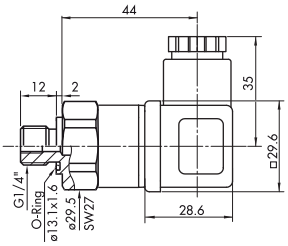
EPN...A
ENGINE PRESSURE TRANSMITTER

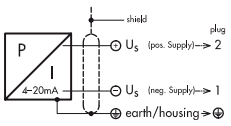
Data sheet H72312
Instruction H73311

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-40...+125
Media temperature [°C]	-40...+125

Pressure peak damping element: integrated, info see chapter Accessories

GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
✓	**EPN4.0A**	0...4.0	10	9...32	±0.2
✓	**EPN6.0A**	0...6.0	15	9...32	±0.2
✓	**EPN10.0A**	0...10.0	20	9...32	±0.2
✓	**EPN16.0A**	0...16.0	32	9...32	±0.2
✓	**EPN25.0A**	0...25.0	80	9...32	±0.2
✓	**EPN40.0A**	0...40.0	80	9...32	±0.2
✓	**EPN60.0A**	0...60.0	200	9...32	±0.2
✓	**EPN100.0A**	0...100.0	200	9...32	±0.2
✓	**EPN250.0A**	0...250.0	500	9...32	±0.2
✓	**EPN400.0A**	0...400.0	800	9...32	±0.2

NOTES

Catalogue 2012

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

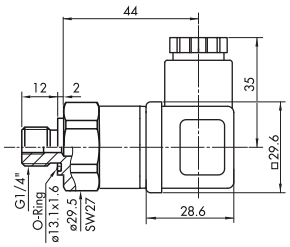
4...20 mA, SOLD IN BULK OF 50 PCS. ONLY
WITHOUT CABLE SOCKET EN 175301-803

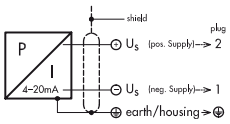
EPI...A
INDUSTRIAL PRESSURE TRANSMITTER

Data sheet H72314
Instruction H73311

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-40...+125
Media temperature [°C]	-40...+125

Pressure peak damping element: integrated, info see chapter Accessories





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**EPI4.0A**	0...4.0	10	9...32	±0.2
❍	**EPI6.0A**	0...6.0	15	9...32	±0.2
❍	**EPI10.0A**	0...10.0	20	9...32	±0.2
❍	**EPI16.0A**	0...16.0	32	9...32	±0.2
❍	**EPI25.0A**	0...25.0	80	9...32	±0.2
❍	**EPI40.0A**	0...40.0	80	9...32	±0.2
❍	**EPI60.0A**	0...60.0	200	9...32	±0.2
❍	**EPI100.0A**	0...100.0	200	9...32	±0.2
❍	**EPI250.0A**	0...250.0	500	9...32	±0.2
❍	**EPI400.0A**	0...400.0	800	9...32	±0.2
✓	**F90158**	Cable socket EN175301-803-A, Box of 50 pcs.			

NOTES

completely welded steel sensor system, high overpressure safety
wide range of options ->select your own version from data sheet

EPNCR
HIGH PRESSURE TRANSMITTER

Data sheet H72312
Instruction H73311

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4548/630
Protection	IP65
Pressure connection	see data sheet
Output	see data sheet
Electrical connection	see data sheet
Operating temperature [°C]	-40...+125
Media temperature [°C]	-40...+125

GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
i	**EPNCR16_**	0...1600	3000	9...32	±0.2
i	**EPNCR20_**	0...2000	3000	9...32	±0.2
i	**EPNCR25_**	0...2500	3000	9...32	±0.2

NOTES

Catalogue 2012

Pressure Transmitter | Drucktransmitter | Transmetteurs de pression

4...20 mA
for shipbuilding, with ceramic sensor, excellent media compatibility

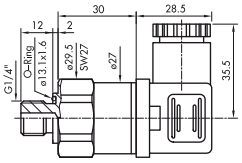
ECON...A
ECONOMIC MARINE TRANSMITTER

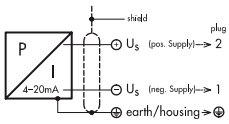
Kind of measurement	relative pressure
Sensor technology	thick film on ceramic
Sensor material	Al_2O_3, 316L (1.4435 or 1.4404), FKM
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	accessories page 60
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+85

Please consult us for other ranges up to 250 bar

GL, ABS, BV, DNV, RINA, LRS, KRS, NKK

Data sheet H72239
Instruction H73212





	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
✓	**ECON4.0A**	0...4.0	10	9...32	±0.3
✓	**ECON6.0A**	0...6.0	15	9...32	±0.3
✓	**ECON10.0A**	0...10.0	25	9...32	±0.3
✓	**ECON16.0A**	0...16.0	40	9...32	±0.3
✓	**ECON40.0A**	0...40.0	80	9...32	±0.3

NOTES

4...20 mA, substitute NP...A4 type
30mm block design, mounting compatibility with Picostat family PST and ISP

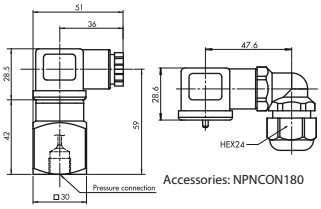
NPN...A4
PICOTRANS PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4548/630
Protection	IP65
Pressure connection	G1/4“ female
Pressure peak damping element	accessories page 60
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-40...+100
Media temperature [°C]	-40...+100

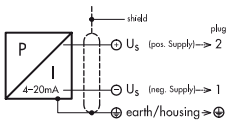
please consult us for other ranges up to 400 bar

GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

Data sheet H72313
Instruction H73311



Accessories: NPNCON180



	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**NPN4.0A4**	0...4.0	10	10...34	±0.2
✓	**NPN6.0A4**	0...6.0	15	10...34	±0.2
✓	**NPN10.0A4**	0...10.0	20	10...34	±0.2
○	**NPN16.0A4**	0...16.0	32	10...34	±0.2
○	**NPN25.0A4**	0...25.0	80	10...34	±0.2
○	**NPN40.0A4**	0...40.0	80	10...34	±0.2
✓	**NPNCON180**	Female electrical connector EN175301-803-A, 180° angled			

NOTES

Pressure adapters & other accessories see pages 58–64

Catalogue 2012

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

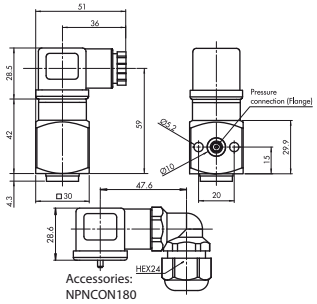
4...20 mA, substitute NP...AF4 type
NPN...A4 version with flange connection, mounting compatibility with PST and ISP

NPN...AF4
PICOTRANS PRESSURE TRANSMITTER

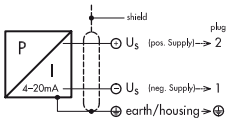
Data sheet H72313
Instruction H73311

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4548/630
Protection	IP65
Pressure connection	flange connection
Output	4...20 mA
Electrical connection	EN175301-803-A
Operating temperature [°C]	-40...+100
Media temperature [°C]	-40...+100

- see Diagnostic Valve Block DVB (chapter Accessories)
- versions with higher accuracy see data sheet
- please consult us for other ranges up to 400 bar



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS



	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
✓	**NPN4.0AF4**	0...4.0	10	10...34	±0.2
✓	**NPN6.0AF4**	0...6.0	15	10...34	±0.2
✓	**NPN10.0AF4**	0...10.0	20	10...34	±0.2
✓	**NPN16.0AF4**	0...16.0	32	10...34	±0.2
○	**NPN25.0AF4**	0...25.0	80	10...34	±0.2
✓	**NPN40.0AF4**	0...40.0	80	10...34	±0.2
✓	**NPNCON180**	Female electrical connector EN175301-803-A, 180° angled			

NOTES

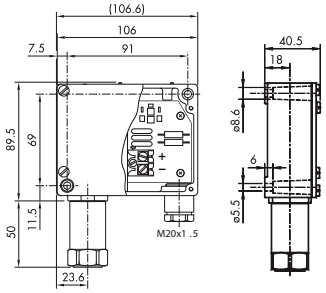
4...20 mA
rugged transmitter for shipbuilding

N...
NAVITRAG MARINE TRANSMITTER

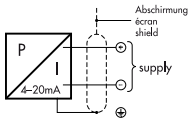
Data sheet H72206
Instruction H70722

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP65
Pressure connection	G1/4“ female
Output	4...20 mA
Electrical connection	terminal screw
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...125

- Mounting plate see MB31 (chapter Accessories)



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS



	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**N1.0**	0...1.0	3	12...34	±0.2
○	**N2.5**	0...2.5	6	12...34	±0.2
○	**N4.0**	0...4.0	10	12...34	±0.2
✓	**N6.0**	0...6.0	15	12...34	±0.2
✓	**N10.0**	0...10.0	20	12...34	±0.2
✓	**N16.0**	0...16.0	32	12...34	±0.2
○	**N25.0**	0...25.0	80	12...34	±0.2
✓	**N40.0**	0...40.0	80	12...34	±0.2
○	**N100.0**	0...100.0	200	12...34	±0.2
○	**N250.0**	0...250.0	500	12...34	±0.2
✓	**N400.0**	0...400.0	800	12...34	±0.2

NOTES

Catalogue 2012

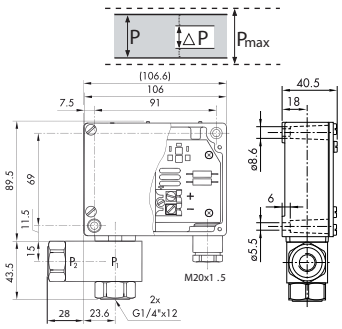
Pressure Transmitter | Drucktransmitter | Transmetteurs de pression

4...20 mA
for shipbuilding

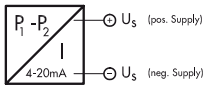
ND...
NAVITRAG DIFFERENTIAL TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP65
Pressure connection	G1/4“ female
Output	4...20 mA
Electrical connection	terminal screw
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+125

ℹ Mounting plate see MB31 (chapter Accessories)



BV, DNV, RINA



Data sheet H72218
Instruction H73218

	Type	Range P [bar]	ΔP [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**ND1.0**	0...2.5	0...1.0	6	12...34	±0.5
❍	**ND1.5**	-1...6	-1...1.5	15	12...34	±0.5
✓	**ND2.5**	0...6	0...2.5	15	12...34	±0.5
❍	**ND5**	-1...16	-1...5.0	32	12...34	±0.5
✓	**ND6**	0...16	0...6.0	32	12...34	±0.5

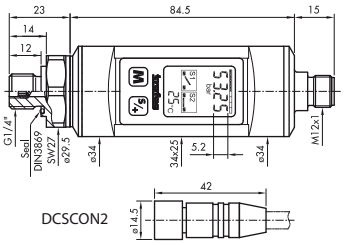
NOTES

3 in 1:
2 relays output pressure switch with LCD & 4...20 mA output

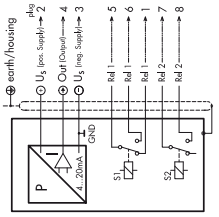
DCS...AR
DISPLAY CONTROL SWITCH

Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP65
Pressure connection	G1/4“ male
Pressure peak damping element	integrated ℹ page 60
Output	4...20 mA; 2 relays 30W (max.1 A)/36 V AC/DC
Electrical connection	M12x1
Operating temperature [°C]	-25...+80
Media temperature [°C]	-25...+125

ℹ Please consult us for other ranges up to 2000 bar



GL



Data sheet H72605
Instruction H73605

	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**DCS2.5AR**	0...2.5	6	11...32	±0.2
❍	**DCS4.0AR**	0...4.0	10	11...32	±0.2
❍	**DCS6.0AR**	0...6.0	15	11...32	±0.2
❍	**DCS10.0AR**	0...10.0	20	11...32	±0.2
❍	**DCS16.0AR**	0...16.0	32	11...32	±0.2
❍	**DCS25.0AR**	0...25.0	80	11...32	±0.2
❍	**DCS40.0AR**	0...40.0	80	11...32	±0.2
❍	**DCS100.0AR**	0...100.0	200	11...32	±0.2
❍	**DCS250.0AR**	0...250.0	500	11...32	±0.2
✓	**DCSCON2**	Female electrical connector incl. cable, length 2 m (PUR)			
✓	**DCSCON5**	Female electrical connector incl. cable, length 5 m (PUR)			
✓	**DCSCON10**	Female electrical connector incl. cable, length 10 m (PUR)			

NOTES

Catalogue 2012

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
❍ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

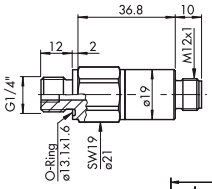
CANopen bus
smallest design, for high vibrations & high temperatures, medium accuracy

CMP...M
CANopen MINIATURE PRESSURE-TRANSMITTER

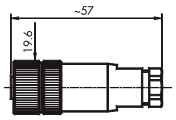
Data sheet H72614
Instruction H73614

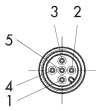
Kind of measurement	relative pressure
Sensor technology	thin film on steel
Sensor material	1.4542/630
Protection	IP67
Pressure connection	G1/4“ male
Pressure peak damping element	integrated page 60
Output	CANopen bus protocol
Electrical connection	M12x1
Operating temperature [°C]	-40...+85
Media temperature [°C]	-50...+125

Versions with higher accuracy and higher temperature resistance see data sheet & page 67



Accessories:
COPCON





PIN	OUT
1	⏚
2	V + (24 V DC)
3	V - (0 VDC)
4	CAN_High
5	CAN_Low

	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
○	**CMP4.0M**	0...4.0	12	8...32	±0.2
○	**CMP6.0M**	0...6.0	12	8...32	±0.2
○	**CMP10.0M**	0...10.0	20	8...32	±0.2
○	**CMP16.0M**	0...16.0	32	8...32	±0.2
○	**CMP25.0M**	0...25.0	50	8...32	±0.2
○	**CMP40.0M**	0...40.0	80	8...32	±0.2
○	**CMP100.0M**	0...100.0	200	8...32	±0.2
○	**CMP250.0M**	0...250.0	500	8...32	±0.2
○	**CMP400.0M**	0...400.0	800	8...32	±0.2
✓	**COPCON**	Female electrical connector M12x1, 5 poles			

NOTES

Pressure adapters & other accessories see pages 58-64

Pressure Switches | Druckschalter | Pressostats

Trafag Pressure Switches – for multiple applications

Trafag pressure switches are used to control pressures by means of a simple on/off electrical switch.

Options
- with/without display
- various switching capabilities
- CE, EX or Marine Approved

Sensing systems
- Piston:
  - ideal for hydraulic systems
  - suitable for a high number of switching operations
  - resistant to abrupt pressure changes
- Metal bellows:
  - sensitive pressure control of liquids, vapours and gases
- Membrane:
  - measurement of liquids, vapours and gases
  - suitable for a high number of switching operations
  - resistant to abrupt pressure changes
  - resistant to overpressure

Trafag-Pressostate – für vielseitige Anwendungen

Trafag-Pressostate finden dort ihren Einsatz, wo Drücke mittels eines einfachen elektrischen Ein-/Aus-Schaltsignals geregelt werden sollen.

Ausführungsvarianten
- mit/ohne Anzeige
- verschiedene Schaltleistungen
- CE-, EX- oder Schiffszulassungen

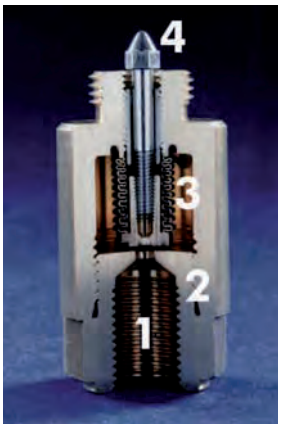
Messfühler-Systeme
- Kolben:
  - ideal für Hydrauliksysteme
  - hohe Schalthäufigkeit zulässig
  - schlagartige Druckänderungen möglich
- Metallbalg:
  - feinfühlige Druckregelung von flüssigen, dampf- und gasförmigen Medien
- Membrane:
  - Messung von flüssigen, dampf- und gasförmigen Medien
  - hohe Schalthäufigkeit zulässig
  - schlagartige Druckänderungen möglich
  - grosse Überdrucksicherheit

Pressostats Trafag – pour applications variées

Les pressostats Trafag sont utilisés pour la régulation des pressions par l'intermédiaire d'un signal électrique (on/off).

Exécutions
- avec/sans fenêtre de visualisation
- différents pouvoirs de coupure
- approbations CE, EX ou navales

Types de détecteurs
- Piston:
  - idéal pour systèmes hydrauliques
  - grand nombre de manœuvres du contact
  - pointes de pression admissibles
- Soufflet métallique:
  - pour régler sensiblement la pression des liquides, vapeurs et gaz
- Membrane:
  - mesure de médias liquides, vapeurs et gazeux
  - grand nombre de manœuvres du contact
  - pointes de pression admissibles
  - grande sécurité contre les surpressions



Metal bellows sensor / Metallbalg-Fühler / Détecteur soufflet métallique:

1	connection	Anschluss	raccord
2	housing	Gehäuse	boîtier
3	metal bellows	Metallbalg	soufflet métallique
4	switch rod	Schaltstange	perche régulateur

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

30 mm block design, economic pressure switch mounting compatibility with Picostat family NP and ISP

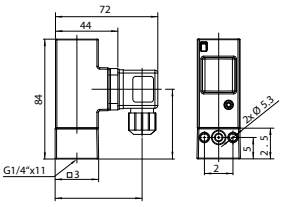
NEW DESIGN

PST4B_4...
PICOSTAT, BELLOWS SENSOR

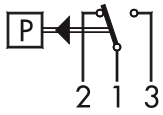
Sensor technology	bellows
Sensor material	bronze
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+125
EN 60730-2-6	Type 2.B.H.

ℹ Differential Pressure Picostat see PST4D on page 32

Ship approvals pending



AC 250 V 6 (1) A
DC 24 V 3 (2) A
DC 220 V 0.25 (0.1) A



Data sheet H72367
Instruction H73367

	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
❍	**PST4B3.44**	-0.6...3.4	12	0.3
❍	**PST4B64**	0...6	12	0.3
❍	**PST4B164**	1...16	24	0.6
❍	**PST4B254**	2...25	40	1.5
❍	**PST4B404**	4...40	50	1.8

NOTES

PST4...4 version with flange connection ideal for valve block with NP and ISP series

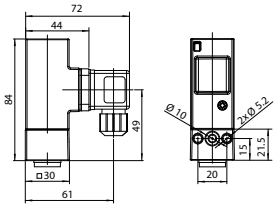
NEW DESIGN

PST4B_F4...
PICOSTAT, BELLOWS SENSOR & FLANGE

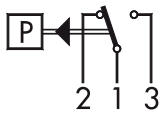
Sensor technology	bellows
Sensor material	bronze
Protection	IP65
Pressure connection	flange connection
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+125
EN 60730-2-6	Type 2.B.H.

ℹ Differential Pressure Picostat see PST4D on page 32
ℹ see Diagnostic Valve Block DVB (chapter Accessories)

Ship approvals pending



AC 250 V 6 (1) A
DC 24 V 3 (2) A
DC 220 V 0.25 (0.1) A



Data sheet H72367
Instruction H73367

	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
❍	**PST4B3.4F4**	-0.6...3.4	12	0.3
❍	**PST4B6F4**	0...6	12	0.3
❍	**PST4B16F4**	1...16	24	0.6
❍	**PST4B25F4**	2...25	40	1.5
❍	**PST4B40F4**	4...40	50	1.8

NOTES

Pressure Switches | Druckschalter | Pressostats

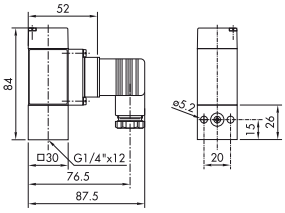
30 mm block design
mounting compatibility with Picostat family NP and ISP

PST_4...
PICOSTAT, BELLOWS SENSOR

Sensor technology	bellows
Sensor material	bronze, brass
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+120
EN 60730-2-6	Type 2.B.H.

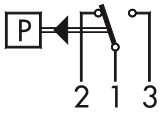
Differential Pressure Picostat see PST4D on page 32

Data sheet H72202
Instruction H73202



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 10 (3) A
DC 24 V 2 (1) A
DC 220 V 0.25 (0.2) A



	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
✓	**PST3.44**	-0.6...3.4	12	0.3
✓	**PST64**	0...6	12	0.3
✓	**PST164**	1...16	24	0.7
✓	**PST404**	4...40	40	1.6

NOTES

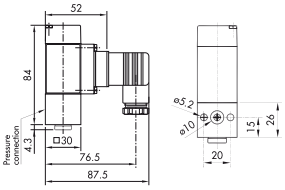
PST...4 version with flange connection
ideal for valve block with NP and ISP series

PST_F4...
PICOSTAT, BELLOWS SENSOR & FLANGE

Sensor technology	bellows
Sensor material	bronze, brass
Protection	IP65
Pressure connection	flange connection
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+120
EN 60730-2-6	Type 2.B.H.

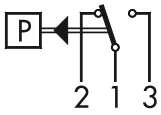
Differential Pressure Picostat see PST4D on page 32
see Diagnostic Valve Block DVB (chapter Accessories)

Data sheet H72202
Instruction H73202



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 10 (3) A
DC 24 V 2 (1) A
DC 220 V 0.25 (0.2) A



	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
✓	**PST3.4F4**	-0.6...3.4	12	0.3
✓	**PST6F4**	0...6	12	0.3
✓	**PST16F4**	1...16	24	0.7
✓	**PST40F4**	4...40	40	1.6

NOTES

Pressure adapters & other accessories see pages 58-64

Catalogue 2012

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

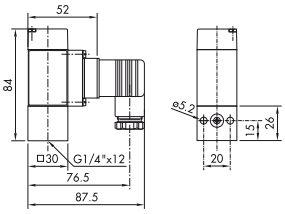
Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

30 mm block design, mounting compatibility with Picostat family NP and ISP high number of switching operations and overpressures, high vibration resistance

PSTM_4...
PICOSTAT, MEMBRANE SENSOR

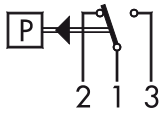
Sensor technology	membrane
Sensor material	FKM, brass
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	0...+80
Media temperature [°C]	0...+80

Differential Pressure Picostat see PST4D on page 32



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 10 (3) A
DC 24 V 2 (1) A
DC 220 V 0.25 (0.2) A



Data sheet H72202
Instruction H73202

	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
✓	**PSTM164**	1...16	200	0.4-1.7
✓	**PSTM404**	4...40	200	1.2-4.5
✓	**PSTM1004**	10...100	200	4-16

NOTES

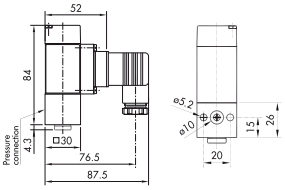
PSTM...4 version with flange connection ideal for valve block with NP and ISP series

PSTM_F4...
PICOSTAT, MEMBRANE SENSOR & FLANGE

Sensor technology	membrane
Sensor material	FKM, brass
Protection	IP65
Pressure connection	flange connection
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	0...+80
Media temperature [°C]	0...+80

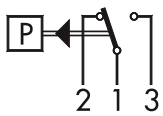
Differential Pressure Picostat see PST4D on page 32

see Diagnostic Valve Block DVB (chapter Accessories)



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 10 (3) A
DC 24 V 2 (1) A
DC 220 V 0.25 (0.2) A



Data sheet H72202
Instruction H73202

	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
✓	**PSTM16F4**	1...16	200	0.4-1.7
✓	**PSTM40F4**	4...40	200	1.2-4.5
○	**PSTM100F4**	10...100	200	4-16

NOTES

Catalogue 2012

Pressure Switches | Druckschalter | Pressostats

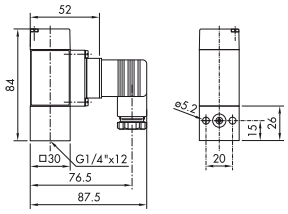
30 mm block design, mounting compatibility with Picostat family NP and ISP for pressure peaks and high overpressures

PSTK_4...
PICOSTAT, PISTON SENSOR

Sensor technology	piston
Sensor material	1.4404 /316L
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+120

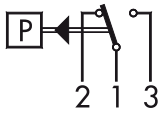
Differential Pressure Picostat see PST4D on page 32

Data sheet H72202
Instruction H73202



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 10 (3) A
DC 24 V 2 (1) A
DC 220 V 0.25 (0.2) A



	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
✓	**PSTK164**	1...16	100	0.8-2.4
❍	**PSTK404**	4...40	100	2-6
✓	**PSTK1004**	10...100	200	5-15
✓	**PSTK2504**	25...250	400	12-40
✓	**PSTK4004**	40...400	600	15-50

NOTES

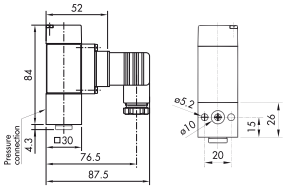
PSTK...4 version with flange connection ideal for valve block with NP and ISP series

PSTK_F4...
PICOSTAT, PISTON SENSOR & FLANGE

Sensor technology	piston
Sensor material	1.4404 /316L
Protection	IP65
Pressure connection	flange connection
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+120

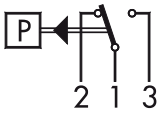
Differential Pressure Picostat see PST4D on page 32
see Diagnostic Valve Block DVB (chapter Accessories)

Data sheet H72202
Instruction H73202



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 10 (3) A
DC 24 V 2 (1) A
DC 220 V 0.25 (0.2) A



	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
❍	**PSTK16F4**	1...16	100	0.8-2.4
❍	**PSTK40F4**	4...40	100	2-6
❍	**PSTK100F4**	10...100	200	5-15
❍	**PSTK250F4**	25...250	400	12-40
❍	**PSTK400F4**	40...400	600	15-50

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
❍ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

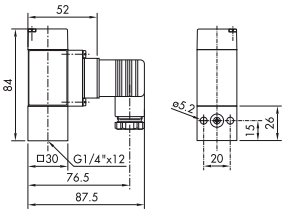
30 mm block design, PST...4 version with stainless steel pressure connection & sensor

PST_S4...
PICOSTAT, BELLOWS SENSOR (1.4435)

Data sheet H72202
Instruction H73202

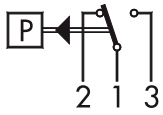
Sensor technology	bellows
Sensor material	1.4404 /316L
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+120
EN 60730-2-6	Type 2.B.H.

Differential Pressure Picostat see PST4D on page 32
see Diagnostic Valve Block DVB (chapter Accessories)



GL, ABS, BV, CCS, RINA, LRS, KRS

AC 250 V 10 (3) A
DC 24 V 2 (1) A
DC 220 V 0.25 (0.2) A



	Type	Range P [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
○	**PST6S4**	0...6	12	0.3
✓	**PST16S4**	1...16	24	0.7

NOTES

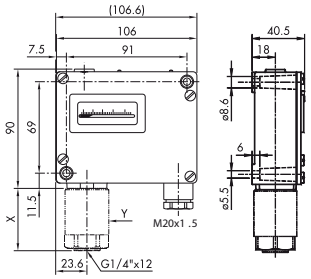
for low pressure ranges with high accuracy

P...
PRESSOSTAT

Data sheet H72252
Instruction H71261

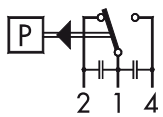
Sensor technology	bellows
Sensor material	bronze, brass
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-20...+70
Media temperature [°C]	-40...+150
EN 60730-2-6	Type 2.B.H.

Mounting plate see MB31 (chapter Accessories)



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Range P [bar]	Max. over-pressure [bar]	Switching diff. fixed [bar]	Diameter Y [mm]	Length X [mm]
✓	**P1.5**	-0.9...1.5	10	0.1	45	56.5
✓	**P2.5**	0.2...2.5	10	0.1	45	56.5
✓	**P4**	0...4	12	0.2	33	47
✓	**P6**	0...6	12	0.2	33	47
✓	**P10**	1...10	24	0.4	27	42.5
✓	**P16**	1...16	24	0.4	27	42.5
✓	**P25**	2...25	40	1	33	47
✓	**P40**	4...40	40	1	33	47

NOTES

Pressure Switches | Druckschalter | Pressostats

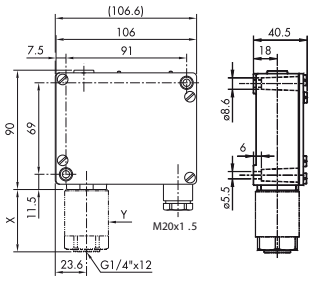
P version without see-through lid

PS...
PRESSOSTAT

Sensor technology	bellows
Sensor material	bronze, brass
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-20...+70
Media temperature [°C]	-40...+150
EN 60730-2-6	Type 2.B.H.

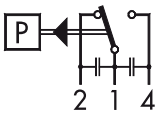
ℹ Mounting plate see MB31 (chapter Accessories)

Data sheet H72252
Instruction H71261



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Range P [bar]	Max. over-pressure [bar]	Switching diff. fixed [bar]	Diameter Y [mm]	Length X [mm]
○	**PS1.5**	-0.9...1.5	10	0.1	45	56.5
○	**PS2.5**	0.2...2.5	10	0.1	45	56.5
✓	**PS6**	0...6	12	0.2	33	47
○	**PS16**	1...16	24	0.4	27	42.5
○	**PS40**	4...40	40	1	27	42.5

NOTES

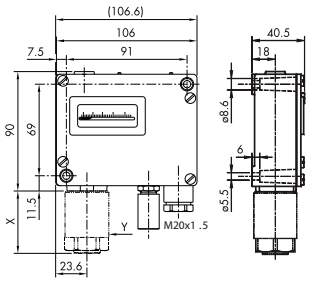
for high number of switching operations
wide adjustable switching differential, calibrated for decreasing pressure

PV...
VARI-PRESSOSTAT

Sensor technology	bellows
Sensor material	bronze, brass
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-20...+70
Media temperature [°C]	-40...+150
EN 60730-2-6	Type 2.B.H.

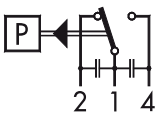
ℹ Mounting plate see MB31 (chapter Accessories)

Data sheet H72257
Instruction H71261



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Range P [bar]	Max. over-pressure [bar]	Switching diff. adjus-table [bar]	Diameter Y [mm]	Length X [mm]
✓	**PV6**	0...6	12	0.4...3.2	33	47
✓	**PV16**	1...16	24	1...7.5	27	42.5
✓	**PV40**	4...40	40	3...18	27	42.5

NOTES

Pressure adapters & other accessories see pages 58-64

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

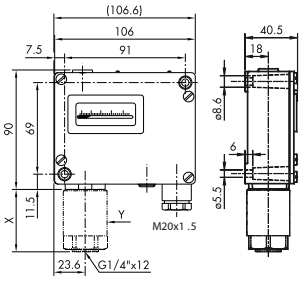
for low pressure ranges
small adjustable switching differential, calibrated for decreasing pressure

PVF...
VARI-PRESSOSTAT

Sensor technology	bellows
Sensor material	bronze, brass
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-20...+70
Media temperature [°C]	-40...+150
EN 60730-2-6	Type 2.B.H.

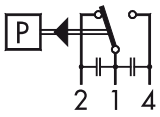
Mounting plate see MB31 (chapter Accessories)

Data sheet H72257
Instruction H71261



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Range P [bar]	Max. over-pressure [bar]	Switching diff. adjus-table [bar]	Diameter Y [mm]	Length X [mm]
✓	**PVF1.5**	-0.9...1.5	10	0.06...0.2	45	56.5
✓	**PVF2.5**	0.2...2.5	10	0.06...0.2	45	56.5
✓	**PVF6**	0...6	12	0.2...0.6	33	47
✓	**PVF16**	1...16	24	0.5...1.6	27	42.5

NOTES

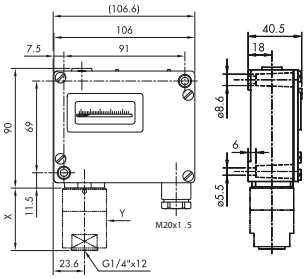
for high pressure, insensitive to pressure peaks and overpressure
with fixed switching differential, stainless steel sensor

PK...
PRESSOSTAT

Sensor technology	piston
Sensor material	1.4435/316L
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-20...+70
Media temperature [°C]	-30...+100
EN 60730-2-6	Type 2.B.H.

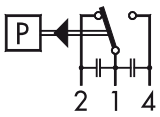
Mounting plate see MB31 (chapter Accessories)

Data sheet H72259
Instruction H71261



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Range P [bar]	Max. over-pressure [bar]	Switching diff. fixed [bar]	Diameter Y [mm]	Length X [mm]
✓	**PK10**	1...10	100	0.45-0.9	33	47
✓	**PK40**	4...40	200	1.8-3.4	27	42.5
✓	**PK100**	10...100	200	3.2-7.5	27	42.5
✓	**PK250**	25...250	400	5.2-16	27	42.5

NOTES

Pressure Switches | Druckschalter | Pressostats

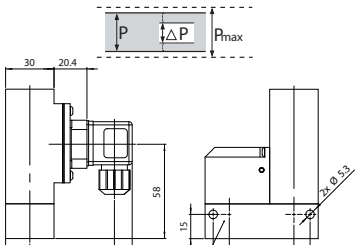
bellows sensor with fixed switching differential

NEW

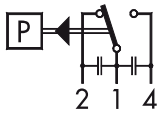
PST4D...
PICOSTAT, DIFFERENTIAL PRESSOSTAT

Sensor technology	bellows
Sensor material	bronze
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+125
EN 60730-1	Type 2.B.H.
EN 60730-2-6	Type 2.B.H.

Ship approvals pending



AC 250 V 10 (3) A
DC 250 V 0.1 (0.05) A
DC 220 V 0.25 (0.2) A
DC 110 V 0.5 (0.3) A
DC 24 V 2 (1) A



Data sheet H72275
Instruction H73275

	Type	Range P [bar]	ΔP [bar]	Max. overpressure [bar]	Switching diff. fixed [bar]
○	**PST4D24**	0...+6	0.5...2	12	see data sheet graphic
○	**PST4D54**	2...+25	1...5	40	see data sheet graphic

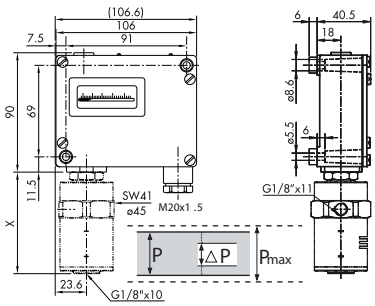
NOTES

bellows sensor with fixed switching differential

PD...
DIFFERENTIAL PRESSOSTAT

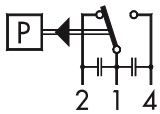
Sensor technology	bellows
Sensor material	bronze, brass
Protection	IP65
Pressure connection	G1/8“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-25...+70
Media temperature [°C]	-40...+150
EN 60730-2-6	Type 2.B.H.

ℹ Mounting plate see MB31 (chapter Accessories)



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



Data sheet H72253
Instruction H73256

	Type	Range P [bar]	ΔP [bar]	Max. over-pressure [bar]	Switching diff. fixed [bar]	Length X [mm]
✓	**PD3.4**	-1...+6	-0.6...+3.4	12	0.16	77
✓	**PD6**	-1...+8	0...6	12	0.16	77
○	**PD16**	-1...+18	1...16	24	0.4	87

NOTES

bellows sensor pressure switch and gas density controller

987/988
PRESSOSTAT

ℹ for more information go to chapter „OEM / customized“ on page 69

Data sheet H72272
Instruction H73272

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

Mechanical Trafag thermostats – versatile variants

Mechanical Trafag thermostats are used in applications where temperatures are controlled by means of a simple electrical on/off switching signal. These instruments operate failsafe under harsh operating conditions (e.g. extreme fluctuation of ambient temperature) and are insensitive to outside environmental conditions.

Measuring principle
The medium in a capillary tube reacts to temperature changes on the principle of heat expansion. This expansion is measured by means of a fine mechanical construction which activates one or several micro-switches.

Available versions
- internal or external temperature adjustment
- measuring scale inside or outside
- with (limiter)/without resetting
- with/without ΔT (switching differential) adjustment
- instruments for inside or outside applications
- optional capillary tube breaking safety device
- One- or two-stage circuit
- CE, EX or ship approval

Sensor systems/auxiliary equipment
- fixed or freely mountable sensor
- sensor material from copper (Cu), Cu nickel plated or stainless steel
- brass nickel plated or stainless steel sensor protection tube
- additional capillary tube protection

Mechanische Trafag-Thermostate – vielseitige Varianten

Trafag-Thermostate finden ihren Einsatz in Applikationen, wo Temperaturen mittels eines einfachen elektrischen Ein-/Aus-Schaltsignals geregelt werden sollen. Diese Geräte funktionieren auch unter harten Einsatzbedingungen einwandfrei (z.B. extreme Schwankungen der Umgebungstemperatur) und sind unempfindlich gegen äussere Umwelteinwirkungen.

Messprinzip
Ein mit Flüssigkeit gefülltes Kapillarrohr reagiert auf eine Temperaturveränderung durch das Prinzip der Wärmeausdehnung. Diese Ausdehnung wird mit einer feinmechanischen Konstruktion erfasst, welche einen oder mehrere Mikroschalter umschaltet.

Ausführungsvarianten
- mit Temperaturverstellung innen/aussen
- Messskala innen oder aussen
- mit (Begrenzer)/ohne Schaltrückstellung
- mit/ohne ΔT-(Schaltdifferenz-)Verstellung
- Gerätefamilien für Innen- oder Aussenapplikationen
- optionale Kapillarrohrbruchsicherung
- Ein- oder Zweistufenschaltung
- CE-, EX- oder Schiffszulassungen

Messfühlersysteme/Zubehör
- fix montierter oder frei montierbarer Fühler
- Fühlermaterial aus Kupfer (Cu), Cu vernickelt oder rostfreiem Stahl
- Fühlerschutzrohr aus Messing vernickelt oder rostfreiem Stahl
- zusätzlicher Kapillarrohrschutz

Thermostats mécaniques Trafag – variantes universelles

Les thermostats Trafag sont utilisés pour des applications où les températures sont contrôlées au moyen d'un simple signal de sortie/d'entrée. Ces appareils fonctionnent parfaitement sous des conditions de travail dures et sont insensibles aux influences de l'environnement extérieur.

Principe de mesure
Le liquide dans le tube capillaire réagit à des changements de température par le principe de l'expansion sous l'influence de la chaleur. Cette expansion est transmise à un système mécanique de précision qui enclenche un ou plusieurs microrupteurs.

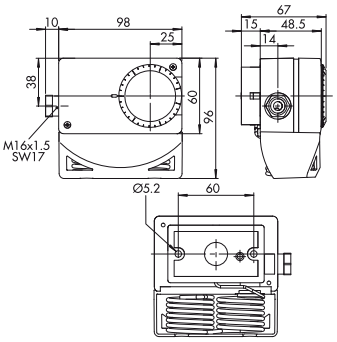
Variantes disponibles
- réglage de température à l'intérieur ou à l'extérieur
- échelle de mesure à l'intérieur ou à l'extérieur
- avec (limiteur)/sans remise à zéro
- avec/sans réglage ΔT (différentiel de l'interrupteur)
- appareils pour des applications à l'intérieur ou à l'extérieur
- dispositif de protection de coupure optionnelle du tube capillaire
- un ou deux circuits électriques
- CE, EX ou approbation navale

Systèmes capteurs/équipement auxiliaire
- capteur installé fixement (prise directe) ou librement (montage à distance)
- matière du capteur: cuivre (Cu), Cu nickelé ou acier inoxydable
- tube de protection du capteur en laiton nickelé ou en acier inoxydable
- dispositif de protection additionnel pour le tube capillaire

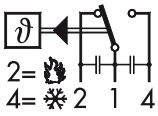
Room temperature controller with external set-point adjustment

A...
AMBISTAT

Set-point adjustment	external
Sensor technology	sensor coil
Sensor material	Cu
Protection	IP54
Output	micros witch
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



Data sheet H72170
Instruction H73624

	Type	Range T [°C]	Switching diff. adjustable [°C]	Operating temperature [°C]
✓	**A30**	0...+30	0.7...6	-30...50
✓	**A33**	-30...+30	0.7...6	-30...40
✓	**A40**	+10...+40	0.7...6	-30...70
✓	**A60**	0...+60	0.7...6	-30...70

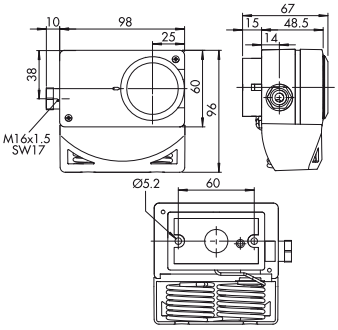
NOTES

Room temperature controller with internal set-point adjustment

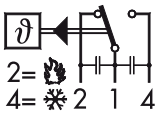
AS...
AMBISTAT

Set-point adjustment	internal
Sensor technology	sensor coil
Sensor material	Cu
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.

ℹ AS with internal set-point adjustment & external reset knob see data sheet H72121
ℹ ASE40 ΔT set at 10 °C



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



Data sheet H72170
Instruction H73624

	Type	Range T [°C]	Switching diff. adjustable [°C]	Operating temperature [°C]
✓	**AS30**	0...+30	0.7...6	-30...50
✓	**AS33**	-30...+30	0.7...6	-30...40
✓	**AS40**	+10...+40	0.7...6	-30...70
✓	**ASE40**	+10...+40	3...10	-30...70
✓	**AS60**	0...+60	0.7...6	-30...70

NOTES

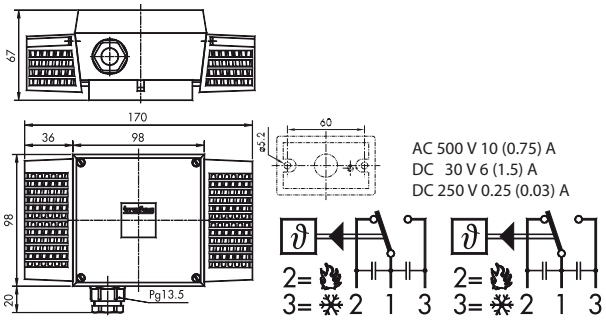
Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

for HVAC, 2 in 1:
2 thermostats in one housing, internal set-point adjustment

ADS...
AMBI-DUOSTAT, DOUBLE ROOM CONTROLLER

Set-point adjustment	internal
Sensor technology	sensor coil
Sensor material	Cu
Protection	IP54
Output	micro switch (2x)
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.



Data sheet H72146
Instruction H73170

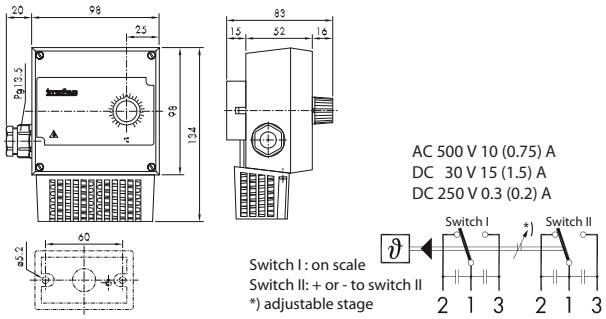
	Type	Range T [°C]	Switching diff. adjustable [°C]	Operating temperature [°C]
❍	**ADS30**	0...+30	0.7...6	-30...+50
❍	**ADS33**	-30...+30	0.7...6	-30...+40
✓	**ADS60**	0...+60	0.7...6	-30...+70

NOTES

2 stage room temperature controller
external knob for temperature set-point adjustment

A2...
ALTERO-AMBISTAT

Set-point adjustment	external
Sensor technology	sensor coil
Sensor material	Cu
Protection	IP54
Output	micro switch (2x)
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.



Switch I : on scale
Switch II: + or - to switch II
*) adjustable stage

Data sheet H72137
Instruction H70311

	Type	Range T [°C]	Switching diff. fixed [°C]	Smallest stage diff. [°C]	Biggest stage diff. [°C]	Operating tempera-ture [°C]
✓	**A230**	0...+30	0.7	-6	15	-30...+50
❍	**A233**	-30...+30	0.7	-6	15	-30...+40
❍	**A260**	0...+60	0.7	-6	15	-30...+70

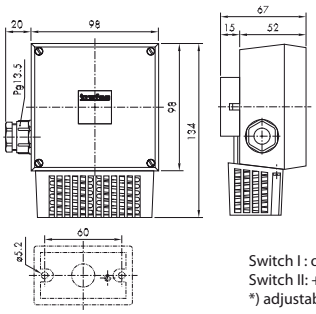
NOTES

Catalogue 2012

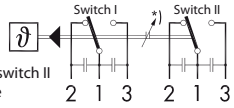
2 stage room temperature controller
internal temperature set-point adjustment

A2S...
ALTERO-AMBISTAT

Set-point adjustment	internal
Sensor technology	sensor coil
Sensor material	Cu
Protection	IP54
Output	micro switch (2x)
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



Switch I : on scale
Switch II: + or - to switch II
*) adjustable stage

Data sheet H72137
Instruction H70311

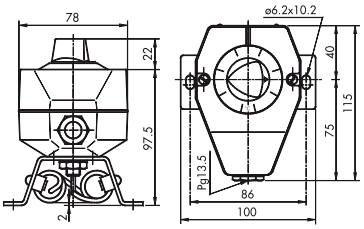
	Type	Range T [°C]	Switching diff. fixed [°C]	Smallest stage diff. [°C]	Biggest stage diff. [°C]	Operating tempera-ture [°C]
✓	**A2S33**	-30...+30	0.7	-6	15	-30...+40
✓	**A2S30**	0...+30	0.7	-6	15	-30...+50
✓	**A2S60**	0...+60	0.7	-6	15	-30...+70

NOTES

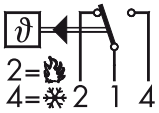
Room temperature controller
rugged housing, external set-point adjustment

IA...
INDU-AMBISTAT

Set-point adjustment	external
Sensor technology	sensor coil
Sensor material	Cu
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



Data sheet H72116
Instruction H73111

	Type	Range T [°C]	Switching diff. adjustable [°C]	Operating temperature [°C]
○	**IA33**	-30...+30	0.7...6	-30...+40
✓	**IA35**	+5...+35	0.7...6	-30...+50
○	**IA60**	0...+60	0.7...6	-30...+70

NOTES

Pressure adapters & other accessories see pages 58-64

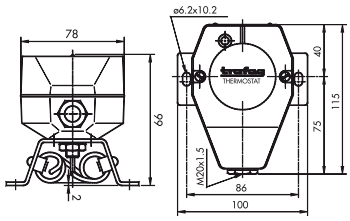
Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

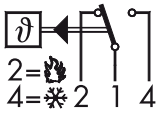
Room temperature controller
rugged housing, internal set-point adjustment

IAS...
INDU-AMBISTAT

Set-point adjustment	internal
Sensor technology	sensor coil
Sensor material	Cu
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



Data sheet H72116
Instruction H73111

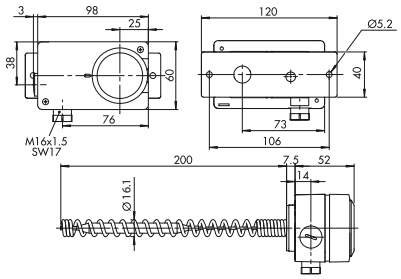
	Type	Range T [°C]	Switching diff. adjustable [°C]	Operating temperature [°C]	NOTES
✓	**IAS33**	-30...+30	0.7...6	-30...+40	
○	**IAS35**	+5...+35	0.7...6	-30...+50	
○	**IAS60**	0...+60	0.7...6	-30...+70	

duct temperature controller
internal set-point adjustment

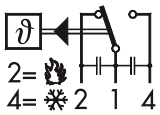
MSK...
HVAC MINISTAT FOR DUCTS

Set-point adjustment	internal
Sensor technology	capillary tube, direct mounted sensor
Sensor material	Cu
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.

ℹ Sensor duct holder see K/W... (chapter Accessories)



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



Data sheet H72177
Instruction H73624

	Type	Range T [°C]	Switching diff. adjustable [°C]	Media temperature [°C]	NOTES
✓	**MSK35**	0...+35	0.7...10	max. 50	
✓	**MSK40**	-30...+40	0.7...10	max. 45	
✓	**MSK80**	+10...+80	0.7...10	max. 100	

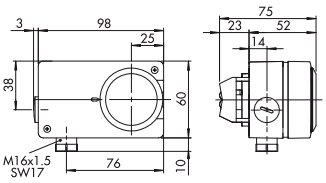
pipe mounting temperature controller
internal set-point adjustment

MSP...
HVAC MINISTAT FOR PIPES

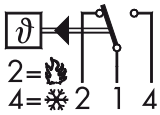
Data sheet H72175
Instruction H73663

Set-point adjustment	internal
Sensor technology	capillary tube, direct mounted sensor
Sensor material	Cu
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.

ℹ Version with external adjustment on request
ℹ MSP with internal set-point adjustment & external reset knob see data sheet H72176



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Range T [°C]	Switching diff. adjustable [°C]	Media temperature [°C]
❍	**MSP35**	-10...+35	3.7...14	max. 50
❍	**MSP80**	-10...+80	3.7...14	max. 85
✓	**MSP95**	+5...+95	3.7...14	max. 105
❍	**MSP110**	+20...+110	3.7...14	max. 115

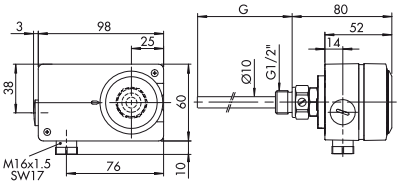
NOTES

internal set-point adjustment
incl. protection tube

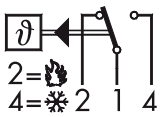
MST...
MINISTAT FOR DIRECT MOUNTING

Data sheet H72174
Instruction H73624

Set-point adjustment	internal
Sensor technology	capillary tube, direct mounted sensor
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
Protection tube material	brass nickel plated
EN 60730-2-9	Type 2.B.H.



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Range T [°C]	Length G [mm]	Switching diff. adjustable [°C]	Media temperature [°C]
✓	**MST8015**	-10...+80	150	2...12	max. 105
❍	**MST8040**	-10...+80	400	2...12	max. 85
✓	**MST9511**	+5...+95	110	2...12	max. 85
✓	**MST9515**	+5...+95	150	2...12	max. 105
✓	**MST9540**	+5...+95	400	2...12	max. 105
✓	**MST15015**	+20...+150	150	2.5...16	max. 165
❍	**MST15040**	+20...+150	400	2.5...16	max. 165

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
❍ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

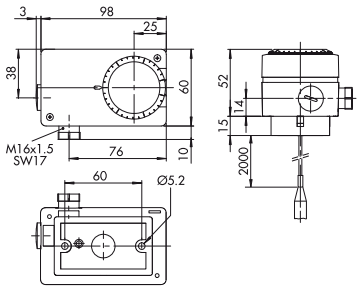
external set-point adjustment without protection tube

M...
MINISTAT

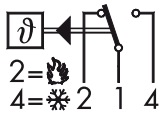
Set-point adjustment	external
Sensor technology	capillary tube, remote sensor
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2

ℹ Protection tubes see end of this chapter

Data sheet H72172
Instruction H73624



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Sensor material	Range T [°C]	Switching diff. adjustable [°C]	Media temperature [°C]	NOTES
✓	**M35**	Cu	0...+35	0.7...10	max. 70	
✓	**M40**	Cu	-30...+40	0.7...10	max. 45	
✓	**M95**	Cu	+5...+95	2...12	max. 105	
❍	**M150**	Cu	+20...+150	2.5...16	max. 165	
❍	**M230S**	1.4435/316L	+20...+230	3...32	max. 250	
❍	**M350S**	1.4435/316L	+70...+350	4...40	max. 380	

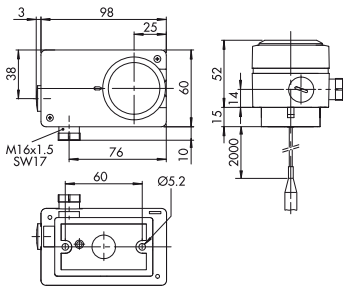
internal set-point adjustment without protection tube

MS...
MINISTAT

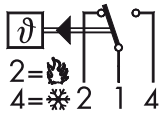
Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2

ℹ Protection tubes see end of this chapter

Data sheet H72172
Instruction H73624



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Sensor material	Range T [°C]	Switching diff. adjustable [°C]	Media temperature [°C]	NOTES
✓	**MS35**	Cu	0...+35	0.7...10	max. 70	
✓	**MS40**	Cu	-30...+40	0.7...10	max. 45	
✓	**MS95**	Cu	+5...+95	2...12	max. 105	
✓	**MS150**	Cu	+20...+150	2.5...16	max. 165	
❍	**MS230S**	1.4435/316L	+20...+230	3...32	max. 250	
❍	**MS350S**	1.4435/316L	+70...+350	4...40	max. 380	

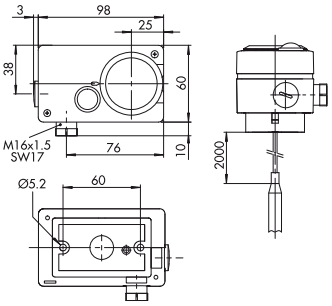
limiter for increasing temperatures
internal set-point adjustment & external reset, without protection tube

MS_R...
MINI-LIMISTAT WITH REMOTE SENSOR

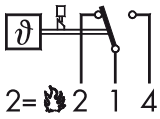
Data sheet H72173
Instruction H73624

Set-point adjustment	internal, external reset
Sensor technology	capillary tube, remote sensor
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2
Calibrated for increasing temp.	T↗

ℹ Protection tubes see end of this chapter



AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Sensor material	Range T [°C]	Media temperature [°C]
✓	**MS95R**	Cu	+5...+95	max. 105
✓	**MS150R**	Cu	+20...+150	max. 165
✓	**MS230SR**	1.4435/316L	+20...+230	max. 250
✓	**MS350SR**	1.4435/316L	+70...+350	max. 380

NOTES

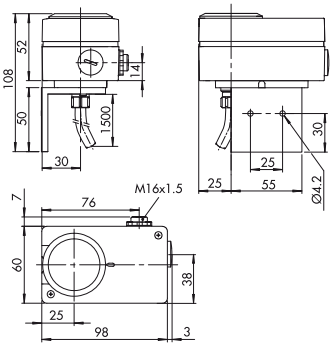
for galvanic baths or other aggressive media
internal set-point adjustment

GS...
GALVANOSTAT FOR GALVANIC BATHS

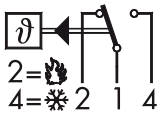
Data sheet H72179
Instruction H73624

Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Sensor material	FEP
Protection	IP54
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	1.5

ℹ Version with external adjustment on request



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Range T [°C]	Switching diff. fixed [°C]	Media temperature [°C]
✓	**GS95**	+5...+95	2.5	max. 105
○	**GS150**	+20...+150	3	max. 165

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

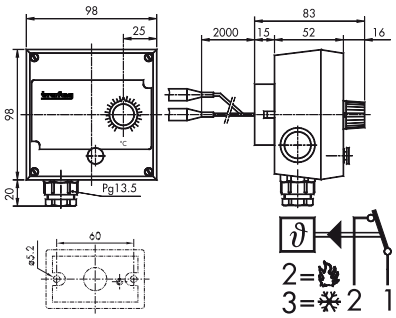
2 in 1:
thermostat & temperature limiter in one housing, internal set-point adjustment

D_R...
HVAC DUO-LIMISTAT, 2 REMOTE SENSOR

Data sheet H72142
Instruction H73170

Set-point adjustment	external
Sensor technology	capillary tube, remote sensor
Sensor material	Cu
Protection	IP54
Output	micro switch (2x)
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2
Calibrated for increasing temp.	T↗

Version with external adjustment on request
Protection tubes see end of this chapter



	Type	Range T [°C]	Switching diff. adjustable [°C]	Range of limiter [°C]	Media temperature [°C]
○	**D95R**	+5...+95	2...12	20...110	max. 105
○	**D150R**	+20...+150	2.5...16	35...175	max. 165
○	**D300R**	+40...+300	4...40	70...350	max. 380

NOTES

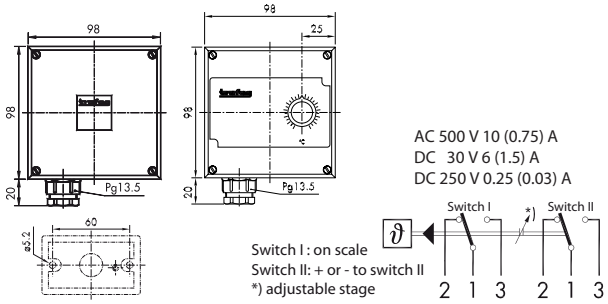
2 stage controller
internal temperature set-point adjustment

M2S...
HVAC ALTEROSTAT, 2 STAGE CONTROLLER

Data sheet H72139
Instruction H70311

Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Sensor material	Cu, 1.4435/316L
Protection	IP54
Output	micro switch (2x)
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2

Version with external adjustment on request



	Type	Range T [°C]	Switching diff. fixed [°C]	Smallest stage diff. [°C]	Biggest stage diff. [°C]	Media tempera-ture [°C]
○	**M2S35**	0...+35	1.8	0.8	15	max. 50
○	**M2S95**	+5...+95	2.5	1.2	35	max. 105
○	**M2S40**	-30...+40	1.8	0.8	25	max. 45
○	**M2S350S**	+70...+350	5	2.5	80	max. 380
○	**M2S230S**	+20...+230	4.5	2	70	max. 250
○	**M2S150**	+20...+150	3	1.5	40	max. 165

NOTES

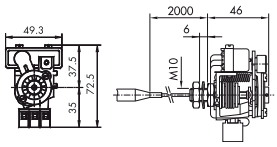
adjustable switching differential

L...
OEM LABORSTAT, SKELETON TYPE

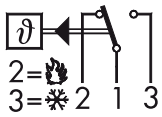
Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Protection	IP00
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2

ℹ Protection tubes see end of this chapter
ℹ Limiter version for increasing temperature see data sheet H72122

Data sheet H72122
Instruction H70211



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Sensor material	Range T [°C]	Switching diff. adjustable [°C]	Media temperature [°C]
○	**L35**	Cu	0...+35	0.7...10	max. 60
○	**L40**	Cu	-30...+40	0.7...10	max. 45
○	**L95**	Cu	+5...+95	2...12	max. 105
○	**L150**	Cu	+20...+150	2.5...16	max. 165
○	**L230S**	1.4435/316L	+20...+230	3...32	max. 250
○	**L350S**	1.4435/316L	+70...+350	4...40	max. 380

NOTES

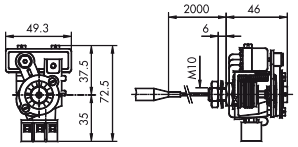
limiter for increasing temperature with mechanical reset

L_R...
LABOR-LIMISTAT, SKELETON TYPE OEM

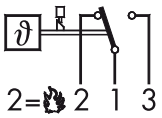
Set-point adjustment	internal, internal reset
Sensor technology	capillary tube, remote sensor
Protection	IP00
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2
Calibrated for increasing temp.	T↗

ℹ Protection tubes see end of this chapter

Data sheet H72124
Instruction H70211



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Sensor material	Range T [°C]	Media temperature [°C]
○	**L95R**	Cu	+5...+95	max. 105
○	**L150R**	Cu	+20...+150	max. 165
○	**L230SR**	1.4435/316L	+20...+230	max. 250
○	**L350SR**	1.4435/316L	+70...+350	max. 380

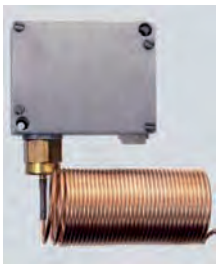
NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

for monitoring of heat exchangers (ice prevention) with internal set-point adjustment

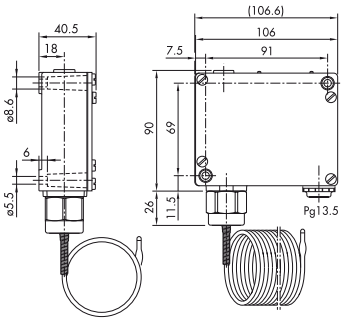
F...
FROSTSTAT



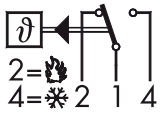
Data sheet H72123
Instruction H70821

Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Sensor material	Cu
Protection	IP42
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	+2...+70
Media temperature [°C]	max. 140
EN 60730-2-9	Type 2.B.H.

ℹ Capillary holder see K80140 (chapter Accessories)



AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Capillary tube length	Range T [°C]	Switching diff. fixed [°C]	NOTES
✓	**F15**	6 [m]	-5...+15	2±1	
✓	**F153**	3 [m]	-5...+15	2±1	

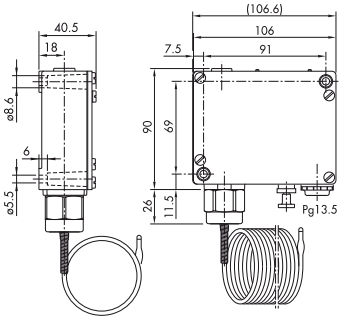
for monitoring of heat exchangers (ice prevention) with internal set-point adjustment & external reset knob

F_R...
FROSTSTAT

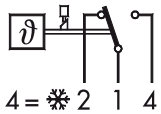
Data sheet H72123
Instruction H70821

Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Sensor material	Cu
Protection	IP42
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	+2...+70
Media temperature [°C]	max. 140
EN 60730-2-9	Type 2.B.H.
Calibrated for increasing temp.	T↗

ℹ Capillary holder see K80140 (chapter Accessories)
ℹ Calibrated for decreasing temperature T↘



AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Capillary tube length	Range T [°C]	Switching diff. fixed [°C]	NOTES
✓	**F15R**	6 [m]	-5...+15	2±1	
○	**F153R**	3 [m]	-5...+15	2±1	

Pressure adapters & other accessories see pages 58-64

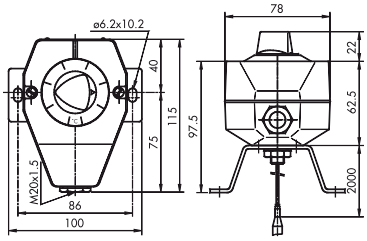
controller with rugged housing external set-point adjustment

I...
INDUSTAT

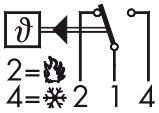
Set-point adjustment	external
Sensor technology	capillary tube, remote sensor
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2

ℹ Protection tubes see end of this chapter

Data sheet H72110
Instruction H73111



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Sensor material	Range T [°C]	Switching diff. adjustable [°C]	Media temperature [°C]
○	**I35**	Cu	0...+35	0.7...10	max. 60
○	**I40**	Cu	-30...+40	0.7...10	max. 45
○	**I95**	Cu	+5...+95	2...12	max. 105
○	**I150**	Cu	+20...+150	2.5...16	max. 165
○	**I230S**	1.4435/316L	+20...+230	3...32	max. 250
○	**I350S**	1.4435/316L	+70...+350	4...40	max. 380

NOTES

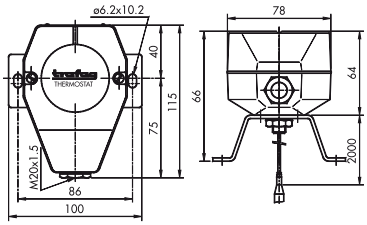
controller with rugged housing internal set-point adjustment

IS...
INDUSTAT

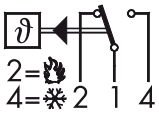
Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2

ℹ Protection tubes see end of this chapter

Data sheet H72110
Instruction H73111



AC 500 V 10 (0.75) A
DC 30 V 6 (1.5) A
DC 250 V 0.25 (0.03) A



	Type	Sensor material	Range T [°C]	Switching diff. adjustable [°C]	Media temperature [°C]
○	**IS35**	Cu	+0...+35	0.7...10	max. 60
✓	**IS40**	Cu	-30...+40	0.7...10	max. 45
✓	**IS95**	Cu	+5...+95	2...12	max. 105
○	**IS150**	Cu	+20...+150	2.5...16	max. 165
✓	**IS230S**	1.4435/316L	+20...+230	3...32	max. 250
✓	**IS350S**	1.4435/316L	+70...+350	4...40	max. 380

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

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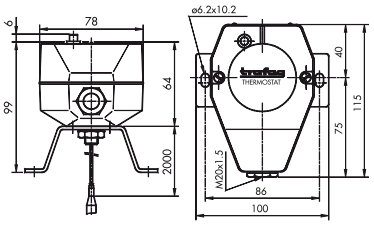
rugged housing
internal set-point adjustment & external reset knob

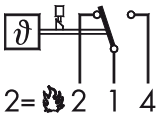
IS_R...
INDUSTRIAL LIMITER WITH REMOTE SENSOR

Set-point adjustment	internal, external reset
Sensor technology	capillary tube, remote sensor
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2
Calibrated for increasing temp.	T↗

ℹ Protection tubes see end of this chapter



AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



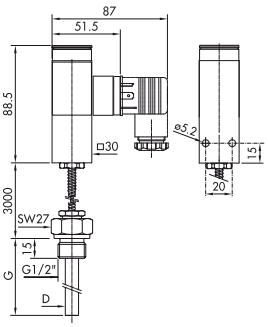
Data sheet H72138
Instruction H73111

	Type	Sensor material	Range T [°C]	Media temperature [°C]	NOTES
○	**IS95R**	Cu	+5...+95	max. 105	
○	**IS150R**	Cu	+20...+150	max. 165	
✓	**IS230SR**	1.4435/316L	+20...+230	max. 250	
○	**IS350SR**	1.4435/316L	+70...+350	max. 380	

compact thermostat, mounting compatibility with Picostat family NP and PST
external set-point adjustment, marine approved

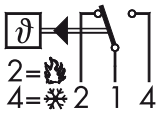
ISP...
PICOTHERM

Set-point adjustment	external
Sensor technology	capillary tube, remote sensor
Protection	IP65
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-30...+70
Protection tube material	brass nickel plated
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	3



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 3 (1) A
DC 24 V 2 (4) A
DC 250 V 0.1 (0.05) A



Data sheet H72113
Instruction H73113

	Type	Range T [°C]	Length G [mm]	Diameter D [mm]	Switching diff. fixed [°C]	Media tempera-ture [°C]	NOTES
○	**ISP9515**	+5...+95	150	10	4	max. 100	
○	**ISP9565**	+5...+95	65	15	4	max. 100	
○	**ISP11015**	+20...+110	150	10	4	max. 115	
○	**ISP11065**	+20...+110	65	15	4	max. 115	
○	**ISP15015**	+20...+150	150	10	5	max. 165	
✓	**ISP15065**	+20...+150	65	15	5	max. 165	

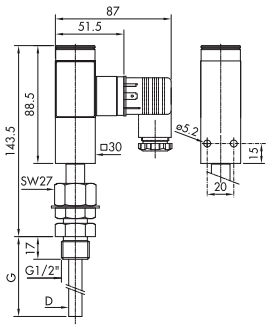
Catalogue 2012

compact thermostat, mounting compatibility with Picostat family NP and PST external set-point adjustment, marine approved

ISPT...
PICOTHERM

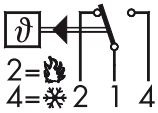
Set-point adjustment	external
Sensor technology	capillary tube, direct mounted sensor
Protection	IP65
Output	micro switch
Electrical connection	EN175301-803-A
Operating temperature [°C]	-30...+70
Protection tube material	brass nickel plated
EN 60730-2-9	Type 2.B.H.

Data sheet H72113
Instruction H73113



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, NKK, RMRS

AC 250 V 3 (1) A
DC 24 V 2 (4) A
DC 250 V 0.1 (0.05) A



	Type	Range T [°C]	Length G [mm]	Diameter D [mm]	Switching diff. fixed [°C]	Media temperature [°C]
○	**ISPT9515**	+5...+95	150	10	4	max. 100
○	**ISPT9565**	+5...+95	65	15	4	max. 100
○	**ISPT11015**	+20...+110	150	10	4	max. 115
○	**ISPT11065**	+20...+110	65	15	4	max. 115
○	**ISPT15015**	+20...+150	150	10	5	max. 165
○	**ISPT15065**	+20...+150	65	15	5	max. 165

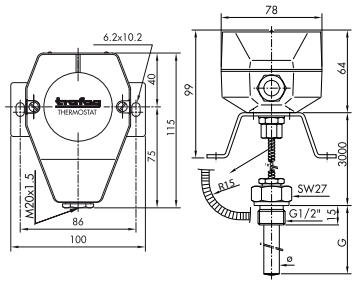
NOTES

rugged, marine approved thermostat internal set-point adjustment

ISN...
NAVISTAT

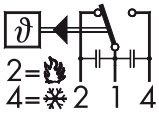
Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
Protection tube material	brass nickel plated
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	3

Data sheet H72111
Instruction H73111



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, RMRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



	Type	Range T [°C]	Length G [mm]	Diameter D [mm]	Switching diff. fixed [°C]	Media temperature [°C]
○	**ISN11011**	+20...+110	110	12	4.5	max. 115
○	**ISN11015**	+20...+110	150	10	4.5	max. 115
✓	**ISN11065**	+20...+110	65	15	4.5	max. 115
✓	**ISN15011**	+20...+150	110	12	5	max. 165
○	**ISN15015**	+20...+150	150	10	5	max. 165
✓	**ISN15065**	+20...+150	65	15	5	max. 165

NOTES

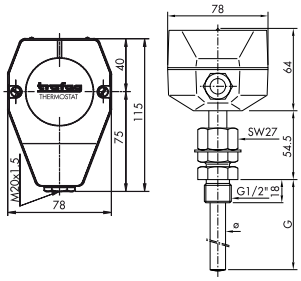
Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

rugged, marine approved thermostat
internal set-point adjustment

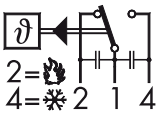
ISNT...
NAVISTAT

Set-point adjustment	internal
Sensor technology	capillary tube, direct mounted sensor
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+70
Protection tube material	brass nickel plated
EN 60730-2-9	Type 2.B.H.



GL, ABS, BV, CCS, DNV, RINA, LRS, KRS, RMRS

AC 500 V 10 (0.75) A
DC 30 V 15 (1.5) A
DC 250 V 0.3 (0.2) A



Data sheet H72111
Instruction H73111

	Type	Range T [°C]	Length G [mm]	Diameter D [mm]	Switching diff. fixed [°C]	Media tempera-ture [°C]
✓	**ISNT11011**	+20...+110	110	12	4.5	max. 115
✓	**ISNT11015**	+20...+110	150	10	4.5	max. 115
✓	**ISNT11065**	+20...+110	65	15	4.5	max. 115
✓	**ISNT15011**	+20...+150	110	12	5	max. 165
✓	**ISNT15015**	+20...+150	150	10	5	max. 165
✓	**ISNT15065**	+20...+150	65	15	5	max. 165

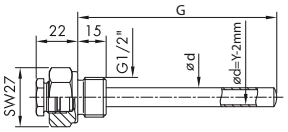
NOTES

brass nickel plated
for flying capillary tubes

8316...19
PROTECTION TUBES FOR REMOTE SENSORS

Protection tube material brass nickel plated

Length G [mm]	Range T [°C]	Sensor Dia-meter [mm]
200	-30..+40, 0...+35, +10...+80	**7**
150	+5...+95,+20...+150, +20...+110	
110	+20...+230, +70...+350	
180	-30...+40, 0...+35	**5.5/11**
150	+5...+95, +20...+150	
110	+20...+230, +70...+350	**9**
65	+5...+95, +20...+150, +20...+110	**12**



Data sheet H72163

	Type	Text	Diameter d [mm]	Length G [mm]
✓	**83160110K**	for types M, MS, M2S, L, I, IS, ISP	10	110
✓	**83160150K**	for types M, MS, M2S, L, I, IS, ISP, ISN	10	150
✓	**83160200K**	for types I, IS	10	200
○	**83160300K**	for types M, MS, M2S, L, I, IS	10	300
✓	**83160400K**	for types M, MS, M2S, L, I, IS	10	400
○	**83170110**	for types ISP, ISN	12	110
○	**83180150K**	for types D...R	14	150
○	**83190065**	for types ISP, ISN	15	65

NOTES

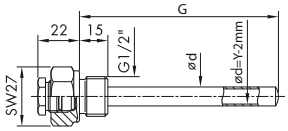
Catalogue 2012

stainless steel
for flying capillary tubes

8411/12/14
PROTECTION TUBES FOR REMOTE SENSORS

Protection tube material 1.4435/316L

Length G [mm]	Range T [°C]	Sensor Diameter [mm]
200	-30..+40, 0...+35, +10...+80	**7**
150	+5...+95,+20...+150, +20...+110	
110	+20...+230, +70...+350	
180	-30...+40, 0...+35	**5.5/11**
150	+5...+95, +20...+150	
110	+20...+230, +70...+350	**9**
65	+5...+95, +20...+150, +20...+110	**12**



Data sheet H72163

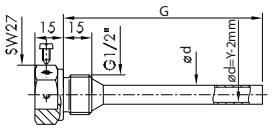
	Type	Text	Diameter d [mm]	Length G [mm]
✓	**84110110K**	for types M, MS, M2S, L, I, IS, ISP	10	110
✓	**84110150K**	for types M, MS, M2S, L, I, IS, ISP, ISN	10	150
○	**84110200K**	for types I, IS	10	200
○	**84110400K**	for types M, MS, M2S, L, I, IS	10	400
○	**84120110**	for types ISP, ISN	12	110
○	**84140065**	for types ISP, ISN	15	65

NOTES

stainless steel / brass nickel plated
for direct mounting

1211/16
PROTECTION TUBES FOR MST

Length G [mm]	Range T [°C]	Sensor Diameter [mm]
200	-30..+40, 0...+35, +10...+80	**7**
150	+5...+95,+20...+150, +20...+110	
110	+20...+230, +70...+350	
180	-30...+40, 0...+35	**5.5/11**
150	+5...+95, +20...+150	
110	+20...+230, +70...+350	**9**
65	+5...+95, +20...+150, +20...+110	**12**



Data sheet H72163

	Type	Text	Sensor material	Diameter d [mm]	Length G [mm]
○	**12110150K**	for type MST...15	1.4435/316L	10	150
○	**12110400K**	for type MST...40	1.4435/316L	10	400
○	**12160150K**	for type MST...15	brass nickel plated	10	150
○	**12160400K**	for type MST...40	brass nickel plated	10	400

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

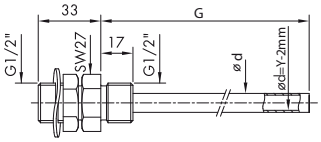
Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

stainless steel
for direct mounting

1411/12/14
PROTECTION TUBES FOR ISPT/ISNT

Data sheet H72163

Length G [mm]	Range T [°C]	Sensor Diameter [mm]
200	-30..+40, 0...+35, +10...+80	**7**
150	+5...+95,+20...+150, +20...+110	
110	+20...+230, +70...+350	
180	-30...+40, 0...+35	**5.5/11**
150	+5...+95, +20...+150	
110	+20...+230, +70...+350	**9**
65	+5...+95, +20...+150, +20...+110	**12**



	Type	Text	Sensor material	Diameter d [mm]	Length G [mm]
❍	**14110150K**	for type ISNT...150	1.4435/316L	10	150
❍	**14120110K**	for type ISNT...110	1.4435/316L	12	110
❍	**14140065K**	for ISPT/ISNT...65	1.4435/316L	15	65

NOTES

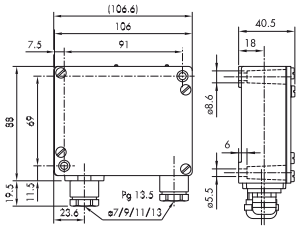
Temperature transmitter | Temperaturtransmitter | Transmetteur de température

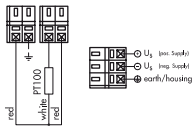
4...20 mA
for shipbuilding

T...
MARINE TRANSMITTER FOR PT100 SENSORS

Sensor technology	PT100
Protection	IP65
Output	4...20 mA
Electrical connection	terminal screw
Operating temperature [°C]	-40...+85

Data sheet H72102
Instruction H73102





	Type	Range T [°C]	Supply [VDC]
❍	**T50**	-50...+50	12...30
❍	**T100**	0...+100	12...30
❍	**T200**	0...+200	12...30
❍	**T400**	0...+400	12...30

NOTES

single stage thermostat with display
1 relay (SPDT)

LTR
ELECTRONIC DISPLAY-UNIT WITH RELAY

Sensor type	PT1000
Protection	IP54
Output	1 relay, 240 V/16 (3) A
Electrical connection	terminal screw
Operating temperature [°C]	-10...+50

Dimensions: 76x35x77 mm

Cutout of panel:
Schalttafelausschnitt: 71x29 mm
Découpure du tableau:

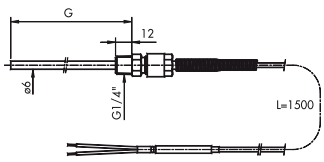
	Type	Range [°C]	Relais output	U-supply [VAC]
❍	**LTR5TSRE**	-50...+150	1	240

NOTES

2-wire temperature sensor incl. mounting stopper

PT100
TEMPERATURE SENSOR

Sensor type	PT100 (IEC 751)
Protection tube material	1.4435/316L
Protection	IP65
Immersion	adjustable
Electrical connection	2 wires



	Type	Range [°C]	Protection tube length [G]	Class (IEC 751)
❍	**PT100L15**	-50...+250	150	B

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
❍ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

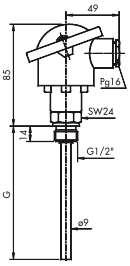
Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

Temperature transmitter Temperaturtransmitter Transmetteur de température

3-wire temperature sensor in DIN B head

PT100/1000
TEMPERATURE SENSORS

Sensor type	PT100 (IEC 751) or 1000
Protection tube material	1.4435/316L
Protection	IP65
Immersion	adjustable
Electrical connection	3 wires



	Type	Range [°C]	Protection tube length [G]	Class (IEC 751)
✓	**PT100L12**	-50...+250	120	B
✓	**PT1000L12**	-50...+250	120	B
○	**PT100L40**	-50...+250	400	B

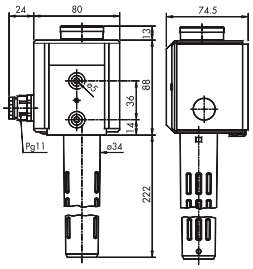
NOTES

Humidity Feuchte Humidité

with adjustable setpoint, 1 relay

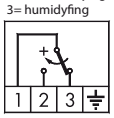
HMH
HYGROSTAT

Protection	IP54
Operating temperature	-20...+60 °C
Output	1 relay
Electrical connection	terminal screw



AC 250 V 10 A (25 °C)
8 A (60 °C)

2= dehumidifying
3= humidyfing



Data sheet H72402

	Type	Humidity [%rH]	Hysteresis [Δ%rH]	max. sensor temperature [°C]
✓	**HMH**	10...100	approx. 1.5	+70

NOTES

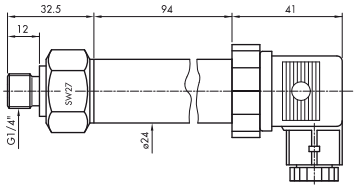
4...20 mA
pressure ranges from 0.2...250 bar, marine approved

EXNA...A
EX PRESSURE TRANSMITTER

Kind of measurement	relative pressure
Sensor technology	piezo-resistive
Sensor material	1.4435 /316L
Protection	IP65
Pressure connection	G1/4“ male
Output	4...20 mA
Electrical connection	EN175301-803
Operating temperature [°C]	-25...+85
Media temperature [°C]	-25...+100

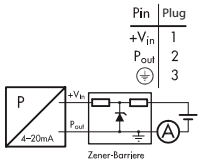
ℹ Please indicate employment medium
ℹ Submersible EX-Pressure Transmitter see data sheet H72231

Data sheet H72227



GL, KRS

SEE 99 ATEX 2642



	Type	Range P [bar]	Max. overpressure [bar]	Supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
❍	**EXNA0.2A**	0...0.2	3	10...30	±0.5
❍	**EXNA0.4A**	0...0.4	3	10...30	±0.5
❍	**EXNA0.6A**	0...0.6	3	10...30	±0.5
❍	**EXNA1.0A**	0...1.0	3	10...30	±0.5
❍	**EXNA2.5A**	0...2.5	7.5	10...30	±0.5
❍	**EXNA4.0A**	0...4.0	12	10...30	±0.5
❍	**EXNA6.0A**	0...6.0	18	10...30	±0.5
❍	**EXNA10.0A**	0...10.0	30	10...30	±0.5
❍	**EXNA25.0A**	0...25.0	75	10...30	±0.5
❍	**EXNA40.0A**	0...40.0	120	10...30	±0.5
❍	**EXNA100.0A**	0...100.0	300	10...30	±0.5
❍	**EXNA250.0A**	0...250.0	750	10...30	±0.5

NOTES

AVAILABLE SOON

NEW

EX PRESSURE TRANSMITTER

The new intrinsically safe Trafag Ex Pressure transmitter will be available in Q2/2012. It is suited for a wide range of applications with explosive gases, dust and in the mining industry. Due to the high-quality thin-film-on-steel membrane it offers an excellent long-term stability and accuracy over a wide temperature range.

Der neue, eigensichere Trafag-Drucktransmitter ist ab dem 2. Quartal 2012 erhältlich. Er ist geeignet für eine grosse Bandbreite von Anwendungen mit explosiven Gasen, Staub und für den Bergbau. Die hochwertige Dünnfilm-auf-Stahl-Membrane garantiert eine ausgezeichnete Langzeitstabilität und hohe Genauigkeit über einen grossen Temperaturbereich.

Le nouveau transmetteur de pression à sécurité intrinsèque sera disponible à partir du deuxième trimestre 2012. Il est adapté pour diverses applications avec des gaz explosifs, de la poussière et dans l'exploitation des mines. La membrane couche mince sur acier de toute première qualité garantit une stabilité à long terme excellente et une haute précision sur de larges plages de température.

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
❍ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

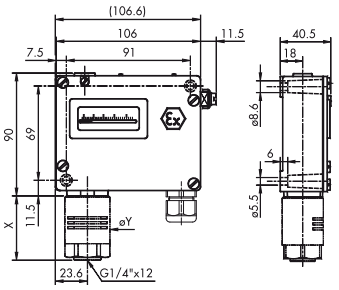
for low pressure ranges with high accuracy
high overpressure safety

EXP...
EX PRESSOSTAT, EXP

Data sheet H72263
Instruction H73171

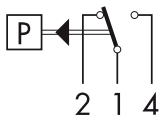
Kind of measurement	relative pressure
Sensor technology	bellows
Sensor material	1.4435 /316L
Protection	IP65
Pressure connection	G1/4“ female
Pressure peak damping element	accessories ℹ page 60
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-50...+65
Media temperature [°C]	max. 150
EN 60730-2-6	Type 2.B.H.

ℹ Mounting plate see MB31 (chapter Accessories)



PTB 10
ATEX 1026

AC 250 V 5 (5) A
DC 30 V 5 (3) A
DC 250 V 0.25 (0.03) A



	Type	Range P [bar]	Max. over-pressure [bar]	Switching diff. fixed [bar]	Diameter Y [mm]	Length X [mm]
✓	**EXP1.5**	-0.9...1.5	10	0.2	45	56.5
○	**EXP2.5**	0.2...2.5	10	0.2	45	56.5
✓	**EXP6**	0...6	12	0.4	33	47
✓	**EXP16**	1...16	24	0.9	27	42.5

NOTES

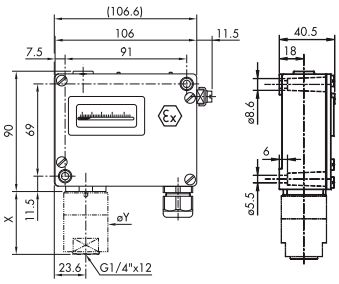
for high pressure, insensitive to pressure peaks and overpressure
with fixed switching differential, stainless steel sensor

EXPK...
EX PRESSOSTAT, EXPK

Data sheet H72270
Instruction H73171

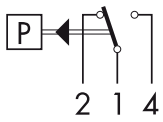
Sensor technology	piston
Sensor material	1.4435 /316L
Protection	IP65
Pressure connection	G1/4“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-50...+65
Media temperature [°C]	max. 100
EN 60730-2-6	Type 2.B.H.

ℹ Mounting plate see MB31 (chapter Accessories)



PTB 10
ATEX 1026

AC 250 V 5 (5) A
DC 30 V 5 (3) A
DC 250 V 0.25 (0.03) A



	Type	Range P [bar]	Max. over-pressure [bar]	Switching diff. fixed [bar]	Diameter Y [mm]	Length X [mm]
✓	**EXPK10**	1...10	100	0.4-0.8	33	47
✓	**EXPK40**	4...40	200	2-5	27	42.5
✓	**EXPK100**	10...100	200	4-11	27	42.5
✓	**EXPK250**	25...250	400	8-26	27	42.5

NOTES

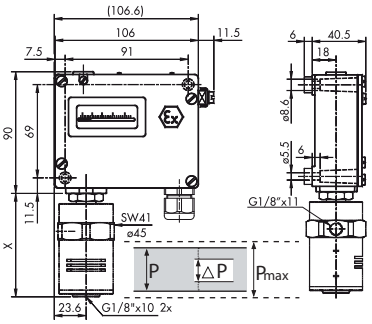
bellows sensor with fixed switching differential

EXPD...
EX DIFFERENTIAL PRESSOSTAT

Sensor technology	bellows
Sensor material	brass nickel plated
Protection	IP65
Pressure connection	G1/8“ female
Output	micro switch
Electrical connection	terminal screw
Operating temperature [°C]	-30...+65
Media temperature [°C]	max. 150
EN 60730-2-6	Type 2.B.H.

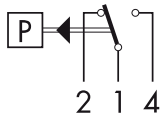
ℹ Mounting plate see MB31 (chapter Accessories)

Data sheet H72256
Instruction H73171



PTB 10
ATEX 1026

AC 250 V 5 (5) A
DC 30 V 5 (3) A
DC 250 V 0.25 (0.03) A



	Type	Range P [bar]	ΔP -[bar]	Max. over-pressure [bar]	Switching diff. fixed [bar]	Length X [mm]
○	**EXPD3.4**	-1...+6	-0.6...+3.4	12	0.4	77
○	**EXPD6**	-1...+8	0...6	12	0.4	77
○	**EXPD16**	-1...+18	1...16	24	0.7	87

NOTES

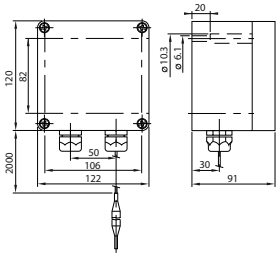
High current ratings 16 A with mechanical reset

KTSB
SAFETY TEMPERATURE LIMITER

Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Sensor material	1.4435/316L
Protection	IP66
Output	micro switch
Electrical connection	terminal screw
Capillary tube length [m]	2

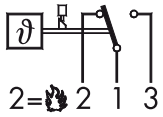
ℹ Areas with gas explosion hazards EX II 2 G Ex de IIC T6
ℹ Areas with dust explosion hazards EX II 2 D Ex tD A21 IP 66 T80°C

Data sheet & Instruction H72181



PTB 09
ATEX 1027

AC 400 V 16 A



	Type	Sensor material	Range T [°C]	Operating temperature [°C]	Media temperature [°C]
○	**KTSB150S**	1.4435/316L	+20...+150	-50...+60	max. 165
○	**KTSB230S**	1.4435/316L	+20...+230	-50...+60	max. 250
○	**KTSB350S**	1.4435/316L	+70...+350	-50...+60	max. 380

NOTES

„SIMPLE APPARATUS“
(Thermostats and Pressostats for Ex-i Applications)
go to chapter „OEM / customized“

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

rugged housing
internal set-point adjustment

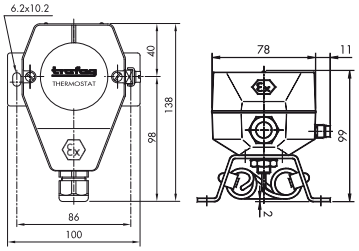
EXAS...
EX-AMBISTAT FOR ROOM CONTROLLING

Set-point adjustment	internal
Sensor technology	sensor coil
Sensor material	brass nickel plated
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.

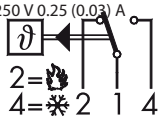
- Areas with gas explosion hazards EX II 2 G Ex de IIC T6
- Areas with dust explosion hazards EX II 2 D Ex tD A21 IP 66 T 80 °C

Data sheet H72128
Instruction H73172

PTB 09
ATEX 1027



AC 250 V 5 (5) A
DC 30 V 5 (3) A
DC 250 V 0.25 (0.03) A



	Type	Range T [°C]	Switching diff. fixed [°C]	Operating temperature [°C]
✓	**EXAS33**	-30...+30	2.5	-30...+40
✓	**EXAS35**	+5...+35	2.5	-30...+50
✓	**EXAS60**	0...+60	2.5	-30...+65

NOTES

rugged housing
internal set-point adjustment

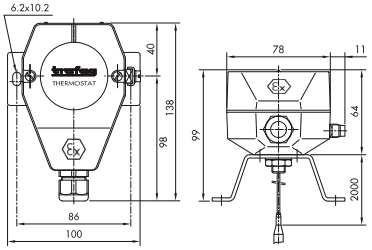
EXS...
EX-INDUSTAT, EXS

Set-point adjustment	internal
Sensor technology	capillary tube, remote sensor
Protection	IP65
Output	micro switch
Electrical connection	terminal screw
EN 60730-2-9	Type 2.B.H.
Capillary tube length [m]	2

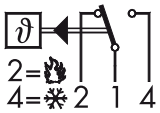
- Protection tubes see end of this chapter
- Areas with gas explosion hazards EX II 2 G Ex de IIC T6
- Areas with dust explosion hazards EX II 2 D Ex tD A21 IP 66 T 80 °C

Data sheet H72108
Instruction H73172

PTB 09
ATEX 1027



AC 250 V 5 (5) A
DC 30 V 5 (3) A
DC 250 V 0.25 (0.03) A



	Type	Sensor material	Range T [°C]	Switching diff. fixed [°C]	Operating tempera-ture [°C]	Media tempera-ture [°C]
○	**EXS35**	Cu Ni-plated	0...+35	2.5	-30...+50	max. 50
○	**EXS40**	Cu Ni-plated	-30...+40	2.5	-30...+45	max. 45
○	**EXS95**	Cu Ni-plated	+5...+95	3.5	-30...+65	max. 105
○	**EXS150**	Cu Ni-plated	+20...+150	5.5	-30...+65	max. 165
✓	**EXS230S**	1.4435/316L	+20...+230	8	-30...+65	max. 250
○	**EXS350S**	1.4435/316L	+70...+350	10	-30...+65	max. 380

NOTES

Gas Density Monitors | Gasdichtewächter | Moniteur de densité de gaz

SF_6 Gas Density Monitoring

Swiss-based Trafag also stands for precise, reliable and maintenance-free instruments developed for the monitoring of SF_6 and other gases in the field of high- and medium-voltage switchgear. Trafag guarantees outstanding accuracy and operation in the widest temperature range on the market.

SF_6 gas density monitoring for maximum safety
Sulphur hexafluoride (SF_6) is used in gas insulated switchgear because of its outstanding insulation and spark extinguishing (arc-quenching) properties. It thus makes it possible to set-up complex and safe power distribution systems even in large cities. The insulation strength depends basically on the gas density.
The safety of the facility is guaranteed when the correct level of gas density is maintained within the enclosed systems. The tightness of the installation has to be checked and controlled constantly as a leakage would result in a decrease in the insulation properties. Because SF_6 is a strong greenhouse gas, strict regulations regarding the SF_6 consumption have to be met by the switchgear operators in an increasing number of countries. These regulations stipulate a permanent monitoring of gas leakage which is done with gas density monitors or gas sensors.
Gas density is often indirectly determined by the gas pressure using manometers or pressure sensors. As the pressure in the hermetically closed volume varies enormously with temperature, such devices need temperature compensation, which are a source of errors. Trafag gas monitoring devices measure the gas density directly with the unique gas density reference principle or the patented quartz tuning fork technology. They thus offer the most reliable solution on the market by directly measuring the SF_6 gas density.

For more information regarding Trafag's SF_6 gas density monitoring solutions and their measuring principles download the brochure:

Trafag SF_6 Gas Density Monitoring
www.trafag.com/H70643

SF_6 Gasdichteüberwachung

Die schweizerische Trafag steht auch für präzise, zuverlässige und wartungsfreie Geräte zum Monitoring von SF_6 und anderen Gasen, welche im Bereich der Hoch- und Mittelspannungstechnik Verwendung finden. Trafag's Geräte funktionieren über den weitesten auf dem Markt erhältlichen Temperaturbereich.

SF_6 Gasdichteüberwachung für maximale Sicherheit
Schwefelhexafluorid (SF_6) wird wegen seiner aussergewöhnlichen Isolationseigenschaften und Funken- bzw.Lichtbogenlöschung in gasisolierten Schaltanlagen verwendet. Es ermöglicht dehalb den Aufbau von komplexen und sicheren Energieversogungssystemen in grossen Städten.
Die Isolationsstärke hängt grundsätzlich von der korrekten Gasdichte ab. Die Anlagensicherheit ist dann garantiert, wenn die korrekte Gasdichte in diesem geschlossenen System gewährleistet ist. Die Dichtigkeit der Anlage muss kontinuierlich überprüft werden, weil eine Gasleckage die Isolationseigenschaft reduzieren würde. Weil SF_6 ein starkes Treibhausgas ist, müssen Schaltanlagenbetreiber strenge Regulierungen betreffend des SF_6-Verbrauchs befolgen. Diese Vorschriften fordern eine dauernde Überwachung des Gasverbrauchs, welches durch Gasdichtewächter oder Gasdichtesensoren bewerkstelligt wird.
Die Gasdichte wird häufig indirekt mittels Manometern durch den Gasdruck bestimmt. Weil der Druck in geschlossenen Systemen jedoch von der Temperatur abhängt, benötigen diese Systeme ein komplexes, häufig fehlerbehaftetes Temperaturkompensationssystem.
Trafag's Gasdichteüberwachungsgeräte hingegen messen die Gasdichte direkt mittels des einzigartigen Referenzkammernprinzips oder der patentierten Schwingquartztechnologie. Auf diese Weise ermöglicht Trafag die zuverlässigste Gasdichteüberwachung auf dem Markt.

Für zusätzliche Informationen zu Trafag's Gasdichteüberwachungs-Lösungen und -Messprinzipien steht die Broschüre zum Downloaden zur Verfügung:

Trafag SF_6 Gas Density Monitoring
www.trafag.com/H70643

Surveillance de densité de gaz SF_6

La société suisse Trafag est synonyme d'appareils précis, fiables et sans entretien destinés à surveiller le SF_6 et les autres gaz utilisés dans la technologie des hautes et moyennes fréquences. Les appareils Trafag fonctionnent au-dessus de la plus vaste plage de température disponible sur le marché.

Surveillance de la densité du gaz SF_6 pour une sécurité maximale
L'hexafluorure de soude (SF_6) est utilisé dans des installations de commutation isolées au gaz pour leurs propriétés isolantes exceptionnelles et l'extinction des étincelles ou des arcs électriques. Ainsi, il est possible de mettre en place des systèmes d'alimentation en énergie complexes et sûrs dans les grandes villes.
L'épaisseur d'isolation dépend d'une manière générale de la densité correcte du gaz. La sécurité des installations est garantie quand la densité correcte du gaz est garantie dans ce système fermé. L'étanchéité de l'installation doit être continuellement vérifiée parce qu'une fuite de gaz réduirait les propriétés isolantes. Le SF_6 est un gaz à fort effet de serre, ainsi, les exploitants des installations de commutation doivent obéir aux règlements sévères concernant la consommation en SF_6. Ces dispositions exigent une surveillance permanente de la consommation de gaz qui s'obtient grâce à des moniteurs ou des capteurs de densité de gaz.
Il est fréquent que la densité du gaz soit déterminée indirectement par la pression du gaz au moyen de manomètres. La pression dans les systèmes fermés dépend cependant de la température et les systèmes nécessitent ainsi un dispositif complexe de compensation de la température souvent affecté par des défauts.
Par contre, les appareils de surveillance de la densité du gaz Trafag mesurent directement la densité du gaz au moyen d'un principe unique en son genre: le principe des chambres de référence ou la technologie des cristaux piézoélectriques. Ainsi, Trafag permet la surveillance de la densité du gaz la plus fiable du marché.

Pour des informations fiables sur les solutions et les principes de mesure de surveillance de la densité du gaz Trafag, la brochure est à votre disposition, prête au téléchargement:

Trafag SF_6 Gas Density Monitoring
www.trafag.com/H70643

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

Gas Density Monitors for SF_6 and other Gases

Sulphur hexafluoride (SF_6) is used in gas insulated switchgear because of its outstanding insulation and spark extinguishing (arc-quenching) properties. The insulation properties depend basically on the gas density.

Because SF_6 is regarded as a greenhouse gas strict regulations regarding the SF_6 consumption have to be met by the switchgear operators in several countries. These regulations stipulate a permanent monitoring of gas leakage which is done with gas density monitors or gas sensors.

The Swiss based Trafag stands for precise, maintenance-free devices for gas density measurement of SF_6 and other gases in high and medium voltage switchgear. Trafag guarantees outstanding accuracy and operation in the widest temperature range on the market.

Gas Density Monitor 87X6 – Electromechanical monitoring

The mechanical, self-acting device is based on the superior reference gas principle. It therefore not only covers all standard applications but also allows the precise measurement over the complete temperature range down to minus 60°C, of different gas mixtures or the application in montane altitudes or arctic temperatures. It is equipped with high-performance micro switches and does not need any electrical energy supply. This precise, reliable and maintenance-free device is suited for demanding applications over years.

Data sheet: H72511
Instruction: H73511

Advantages:
- no temperature compensation required due to superior reference chamber principle
- identical gas in both, switchgear and reference chamber; customer specific filling
- high resistance against vibration and shock
- no bouncing of electrical contacts
- galvanically separated circuits
- no false alarms at low temperatures
- maintenance-free, no recalibration of switch-points
- monitoring of other gases (e.g. CF_4) possible

Gas Density Sensor 8774 – Electronic monitoring

The Trafag gas density sensor type 8774 was specifically designed for monitoring insulation gases. This unique patented sensor technology opens new paths for the energy distributing industry to realize comprehensive trend analysis and monitoring. It measures directly and continuously the gas density providing an analogue or digital output signal. The version with digital output signal also provides the signal of the gas temperature.

Data sheet: H72507
Instruction manual: H73507

Advantages:
- continuous digital or analogue output signal usable for SF_6 trend analysis
- wide density range 0-10 bar SF_6-pressure at 20°C
- additional output of sensor temperature (digital version only)
- extremely drift free signal
- outdoor application without additional protection
- electromagnetic compatibility (EMC) according to EN/IEC 61000-4
- density measurement of all gases possible
- ready for EPA emission reporting

Hybrid Gas Density Monitor 878X – Electromechanical and electronic monitoring

The Hybrid Gas Density Monitor combines the advantages of the proven mechanical monitor based on the superior reference chamber with the unique electronic gas density sensor. The combined technology has local switches / read-out and allows remote surveillance and trend analysis. The very compact all-in-one-device with a single pressure port operates reliable and maintenance-free under harsh conditions indoors and outdoors. It is accurate over a wide range of temperature and altitude.

Data sheet H72515
Instruction manual H73515

Advantages:
- no false alarms at low temperatures
- mechanical switches AND continuous output signal usable for tend analysis (analogue output signal)
- maintenance-free, no recalibration of switchpoints
- high resistance against vibration and shock
- very high electromagnetic compatibility (EMC) according to EN/IEC 61000-4
- Facilitates compliance with green house gas regulations mandated by EPA (USA), SGCC (China) or F-Gas Regulation (Europe)

BMR - Tél. 04.42.55.31.67 - info@bmr-france.fr - www.bmr-france.fr

Sensor Communicator SC

The Sensor Communicator (SC) is a battery operated handheld device (PDA like). It is used for access to sensor data and calibration of Trafag pressure transmitters, for example adjustment of zero point and span or start-up of a CANopen device.

Application

The table below details the adaptor cables required for the various pressure transmitters. This table will be continuously updated to accommodate new models. Please contact your representative for the most up-to-date list.

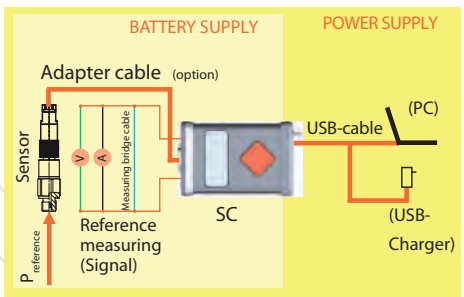
Multi-functional
- Identification of device data (e.g. model, signal output, type plate, manufacturing date, ...)
- adjustment of zero point and span
- CANopen: additional setting of Node-ID and Baud rate

Safe
- Factory reset: Reset possibility to the original status

Simple
- Manipulation with 4-point cursor
- It is independently battery operated (including power supply of pressure sensor). Main power supply also included
- Battery charging through USB-interface
- Simple updating of the software with USB-interface

Versatile
- Accordingly to the pressure transmitter compatible adapter cable (accessory)
- Possibility of connection of external measuring device for signal output checking
- Sleep mode during battery mode

Connection scheme



Der Sensor Communicator (SC) ist ein netzunabhängiges Gerät im Handformat (ähnl. PDA) mit Zugang zu den Sensordaten und Kalibration von Trafag-Drucktransmittern. Damit kann zum Beispiel die Verstellung von Nullpunkt und Spanne oder die Inbetriebnahme eines CANopen-Gerätes vorgenommen werden.

Anwendungen

Die Geräte können mit entsprechenden Adapterkabeln gemäss untenstehender Tabelle angeschlossen werden. Die Palette wird fortlaufend erweitert. Fordern Sie bitte die aktuellste Liste an.

Multifunktional
- Auslesen der Gerätedaten (z.B. Modell, Signalausgang, Typenschild, Produktionsdatum, ...)
- Einstellung von Nullpunkt und Spanne
- CANopen: zusätzliche Einstellung der Node-ID und Baudrate

Sicher
- Factory Reset: Rückstellmöglichkeit auf die Werkseinstellungen

Einfach
- Bedienung mittels 4-Punkt-Cursor
- Neben Netzbetrieb ist ein vollständiger Betrieb im Batteriemodus möglich (inkl. Stromspeisung des Drucksensors)
- Batterie-Aufladung mittels USB-Schnittstelle
- Einfache Updatemöglichkeit der Software über USB-Schnittstelle

Vielseitig
- Entsprechend dem Drucktransmitter passende Adapterkabel (Zubehör)
- Anschlussmöglichkeit von externen Messgeräten zur Kontrolle des Ausgangssignals
- Sleep-Mode während Batteriebetrieb

Le communicateur de sonde (SC) est un dispositif tenu à la main (comme un PDA). Il est employé pour l'accès aux données des capteurs et le calibrage des transmetteurs de pression Trafag, par exemple pour l'ajustement du zéro et de la plage de pression ou le démarrage d'un dispositif CANopen.

Application

Le tableau ci-dessous donne le détail des différents câbles adaptateurs requis pour les différents transmetteurs de pression. Ce tableau sera sans interruption mis à jour pour adapter aux nouveaux modèles. Veuillez contacter votre représentant pour connaître la dernière liste.

Multifonctionnel
- Identification des données du dispositif (p.ex. le modèle, signal de sortie, type, date de fabrication, …)
- Ajustement du point zéro et de la plage
- CANopen: arrangement du Nœud-Identification et du Baud Rate

Sûr
- Reset Usine: possibilité de revenir aux calibrations d'origine

Simple
- Manipulation grâce à un curseur à 4 touches
- Il est autonome sur batterie (et il alimente le transmetteur de pression). Les autres sources d'alimentation sont prévues et incluses.
- La batterie est rechargeable par une interface de port USB.
- La mise à jour du logiciel est simple et s'effectue avec une interface de port USB.

Souple
- Compatibilité avec tout transmetteur de pression Trafag grâce aux câbles adaptateurs (accessoires).
- Possibilité de raccorder un appareil de mesure externe pour contrôle du signal de sortie du transmetteur.
- Mode veille en fonctionnement sur batterie.

Order number for adapter cables

	Signal output							
	4...20 mA		0...10 VDC 0...5 VDC 1...6 VDC		0.5...4.5 VDC (ratiometric)		CANopen	
Connector type	Model	Order-No	Model	Order-No	Model	Order-No	Model	Order-No
Industrial Standard 82XX.XXXX.**01**.XX...	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC01A	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC01V	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC01R		
M12, 4 poles 82XX.XXXX.**32**.XX...	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC32A	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC32V	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC32R		
M12, 5 poles 82XX.XXXX.**35**.XX...	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC35A	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC35V	NAT (8251) NAE (8255) NAH (8253) NSL (8257)	SC35R	COP (8864) CMP (8270)	SC35CAN
EN175301-803 82XX.XXXX.**04**.XX...	EPR (8293) EPN (8298) NPN (8264)	SC04A						
EN175301-803 (invers) 82XX.XXXX.**04**.XX.**92**...	EPR (8293) EPN (8298) NPN (8264)	SC04A92						

Catalogue 2012

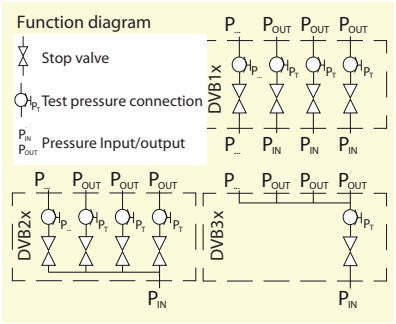
Delivery time | Lieferfrist | Délai de livraison
- ✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
- ○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

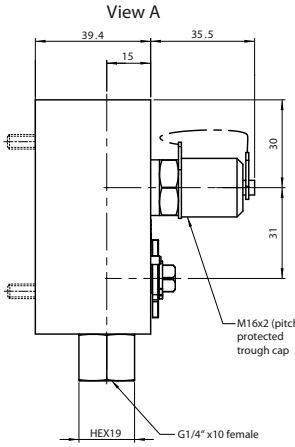
Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

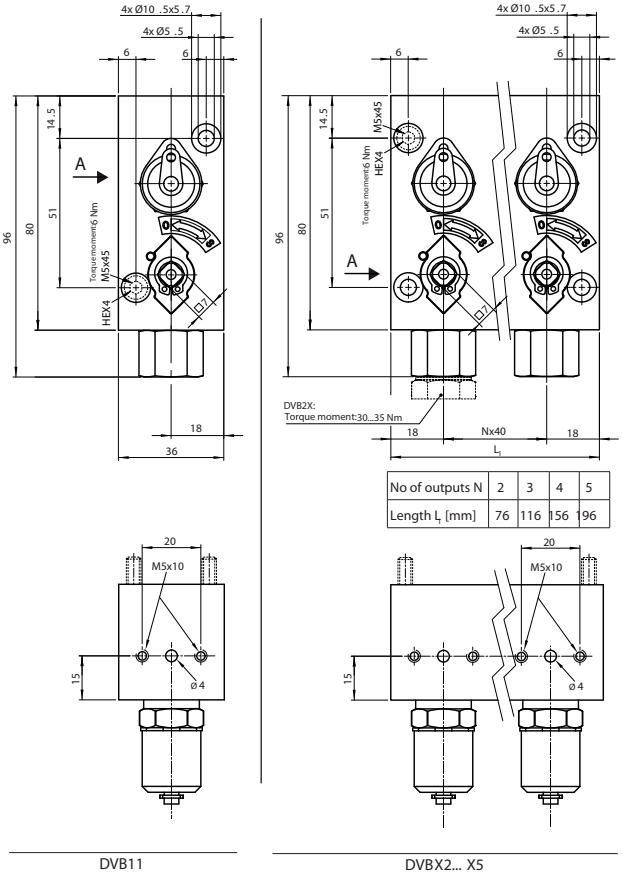
function tests of devices during running process with stop valve and test connection, pressure: -0.8...100 bar, temperature: -20...120 °C

DVB
DIAGNOSTIC VALVE BLOCK, NO INTERRUPTION OF OPERATION

Data sheet H72361
Instruction H73361







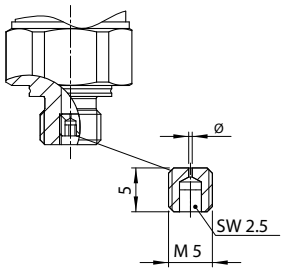
No of outputs N	2	3	4	5
Length L_1 [mm]	76	116	156	196

	Type	Text	Sensor material	NOTES
❍	**DVB11**	1 P-in, 1 test connection, 1 P-out	Al, PEEK, FPM	
❍	**DVB12**	2 P-in, 2 test connection, 2 P-out	Al, PEEK, FPM	
❍	**DVB13**	3 P-in, 3 test connection, 3 P-out	Al, PEEK, FPM	
❍	**DVB14**	4 P-in, 4 test connection, 4 P-out	Al, PEEK, FPM	
❍	**DVB15**	5 P-in, 5 test connection, 5 P-out	Al, PEEK, FPM	
❍	**DVB22**	1 P-in, 2 test connection, 2 P-out	Al, PEEK, FPM	
❍	**DVB23**	1 P-in, 3 test connection, 3 P-out	Al, PEEK, FPM	
❍	**DVB24**	1 P-in, 4 test connection, 4 P-out	Al, PEEK, FPM	
❍	**DVB25**	1 P-in, 5 test connection, 5 P-out	Al, PEEK, FPM	
❍	**DVB32**	1 P-in, 1 test connection, 2 P-out	Al, PEEK, FPM	
❍	**DVB33**	1 P-in, 1 test connection, 3 P-out	Al, PEEK, FPM	
❍	**DVB34**	1 P-in, 1 test connection, 4 P-out	Al, PEEK, FPM	
❍	**DVB35**	1 P-in, 1 test connection, 5 P-out	Al, PEEK, FPM	

with M5 male thread
retrofit kit for pressure connections with integrated M5 female threads

DAMP...
PRESSURE PEAK DAMPING ELEMENTS

set of 5 pcs.

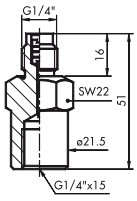


Data sheet H72258

	Type	Text	Sensor material	NOTES
✓	**DAMP0.4**	with 0.4mm hole for water and light oil	1.4435/316L	
✓	**DAMP1.0**	with 1.0mm hole for heavy oil	1.4435/316L	

G1/4“ male - G1/4“ female
integrated in an adapter

K.../F...
SNUBBERS



Data sheet H72258

	Type	Text	Sensor material	NOTES
✓	**K3**	Snubber for heavy oil	1.4435/316L	
❍	**F3**	Snubber for heavy oil	brass	
✓	**K4**	Snubber for light oil	1.4435/316L	
✓	**F4**	Snubber for light oil	brass	
✓	**K5**	Snubber for water/ air	1.4435/316L	
✓	**F5**	Snubber for water/ air	brass	

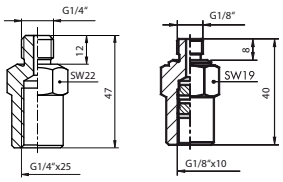
Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
❍ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

G1/8“ male - G1/8“ female, G1/4“ male - G1/4“ female
presssure peak damping element integrated in an adapter

K1/K2
SNUBBERS

Data sheet H72258

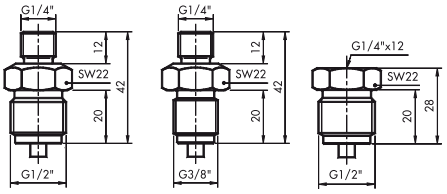


	Type	Text	Sensor material	NOTES
○	**K1 G1/4“**	for water/ air/ light oil	1.4435/316L	
○	**K2 G1/8“**	for water/ air/ light oil	1.4435/316L	

G1/4“ male - G1/2“ or G3/8“ male
G1/4“ female - G1/2“ male

ADAPTERS
WITH MANOMETER PRESSURE PORTS

Data sheet H72258

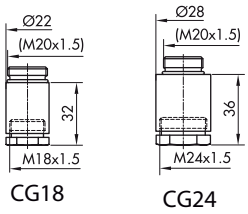


A2/D2 A1/D1 D4

	Type	Text	Sensor material	NOTES
○	**D1**	G1/4“ male - G3/8“ male manometer	1.4435/316L	
✓	**A1**	G1/4“ male - G3/8“ male manometer	brass	
✓	**D2**	G1/4“ male - G1/2“ male manometer	1.4435/316L	
○	**A2**	G1/4“ male - G1/2“ male manometer	brass	
✓	**D4**	G1/4“ female - G1/2“ male manometer	1.4435/316L	

DIN8280 for shipbuilding
to retrofit Pressure Transmitters, Pressure Switches and Thermostats

CG
SCREWED CABLE GLAND

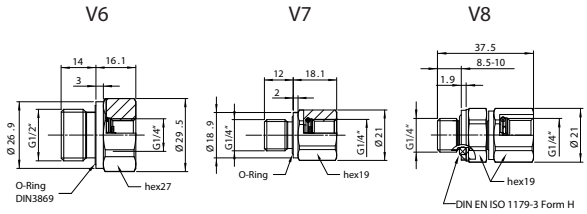


	Type	Text	Sensor material	NOTES
✓	**CG18**	M18x1.5 for 8...10.5 mm cable diameter	brass	
✓	**CG24**	M24x1.5 for 14...16.5 mm cable diameter	brass	

Allows instrument to be replaced easily without interrupting normal operation (max. 40 bar).
Working pressure up to 600 bar (200 bar for V8) and media temperature -25...125 °C.
Furthermore V8 provides the possibility to align the mounted device.

V6 / V7 / V8
STOP VALVE

Data sheet H72258



	Type	Medias	Sensor material	NOTES
○	**V6**	for water, air, light-crude, heavy oil	1.4305/FKM	
○	**V7**	for water, air, light-crude, heavy oil	1.4305/FKM	
○	**V8**	for water, air, light-crude, heavy oil	1.4305/FKM	

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

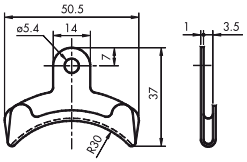
for testing of Pressure Transmitter & Pressure Switches

THP
HANDPUMP FOR PRESSURE TESTING

	Type	Text	Resolution [mbar]	Range P [bar]	NOTES
❍	**THP30**	pressure connection: G1/4“ female	10	-0.85...+20	
❍	**THP700**	pressure connection: G1/4“ female	200	0...700	

for Froststat F / F...R

K80140
CAPILLARY TUBE HOLDER



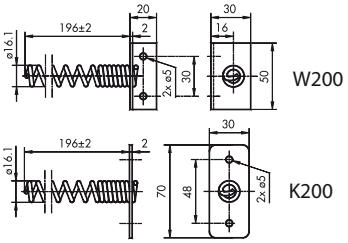
	Type	Text	Sensor material	NOTES
✓	**K80140**	6 pcs in a plastic bag	steel galvanised	

Accessories Zubehör Accessoires

for HVAC
for retrofitting of Thermostats

W_K
THERMOSTAT SENSOR DUCT HOLDER

Data sheet H72106

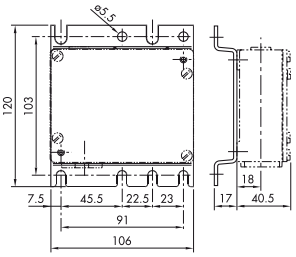


	Type	Text	Sensor material
✓	**W200**	for I, IS, M2, M2S	steel galvanised
✓	**K200**	for L, LF, M, MS	steel galvanised

NOTES

for Pressure Transmitters and Pressure Switches
steel galvanised

MB31
MOUNTING PLATE



	Type	Text	Sensor material
✓	**MB31**	for N, ND, DGP, P, PS, PV, PD, PK, PVF, EXP, EXPK, EXPD	ST galv.

NOTES

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

Find your local distributor at the end of the catalogue
Online-download of data sheet & instruction:

OEM/ customized

Whether a customized product or serial products, we develop and produce in-house. The name Trafag stands for modular engineering which allows us to meet customer requirements. The following examples underline this statement:

OEM/ kundenspez.

Ob Unikat oder Serie, wir entwickeln und produzieren in Eigenregie. Weiter steht der Name Trafag für ein modular ausgerichtetes Engineering. Das lässt uns extrem flexibel auf Kundenwünsche reagieren, was wir Ihnen nachfolgend aufgrund einiger Beispiele zeigen:

OEM/ spécifications clients

Peu importe si c'est une pièce unique ou une série, nous développons et produisons en propre régie. Le nom Trafag signifie un développement aligné modulairement ce qui nous permet de réagir d'une manière flexible aux demandes des clients. Nous vous le montrons par la suite sur la base de quelques exemples:

TANK PRESSURE TRANSMITTER WITH TEMPERATURE SENSOR

LOW-COST SOLUTION BASED ON AN ACCURATE THICK-FILM-ON-CERAMIC PRESSURE SENSOR

Range	-100...+900 mbar
Output	digital signal
Electrical connection	pcb connector
Media temperature	-25...85°C
Application	fuel density

Function: Determination of fuel density in petrol tanks. Calculation of density with detection of pressure & temperature (module of Trafag) and level.

Criteria: Accurate measuring of temperature & pressure with Trafag ASIC electronics and thick-film-on-ceramic pressure sensor with integrated PTC temperature sensor.

Funktion: Bestimmung der Kraftstoffdichte in Tanks mittels Ermittlung von Druck & Temperatur (Modul von Trafag) und Füllstand.

Kriterien: Genaue Messung von Druck & Temperatur mit Trafag-ASIC-Elektronik und Dickfilm-auf-Keramik-Drucksensor mit integriertem PTC-Temperatursensor.

Fonction: Détermination de la densité dans les réservoirs de carburant. Calculation de la densité par la mesure de la pression et température et du niveau.

Critères: Mesure précise de la température et de la pression avec un ASIC Trafag et une cellule couche épaisse céramique intégrant une sonde de température PTC.

CRANK CASE PRESSURE TRANSMITTER

FOR LOW PRESSURE MEASUREMENT

Range (relative)	0...50 inch H_2O 0...124 mbar
Output (ratiometric)	0.5...4.5 VDC
Electrical connection	DIN72585
Operating temperature	-25...105°C
Application	Crank case on high horse power diesel engines

Function: Low pressure thin-film-on-steel sensor. An all welded sensor design with integrated Trafag ASIC electronics.

Criteria: Suitable for high temperature, shock and vibration requirements. TEB which includes NLH and all temperature effects of ± 2% FS.

Funktion: Niederdrucksensor mit Dünnfilmtechnologie. Verschweisste Sensor-Baugruppe mit Trafag ASIC.

Kriterien: Einsatz unter hohen Temperaturen, Schock- und Vibrationsbedingungen. TFB inkl. alle Temperatureffekte von ± 2% d.S.

Fonction: Mesurer la pression avec un capteur couche mince métallique. Avec un capteur entièrement soudé avec une électronique ASIC de Trafag.

Critères: Valable pour haute température, chocs et vibrations. TEB ± 2% incluant NLH et tous les effets de la température.

LOW PRESSURE TRANSMITTER

CUSTOMIZED DIFFERENTIAL PRESSURE TRANSDUCER WITH THIN-FILM-ON-STEEL TECHNOLOGY

Range	0...200 mbar
Output (ratiometric)	0.5...4.5 VDC
Electrical connection	cable
Overpressure	1 resp. 5 bar
Media temperature	-40...135°C
Application	Engines

Function: Pressure measuring having as a reference of a variable ambient pressure, resp. differential pressure of two different pressures.

Criteria: Determining pressure according to specific customer requirements, compact and light design, high temperature resistant, resistant against vibration and EMC influence.

Funktion: Druckmessung mit Referenz eines variablen Umgebungsdruckes resp. Differenzdruckmessung von zwei verschiedenen Drücken.

Kriterien: Druckermittlung nach speziellen Kundenvorgaben, kompakte und gewichtsparende Bauweise, hoher Temperatureinsatz, beständig gegen Vibrationen und EMV-Einflüsse.

Fonction: Mesure de pression ayant comme référence une pression ambiante variable, mesure du différentiel de deux pressions différentes.

Critères: Détermination de pression selon indications du client, construction compacte et légère, peut être utilisé pour hautes températures, résistant aux vibrations et influences CEM.

OEM/ customized **OEM/ kundenspez.** **OEM/ spécifications clients**

TEMPERATURE TRANSMITTER

ACTIVE TEMPERATURE MEASURING

Range	-40...125°C
Output (ratiometric)	0.5...4.5 VDC
Electrical connection	Cable & plug
Application	Engines

Function: Active temperature measuring under severe conditions.

Criteria: Extreme temperatures directly at the measuring point, compact and light design, high vibration resistance, high EMC compatibility.

Funktion: Aktive Temperaturmessung unter Extrembedingungen.

Kriterien: Extreme Temperaturbedingungen direkt am Messpunkt, kompakte und gewichtsparende Bauweise, sehr grosse Vibrationsbeständigkeit, hoher EMV-Schutz.

Fonction: Mesure active de température sous conditions extrêmes.

Critères: Températures extrêmes directement au point de mesure, construction compacte et légère, haute résistance aux vibrations et influences CEM.

8x OVERPRESSURE SAFETY WITH 0.3% ACCURACY

Range	-40...+125°C
Measuring range rel.	0...10 bar
Overpressure max.	80 bar
Burst pressure min.	300 bar
Accuracy @ +25°C	± 0.3 % FS typ.

Function: To avoid failures due to extreme pressure peaks the overpressure safety is extensively improved.

Criteria: 8x overpressure safety with normal accuracy of 0.3% due to extended calibration and cell selection.

Funktion: Zur Vermeidung von Ausfällen aufgrund extremer Druckspitzen wird die Überdruckfestigkeit massiv erhöht.

Kriterien: 8-fache Überdruckfestigkeit unter Beibehaltung der normalen Genauigkeit von 0.3% durch aufwändige Kalibration und Zellenselektion.

Fonction La résistance aux surpressions a été considérablement augmentée afin d'éviter les pannes dues à des pics de pression extrêmes.

Critères: Résistance 8 fois supérieure aux surpressions tout en conservant la précision normale de 0.3 % grâce à une calibration et à une sélection des cellules extrêmement rigoureuses.

ON-BOARD PRESSURE TRANSMITTER OPT

Sensor material	1.4542/630
Ambient temperature	-25...+100°C
Sensor temperature max.	-25...+100°C
Output (ratiometric)	0.5...4.5 VDC

Function: Miniaturized pressure transmitter for application directly on PCB.

Criteria: Completely welded sensor system with outstanding media compatibility due to high grade stainless steel execution.

Funktion: Miniaturisierter Drucktransmitter für die Anwendung direkt auf der Leiterplatte.

Kriterien: Ausgezeichnete Medienbeständigkeit dank komplett verschweisstem Sensorsystem aus hochwertigem Edelstahl.

Fonction: Transmetteur de pression miniaturisé pour application sur carte imprimée.

Critères: Résistance exceptionelle de médias par un système de capteur en acier complètement soudé sans joint en acier inox de qualité supérieure.

proven sensor technology, excellent long-term stability, different signal outputs

8826

SMALL HIGH-TEMPERATURE PRESSURE TRANSMITTER

Sensor:	
Range	0...400 bar
Sensor material	1.4542/630
Media temperature	-25...+200°C
Pressure connection	M10x1 male

Data sheet H72350

Function: Small transmitter for very high temperature applications up to +200°C.

Criteria: Thin-film-on-steel transmitter with separate electronics. Different output signals available.

Funktion: Transmitter in geringer Bauweise für Anwendungen im hohen Temperaturbereich bis +200°C.

Kriterien: Dünnfilm-auf-Stahl Transmitter mit abgesetzter Elektronik. Verschiedene Ausgangssignale möglich.

Fonction: Transmetteur de dimensions réduites pour les applications hautes températures jusqu'à +°200°C.

Critères: Transmetteur couche mince sur acier avec électronique déportée. Divers signaux de sortie possibles.

Delivery time | Lieferfrist | Délai de livraison

✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock

○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

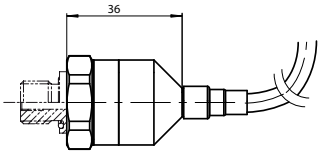
Find your local distributor at the end of the catalogue

Online-download of data sheet & instruction:

durable cable connection with high IP-Protection

EPN, EPNCR
CABLE CONNECTION FOR PRESSURE TRANSMITTERS

Cable material	FDR 25
Operating temperature	-40...+125°C
Protection	IP69K
Vibration	15g (20...200 Hz)
Cable length	1.5 m 3.0 m 3.5 m



Data sheet H72312

0.1% Accuracy

8253 / 8270
HIGH ACCURACY TRANSMITTER

Sensor material	1.4542
Outputs	4...20 mA 0...5 VDC 1...6 VDC 0...10 VDC
ratiometric	0.5...4.5 VDC
digital	CANopen
Operating temperature	-40...125°C
Media temperature	-40...125°C

Range [bar]	Max. working pressure [bar]	Accuracy NLH (BSL) [% FS typ.]
0...4.0	8	±0.1
0...6.0	12	±0.1
0...10	20	±0.1
0...16	32	±0.1
0...25	50	±0.1
0...40	80	±0.1
0...60	120	±0.1
0...100	200	±0.1
0...160	320	±0.1
0...250	500	±0.1
0...400	800	±0.1
0...600	1000	±0.1

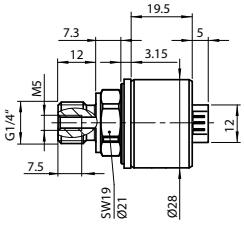
Data sheet H72617

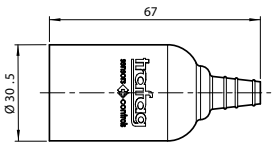
with thick film on ceramic technology for absolute or relative pressure measuring

ECA
AUTOCLAVES PRESSURE TRANSMITTER

Sensor material	Al_2O_3
Housing material	PBT
Outputs	4...20 mA 0...5 VDC
ratiometric	0.5...4.5 VDC
Operating temperature	-25...85°C
Media temperature	-25...125°C

Range [bar]	Max. working pressure [bar]	U-supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
0...4.0	8	24 or 5	±0.4
0...6.0	12	24 or 5	±0.4





Data sheet H72325

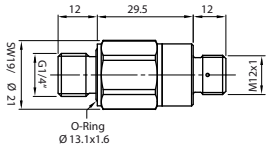
OEM/ customized OEM/ kundenspez. OEM/ spécifications clients

Pressure Transducer with thin film on steel technology with excellent long-term stability, for relative or absolute pressure measuring

8822
PRESSURE TRANSDUCER

Data sheet H72315

Sensor material	1.4542/630
Output (ratiometric)	1.7...2 mV/V
Operating temperature	-25...125°C
Media temperature	-25...125°C



Range [bar]	Max. working pressure [bar]	U-supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
0...1.0	2	10...15	±0.5
0...2.5	5	10...15	±0.5
0...4.0	8	10...15	±0.2
0...6.0	12	10...15	±0.2
0...10.0	20	10...15	±0.2
0...16.0	32	10...15	±0.2
0...25.0	50	10...15	±0.2
0...40.0	80	10...15	±0.2
0...60.0	120	10...15	±0.2
0...100.0	200	10...15	±0.2
0...160.0	320	10...15	±0.1
0...250.0	500	10...15	±0.1
0...400.0	800	10...15	±0.1
0...600.0	1000	10...15	±0.1

OEM pressure sensor with thin film on steel technology with excellent long-term stability, please contact us for other versions

8810
OEM: PRESSURE SENSOR

Data sheet H72205

Sensor material	1.4542/630
Output (10 VDC supply)	1.4...2.8 mV/V
Operating temperature	-25...100°C
Media temperature	-25...125°C

Range [bar]	Max. working pressure [bar]	U-supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
0...40.0	80	10...15	±0.07
0...100.0	200	10...15	±0.07
0...250.0	500	10...15	±0.07
0...400.0	800	10...15	±0.07
0...600.0	1000	10...15	±0.07

OEM pressure sensor with thick film on ceramic technology resistant to aggressive media, please contact us for other versions

8421
OEM: PRESSURE SENSOR

Data sheet H72233

Sensor material	Al_2O_3, 316L (1.4435 or 1.4404)
Output (10 VDC supply)	2.3...3.5 mV/V
Operating temperature	-25...125°C
Media temperature	-10...125°C

Range [bar]	Max. working pressure [bar]	U-supply [VDC]	Accuracy NLH (BSL) [% FS typ.]
0...1.6	3.2	20	±0.25
0...4.0	10	20	±0.25
0...6.0	12	20	±0.25
0...10.0	20	20	±0.25
0...16.0	32	20	±0.25
0...25.0	50	20	±0.25
0...40.0	80	20	±0.25
0...60.0	120	20	±0.25
0...100.0	200	20	±0.25

Delivery time | Lieferfrist | Délai de livraison
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○ Approx. 2 weeks | Ca. 2 Wochen | Env. 2 semaines

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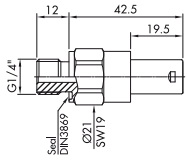
0...5 VDC ratiometric output
for high volumes

VSP
OEM: VERY SMALL PRESSURE TRANSMITTER

Data sheet H72249

Sensor material	1.4542/630
Output (ratiometric)	0.5...4.5 VDC
Operating temperature	-40...125°C
Media temperature	-40...125°C



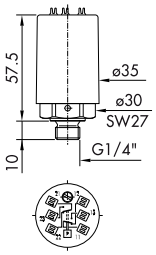
Range [bar]	Max. working pressure [bar]	U-supply [VDC ratiometric]	Accuracy NLH (BSL) [% FS typ.]
0...6.0	12	5	±0.2
0...10.0	20	5	±0.2
0...16.0	32	5	±0.2
0...25.0	50	5	±0.2
0...40.0	80	5	±0.2
0...60.0	120	5	±0.2
0...100.0	200	5	±0.2
0...160.0	320	5	±0.2
0...250.0	500	5	±0.2
max. 350.0			

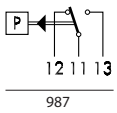
2 set points, settings on customer's request
Factory-set

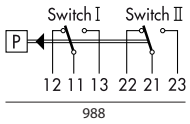
987 / 988
ECONOMIC PRESSOSTATS

Data sheet H72272

Sensor material	1.4301 or Bronze
EN60730-1/EN60730-2-6	Typ. 2.B.H
Flat plugs	IEC 2.8 x 0.5 mm
Out	Microswitch







Range [bar]	Switching diff. (typ.) [bar]	Max. working pressure [bar]	Ambient temperature [°C]
-0.3...1.3	0.1	4	-25...+70
0...1.6	0.1	4	-25...+70
0...2.5	0.2	4	-25...+70
0...4.0	0.3	6	-25...+70
1...10	0.6	15	-25...+70

NSF COMPONENT

c UL us

stainless steel housing,
resistant to very aggressive media

P, PK, EXP, EXPK
STAINLESS STEEL HOUSING FOR HIGHEST RESISTANCE

Data sheet see →

Housing material	1.4301/304
Protection	IP66

Available for	Data sheet
Bellows sensor pressostat	H72252
Bellows sensor pressostat EX	H72259
Piston sensor pressostat	H72263
Piston sensor pressostat EX	H72263

Please contact Trafag for more information

OEM/ customized | OEM/ kundenspez. | OEM/ spécifications clients

TEMPERATURE SENSOR

Sensor material	Nickel thin film on ceramic
Characteristics	DIN 43760
Measuring current	5 mA
Response time water flow	0.3 s (@ 0.2m/s)
Response time air flow	27 s (@ 0.2m/s)
Temperature range	-60...+200 °C

R_0 at 0°C [Ohm]	Electrical connection
100	lead frames
1000	lead frames

Data sheet H70401

SIMPLE APPARATUS

INDUSTAT 414 for Ex-i Applications

"SIMPLE APPARATUS" (previous: for intrinsically safe circuits)

Data sheet H72183

Range [°C]	Sensor max. [°C]	Range [°C]	Sensor max. [°C]
-30...+40	50	-10...+80	85
-10...+25	60	+5...+95	105
0...+35	70	+20...+110	115
+10...+45	85	+20...+150	165
+10...+80	100	+20...+230	250
+15...+30	60	+40...+300	330
-10...+35	70	+70...+350	380

to be operated with certified Ex-barrier (see below)

AMBISTAT 419 for Ex-i Applications

"SIMPLE APPARATUS" **(previous: for intrinsically safe circuits)**

Data sheet H72182

Range [°C]	Operating temperature [°C]
-30...+30	-30...+40
-20...+40	-30...+50
+5...+35	-30...+50
0...+60	-30...+65

to be operated with certified Ex-barrier (see below)

Thermostats, when combined with a certified Ex-barrier can be used as “simple electrical apparatus” in Zone 1 and 2, as well as in Zone 21 and 22, according to IEC/EN 60079-14. These thermostats are not suitable for Zone 0 and Zone 20. Use in safety relevant applications (approved electrical apparatus) is not permitted.

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PRESSOSTAT 904 for Ex-i Applications

"SIMPLE APPARATUS" (previous: for intrinsically safe circuits)

Data sheet H72364

Range [bar]	Overpressure [bar]	Burst pressure [bar]
-0.9...1.5	10	13
0.2...1.6	10	13
0.2...2.5	10	13
0...4	12	26
0...6	12	26
1...10	24	36
1...16	24	36
2...25	40	75
4...40	40	75
6...60	100	160
10...100	100	160

to be operated with certified Ex-barrier (see below)

DIFFERENTIAL PRESSURE PRESSOSTAT 924 for Ex-i Applications

"SIMPLE APPARATUS" (previous: for intrinsically safe circuits)

Data sheet H72365

Range [bar]	Differential pressure [bar]	Overpressure [bar]	Burst pressure [bar]
-1...6	-0.6...3.4	12	26
-1...6	0...4	12	26
-1...8	0...6	12	26
-1...12	1...10	24	36
-1...18	1...16	24	36

to be operated with certified Ex-barrier (see below)

PRESSOSTAT 947 for Ex-i Applications

"SIMPLE APPARATUS" (previous: for intrinsically safe circuits)

Data sheet H72366

Range [bar]	Overpressure [bar]	Burst pressure [bar]
1...10	100	200
4...40	200	400
6...60	200	400
10...100	200	400
16...160	400	600
25...250	400	600
40...400	800	1000
60...600	800	1000

to be operated with certified Ex-barrier (see below)

Pressostats, when combined with a certified Ex-barrier can be used as “simple electrical apparatus” in Zone 1 and 2, as well as in Zone 21 and 22, according to IEC/EN 60079-14. These pressostats are not suitable for Zone 0 and Zone 20. Use in safety relevant applications (approved electrical apparatus) is not permitted.

TERMINOLOGY
OF PRESSURE MEASURING DEVICES, see also H72243

TERMINOLOGY

On the following pages, terms are described that Trafag uses frequently in its data sheets.

Interpretation of technical specifications

Trafag strives to specify meaningful and practice relevant technical data. Technical data contain statistical data regarding the measuring accuracy of instruments which can be expected under certain measuring conditions.
In this context Trafag frequently uses the term "typical". This means that 75% of the delivered devices lie within the specified values. The term "maximum" means that 100% of the delivered devices lie within the specified values.
For many instruments the measuring conditions have a relevant influence on the accuracy. In particular, inaccuracies of pressure transmitters are often substantially larger with extreme operating temperatures than with ambient temperatures. Trafag's specifications indicate accuracies which apply over the entire defined area of application. For certain areas of applications the accuracies are substantially better than recognizable from the data sheet.

BEGRIFFSERKLÄRUNGEN

Auf den folgenden Seiten werden Begriffe erläutert, die Trafag häufig in Datenblättern verwendet.

Aussagekraft von technischen Angaben

Trafag bemüht sich, aussagekräftige und praxisrelevante technische Daten zu spezifizieren. Technische Daten beinhalten statistische Angaben über die zu erwartenden Messgenauigkeiten von Geräten unter bestimmten Messbedingungen.
Trafag verwendet in diesem Zusammenhang häufig den Begriff „typisch", was bedeutet, dass 75% der ausgelieferten Geräte innerhalb der spezifizierten Werte liegen. Ist der Begriff „maximal" einer Spezifikation beigefügt, erreichen 100% der ausgelieferten Geräte die spezifizierten Werte.
Die Messbedingungen haben bei vielen Geräten einen massgeblichen Einfluss auf die Genauigkeit. Insbesondere sind die Ungenauigkeiten von Drucktransmittern bei extremen Betriebstemperaturen oft erheblich grösser als bei Raumtemperatur. Um anwendungsnahe Aussagen zu machen, gibt Trafag Genauigkeiten an, die über den gesamten definierten Einsatzbereich gelten. Für einen eingeschränkten Einsatzbereich sind die Genauigkeiten dann wesentlich besser, als aus dem Datenblatt erkennbar.

EXPLICATIONS DE LA TERMINOLOGIE

Dans les pages suivantes, vous trouverez les explications des notions que Trafag utilise fréquemment dans ces fiches techniques.

Valeur des indications techniques

Trafag s'efforce de spécifier des données techniques valables et pertinents à la pratique. Des données techniques comprennent des données statistiques concernant la précision de mesurage des instruments sous des conditions déterminées.
Trafag utilise souvent la notion «typique». Cela veut dire que 75% des instruments délivrés correspondent aux valeurs spécifiées. Utilisant la notion „maximum" signifie que 100% des instruments délivrées se trouvent dans les valeurs spécifiées.
Les conditions de mesurage ont une influence pertinente sur la précision d'un grand nombre d'instruments. Les inexactitudes des transmetteurs de pressions sont en particulier souvent considérablement plus grandes avec des températures de fonctionnement extrêmes qu'avec la température ambiante. Les spécifications Trafag indiquent les précisions qui sont en vigueur sur le rayon d'action défini total. Pour un rayon d'action restreint, les précisions sont alors largement mieux que celles indiquées dans la fiche technique.

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...TERMINOLOGY

OF PRESSURE MEASURING DEVICES, see also H72243

MAIN CHARACTERISTICS

NOMINAL PRESSURE (MEASURING RANGE)
Range of operating pressure where errors remain within the specified accuracy.

OVERPRESSURE (MAX. WORKING PRESSURE)
Range above the nominal pressure which exceeds the tolerances of the rated pressure range without causing permanent damage to the measuring system.

BURST PRESSURE
A high overpressure (static) which causes permanent damage to the measuring system.
The instrument withstands this pressure without bursting and will not leak any measuring medium.

HAUPTMERKMALE

NENNDRUCK (MESSBEREICH)
Bereich des Betriebsdruckes, in dem die vorgegebene Genauigkeit eingehalten wird.

ÜBERDRUCK (MAX. ARBEITSDRUCK)
Bereich oberhalb des Nenndruckes, in dem die vorgegebene Genauigkeit überschritten werden darf, ohne bleibende Veränderungen der Messeigenschaften zu hinterlassen.

BERSTDRUCK
Druckwert (statisch), bei dem das Messgerät einen bleibenden Schaden nimmt.
Das Gerät darf bis zu diesem Druck nicht bersten. Es tritt kein Messstoff aus.

CARACTÈRES DISTINCTIFS

PRESSION NOMINALE (PLAGE DE MESURE)
Plage de la pression de service dans laquelle le capteur garde la précision spécifiée.

SURPRESSION (PRESSION DE SERVICE MAX.)
Plage au-dessus de la pression nominale qui peut dépasser la précision sans altérations durables des caractéristiques de mesure.

PRESSION D'ÉCLATEMENT
Surcharge de pression (statique) destructive. Le dépassement des limites élastiques du capteur altère irréversiblement la mesure.
L'instrument n'éclate pas jusqu'à cette pression et aucune matière de mesurage en fuit.

ACCURACY

TYP.
typical, 70...80% of all instruments fulfill this typical measured value.

MAX.
maximal , 100% of all instruments fulfill this maximum measured value.

FS (FULL SCALE)
Whole defined measuring range.

TEB (= TOTAL ERROR BAND)
Total error of all influences of temperature, NLH, calibration accuracy without time influence (long-term stability).

ACCURACY
Accuracy at ambient temperature with consideration of NLH, zero signal and final value deviation.
or: TFB without temperature influence at ambient temperature.

NLH (= NON-LINEARITY AND HYSTERESIS):
Largest deviation from the ideal reference line.

BSL (= BEST STRAIGHT LINE)
Best straight line (= reference line), does not run through the zero point of the diagram.

BSL THROUGH ZERO
Reference line runs through the zero point of the diagram.

TEMPERATURE COEFFICIENT (TC)
Change of measured value of zero point and span during change of temperature.

NON-LINEARITY
The maximum divergence of the actual characteristic curve from the reference line.

PRESSURE HYSTERESIS
The variation in the measuring characteristic of a given pressure when approached from a rising and falling direction.

SCALE ACCURACY (PRESSOSTATS)
Deviation, resulting from a manual switch point adjustment with help of the scale.

GENAUIGKEIT

TYP.
typisch, 70...80% aller Instrumente erfüllen diesen typischen Messwert.

MAX.
maximal, 100% aller Instrumente erfüllen diesen maximalen Messwert.

d.S. (DER [GESAMTEN MESS-]SPANNE)
Ganzer definierter Messbereich.

TFB (= TOTAL-FEHLER-BAND)
Gesamtfehler aller Temperatur-, NLH- und Abgleichfehler ohne Zeiteinfluss (Langzeitstabilität).

GENAUIGKEIT
Genauigkeit bei Raumtemperatur unter Berücksichtigung von NLH, Nullsignal- und Endwertabweichung.
oder: TFB ohne Temperatureinfluss bei Raumtemperatur.

NLH (= NICHTLINEARITÄT UND HYSTERESE):
Grösste Abweichung von der idealen Referenzlinie.

BSL (= BEST STRAIGHT LINE)
Beste Gerade (= Referenzlinie), verläuft nicht durch den Nullpunkt des Diagramms.

BSL DURCH NULL
Referenzlinie verläuft durch den Nullpunkt des Diagramms.

TEMPERATURKOEFFIZIENT (TK)
Messwertänderung von Nullpunkt und Spanne bei Temperaturänderung.

NICHTLINEARITÄT
Grösste Abweichung der Kennlinie von einer Referenzlinie.

DRUCK-HYSTERESE
Auftretende Differenz bei gleichem Druck zwischen Messungen in Richtung zunehmenden und danach abnehmenden Druckes.

SKALENGENAUIGKEIT (PRESSOSTATEN)
Abweichung, die bei der manuellen Schaltpunkteinstellung mithilfe der Anzeige (Skala) entsteht.

PRÉCISION

TYP.
typique, 70... 80% de tous les instruments réalisent cette valeur mesurée typique.

MAX.
maximum, 100% de tous les instruments réalisent cette valeur mesurée maximale.

E.M. (ÉTENDUE DE MESURE)
Plage de mesure définie totale.

TEB (= TOTAL ERROR BAND)
Bande d'erreur totale de toutes les influences de température, NLH et précision d'ajustement sans influence de temps (stabilité à long terme).

PRÉCISION
Précision avec la température ambiante compte tenu de NLH, d'une déviation de valeur finale et de signal zéro.
ou: TFB sans effet de température avec la température ambiante.

NLH (= NON-LINÉARITÉ ET HYSTÉRÉSIS):
Déviation de la ligne de référence idéale.

BSL (= BEST STRAIGHT LINE)
La meilleure ligne droite (= ligne de référence) ne passe pas par le zéro du diagramme.

BSL PAR ZÉRO
La ligne de référence passe par le zéro du diagramme.

COEFFICIENT THERMIQUE (CT)
Modification de valeur mesurée du zéro et de l'envergure lors d'un changement de température.

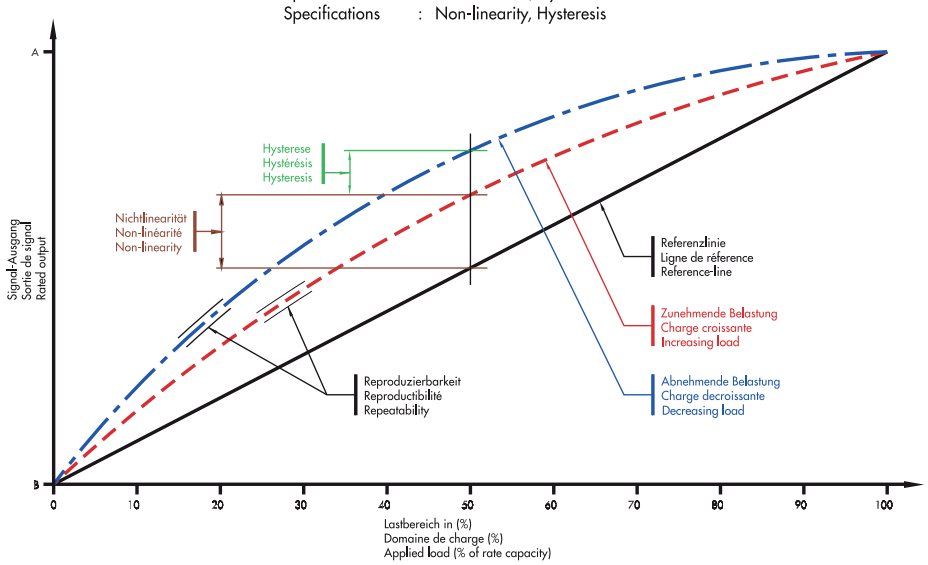
NON-LINÉARITÉ
Ecart de mesure par rapport à une ligne de référence.

HYSTÉRÉSIS DE PRESSION
Ecart de mesure à une pression de référence, entre une montée et une descente en pression.

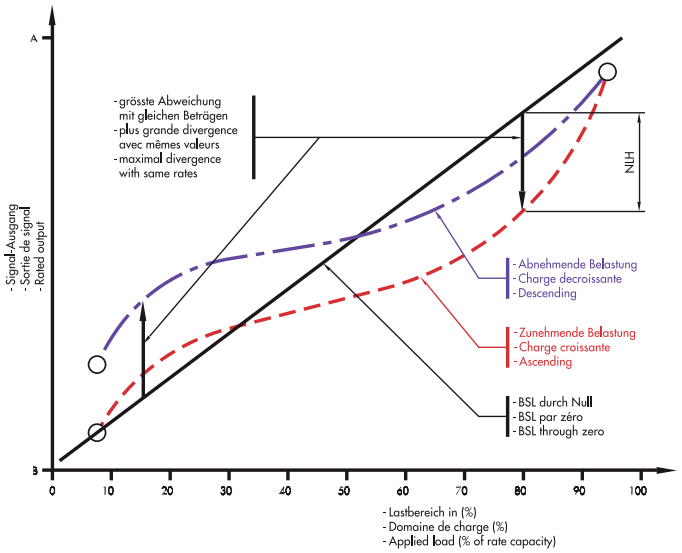
PRÉCISION DE L'ÉCHELLE (PRESSOSTATS)
Déviation qui résulte par ajustage manuelle de point du seuil à l'aide de l'échelle.

...TERMINOLOGY
OF PRESSURE MEASURING DEVICES, see also H72243

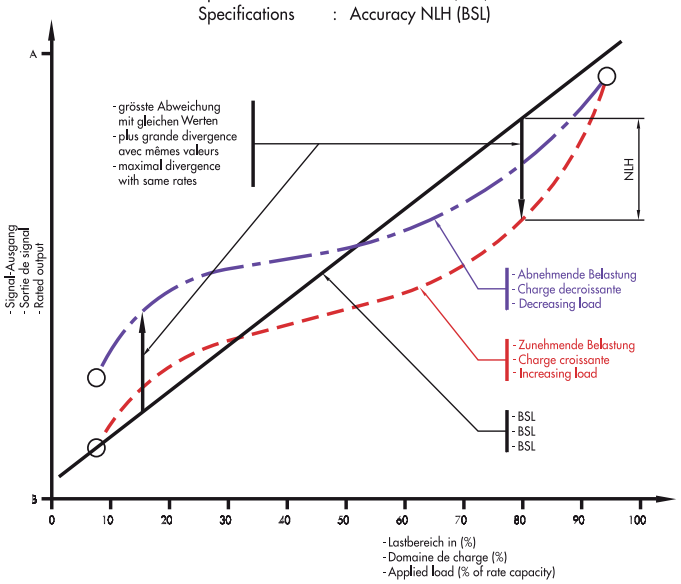
Spezifikationen : Nichtlinearität, Hysterese
Spécifications : Non-linéarité, Hystérésis
Specifications : Non-linearity, Hysteresis



Spezifikationen : Genauigkeit NLH (BSL durch Null)
Spécifications : Précision NLH (BSL par zéro)
Specifications : Accuracy NLH (BSL through zero)



Spezifikationen : Genauigkeit NLH (BSL)
Spécifications : Précision NLH (BSL)
Specifications : Accuracy NLH (BSL)



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REPEATABILITY
The capability under operating conditions to reproduce the same output signal under repetitive applications of an ideal input.

LONG TERM STABILITY
Change of accuracy under time influence (aging).

ELECTRICAL DATA

RISE TIME
The time necessarily for the output signal to react to a step change in pressure to rise from 10% to 90% of its final value, which arises as a result of the pressure change.

(SIGNAL) OUTPUT
Electrical signal out which is proportional to the applied pressure.

ZERO POINT (Z)
Z = zero
Signal output without applied pressure (P_{min})
e.g. 4 mA at 0 bar (P_{min})

FINAL VALUE (FV)
FV = Final Value
Signal output of the highest pressure value within the nominal pressure range (P_{max})
e.g. 20 mA at 100 bar (P_{max})

SPAN (S)
Final value (FV) - Zero point (Z) = Span (S)
e.g. Span (S) = (FV)20 mA - (Z)4 mA = 16mA

SWITCHING DIFFERENTIAL (PRESSOSTATS)
The range difference between set point operation of the micro switch and the reset value of pressure switch.
Ex. X...X = adjustable value
X - X = not adjustable value; runs proportionally to the nominal pressure
X = fixed value

LIMITER (PRESSOSTATS)
Pressostat with manual reset of the micro switch.

ENVIRONMENTAL CONDITIONS

OPERATING TEMPERATURE
The temperature range at which the instrument remains within specified tolerance.

STORAGE TEMPERATURE
The temperature range at which an instrument may be stored without permanent damage being caused to the measuring system.

MEDIA TEMPERATURE
Permissible temperature range of the measuring medium.

TEMPERATURE HYSTERESIS
The maximum variation of zero point and span signal over the working temperature range.

PROTECTION
Humidity and dust shield according to IP classes.

REPRODUZIERBARKEIT
Fähigkeit, unter den festgelegten Anwendungsbedingungen bei gleicher Eingangsgrösse eng benachbarte Werte der Ausgangsgrösse zu liefern.

LANGZEITSTABILITÄT
Genauigkeitsänderung unter Zeiteinfluss (Alterung).

ELEKTRISCHE DATEN

ANSTIEGSZEIT
Zeit, die ein Ausgangssignal nach einer sprunghaften Änderung des Druckes benötigt, um von 10% auf 90% seines Endwertes anzusteigen, der sich durch die Druckänderung ergibt.

AUSGANGSSIGNAL
Elektrisches Signal, das den Wert der Messgrösse zur Weiterverarbeitung ausgibt.

NULLPUNKT (Z)
Z = zero
Ausgangssignal im drucklosen Zustand (P_{min})
z.B. 4 mA bei 0 bar (P_{min})

ENDWERT (FV)
FV = Final Value
Ausgangssignal des grössten Druckwertes im Nenndruckbereich (P_{max})
z.B. 20 mA bei 100 bar (P_{max})

SPANNE (S)
Endwert (FV) - Nullpunkt (Z) = Spanne (S)
z.B. Spanne (S) = (FV)20 mA - (Z)4 mA = 16 mA

SCHALTDIFFERENZ (PRESSOSTATEN)
Bereich des Ein- und Ausschaltens des Mikroschalters bei Pressostaten.
Bsp. X...X = einstellbarer Wert
X - X = nicht einstellbarer Wert; verläuft proportional zum Nenndruck
X = fester Wert

BEGRENZER (PRESSOSTATEN)
Pressostat mit manueller Rückstellung des Mikroschalters.

UMGEBUNGSBEDINGUNGEN

BETRIEBSTEMPERATUR
Temperaturbereich, in dem das Messgerät seine Spezifikationen einhält.

LAGERTEMPERATUR
Temperaturbereich, in dem das Messgerät ohne bleibende Veränderungen der Messeigenschaften gelagert oder transportiert werden kann.

MEDIENTEMPERATUR
Zulässiger Temperaturbereich des Messmediums.

TEMPERATUR-HYSTERESE
Maximale Änderung von Nullpunkt und Ausgangsspanne nach festgelegtem Temperaturzyklus über dem Betriebstemperaturbereich.

SCHUTZART
Feuchtigkeits- und Staubschutz nach IP-Klassen.

REPRODUCTIBILITÉ
Capacité de reproduction de la mesure avec des conditions identiques d'utilisation, de pression et d'alimentation électrique.

STABILITÉ À LONG TERME
Modification de précision pendant une influence de temps (vieillissement).

SPÉCIFICATIONS ÉLECTRIQUES

TEMPS (SENSIBILITÉ) DE RÉPONSE
Temps de réponse après un brusque changement de pression pour augmenter de 10% à 90% de sa valeur finale qui ressort de modification de pression.

SIGNAL DE SORTIE
Signal électrique qui donne la valeur de la mesure.

POINT ZÉRO (Z)
Z = zéro
Signal de sortie pour une pression nulle (P_{min})
p.Ex. 4 mA à 0 bar (P_{min})

VALEUR FINALE (FV)
FV = Final Value
Signal de sortie au maximum de la pression nominale (P_{max})
p.Ex. 20 mA à 100 bar (P_{max})

SENSIBILITÉ (S)
Valeur finale (FV) - point zéro (Z) = Sensibilité (S)
p.ex. Sensibilité(S) = (FV)20 mA - (Z)4 mA = 16 mA

DIFFÉRENTIEL DE L'INTERRUPTEUR (PRESSOSTATS)
Ecart entre l'enclenchement et le déclenchement du microrupteur de pressostat.
Ex. X...X = valeur ajustable
X - X = valeur non ajustable mais proportionnelle en fonction de la pression
X = valeur fixe

LIMITEUR (PRESSOSTATS)
Pressostat avec réarmement manuel du microrupteur.

CONDITIONS D'ENVIRONNEMENT

TEMPÉRATURE DE SERVICE
Plage de température dans laquelle le capteur garde toutes ses spécifications.

TEMPÉRATURE DE STOCKAGE
Plage de température dans laquelle le capteur peut être stocké sans altérations de ses spécifications.

TEMPÉRATURE DE MÉDIAS
Gamme de température admise du média de mesure.

HYSTÉRÉSIS DE TEMPÉRATURE
Ecart maximal de mesure du point zéro et de la pleine échelle en fonction d'un cycle de température compris dans la plage de température de service.

PROTECTION
Pare-poussière et d'humidité après des classifications IP.

Catalogue 2012

...TERMINOLOGY

OF PRESSURE MEASURING DEVICES, see also H72243

SENSOR TYPES

FOR PRESSURE TRANSMITTERS

THIN FILM ON STEEL
- Very good long term stability
- Resistant to high medium temperatures
- All wetted parts are stainless steel (without additional material)
- Very good overpressure resistance, ideal for nominal pressures up to 2000 bar

THICK FILM ON CERAMIC
- Resistant to aggressive media
- Ideal for low pressure ranges
- No filling with liquids behind the membrane
- Excellent cost-performance ratio

FOR PRESSOSTATS

PISTON
- Ideal for hydraulic systems
- Suitable for a high number of switching operations
- Resistant to abrupt pressure changes

BELLOWS
Sensitive pressure control of liquids, vapours and gases

MEMBRANE
- Measurement of liquids, vapours and gases
- Suitable for a high number of switching operations
- Resistant to abrupt pressure changes
- Resistant to overpressure

SENSORTYPEN

FÜR DRUCKTRANSMITTER

DÜNNFILM AUF STAHL
- Sehr gute Langzeitstabilität
- Erträgt hohe Medientemperaturen
- Alle medienberührenden Teile aus Edelstahl
- Sehr gute Überdruckfestigkeit, ideal für Nenndrücke bis 2000 bar

DICKFILM AUF KERAMIK
- Resistent gegen aggressive Medien
- Ideal für tiefe Druckbereiche
- Keine Hinterfüllung mit Flüssigkeiten
- Gutes Preis-Leistungs-Verhältnis

FÜR PRESSOSTATEN

KOLBEN
- Ideal für Hydrauliksysteme
- Hohe Schalthäufigkeit zulässig
- Schlagartige Druckänderungen möglich

BALG
Feinfühlige Druckregelung von flüssigen, dampf- und gasförmigen Medien

MEMBRANE
- Für flüssige, dampf- und gasförmige Medien
- Hohe Schalthäufigkeit zulässig
- Schlagartige Druckänderung möglich
- Grosse Überdrucksicherheit

TYPE DE CAPTEURS

POUR TRANSMETTEURS DE PRESSION

COUCHES MINCES SUR ACIER
- Excellente stabilité à long terme
- Supporte des températures de fluides élevées
- Toutes les parties en contact avec les médias sont en acier
- Excellente résistance à la pression, idéale pour des pressions nominales de 2000 bar

FILM ÉPAIS SUR CÉRAMIQUE
- Résistant contre les médias agressifs
- Idéale pour faibles plages de pression
- Absence de liquide de remplissage derrière la membrane
- Excellent rapport prix/performances

POUR PRESSOSTATS

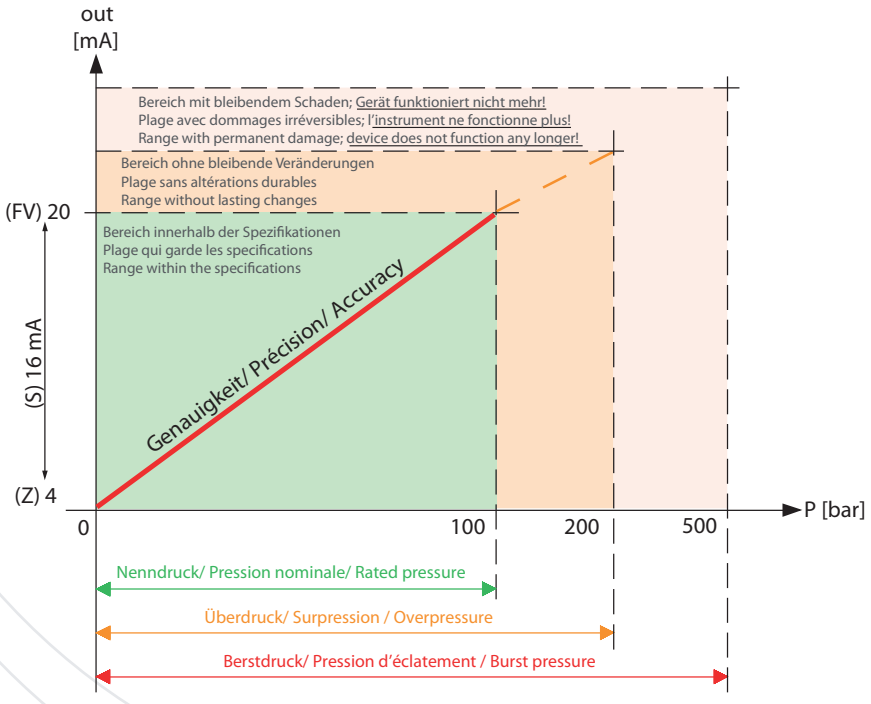
PISTON
- Idéal pour systèmes hydrauliques
- Grand nombre de manœuvres du contact
- Pointes de pression admissibles

SOUFFLET
Pour régler sensiblement la pression des liquides, vapeurs et gaz

MEMBRANE
- Mesure de médias liquides, vapeurs et gazeux
- Grand nombre de manœuvres du contact
- Pointes de pression admissibles
- Grande sécurité contres les surpressions

BEISPIEL/ EXEMPLE/ EXAMPLE

Bereich/ Plage/ Range: 0...100 bar
Sensor/ Capteur/ Sensor: Dünnfilm auf Stahl/ Couches minces sur acier/ Thin film on steel
Ausgang/ Sortie/ Out: 4...20 mA
Genauigkeit/ Précision/ Accuracy: 0.3% FS, NLH (BSL through 0)



DRUCK-CHARAKTERISTIK VON TRAFAG-SENSOREN
CARACTÉRISTIQUE DE PRESSION DES CAPTEURS DU TRAFAG
PRESSURE CHARACTERISTIC OF TRAFAG SENSORS

Rated pressure [bar]	Overpressure [bar]		Burst pressure [bar]	
	Thin-film-on-steel sensor technology	Thick-film-on-ceramic sensor technology	Thin-film-on-steel sensor technology	Thick-film-on-ceramic sensor technology
0...0.2	1.2	-	25	-
0...0.4	1.2	-	25	-
0...0.6	1.5	-	25	-
0...1.0	2	3.2	25	4.8
0...1.6	3.5	3.2	80	4.8
0...2.5	5	5	80	7.5
0...4.0	10	8	100	12
0...6.0	15	12	100	15
0...10	20	20	200	25
0...16	32	32	200	40
0...25	80	50	300	75
0...40	80	80	300	100
0...60	200	120	500	180
0...100	200	200	500	300
0...160	320	320	750	480
0...250	500	500	1000	750
0...400	800	-	1500	-
0...600	1000	-	2000	-
0...1000	1700	-	2000	-
0...1600	3000	-	4000	-
0...2000	3000	-	4000	-
0...2500	3000	-	4000	-

Delivery time | Lieferfrist | Délai de livraison
✓ Limited quantity from stock | Kleinmengen ab Lager | Quantité limité en stock
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...TERMINOLOGY

OF PRESSURE MEASURING DEVICES, i see also H72243

EMC

Electromagnetic compatibility or the ability to withstand external electromagnetic influences.

EMV

Elektromagnetische Verträglichkeit. Festigkeit vor elektromagnetischen Störeinflüssen.

CEM

Compatibilité électro-magnétique. Protection contre les nuisances électro-magnétiques.

MECHANICAL DATA

MOUNTING TORQUE
Maximum torque for mounting with pressure connection. This torque may be applied only at the pressure connection.

MATERIAL
Stainless alloys:

DIN	AISI
1.4301 =	304
1.4305 =	303
1.4306 =	304L
1.4401/1.4436 =	316
1.4404/1.4435 =	316L
1.4541 =	321
1.4542/1.4548 =	630
1.4571 =	316-Ti

MECHANISCHE DATEN

ANZIEHDREHMOMENT
Maximales Drehmoment bei Montage mit Druckanschluss: Dieses Drehmoment darf nur am Druckanschluss übertragen werden.

MATERIAL
Rostfreie Stahl-Legierungen:

DIN	AISI
1.4301 =	304
1.4305 =	303
1.4306 =	304L
1.4401/1.4436 =	316
1.4404/1.4435 =	316L
1.4541 =	321
1.4542/1.4548 =	630
1.4571 =	316-Ti

SPÉCIFICATIONS MÉCANIQUES

COUPLE DE SERRAGE
Couple maximal à montage avec raccord de pression: Ce couple ne peut être transféré qu'au raccordement de pression.

MATIÈRE
Alliage inox:

DIN	AISI
1.4301 =	304
1.4305 =	303
1.4306 =	304L
1.4401/1.4436 =	316
1.4404/1.4435 =	316L
1.4541 =	321
1.4542/1.4548 =	630
1.4571 =	316-Ti

MEASUREMENT PRINCIPLES

RELATIVE PRESSURE MEASUREMENT
The measuring result is always the deviation to the current atmospheric pressure.
e.g. 4 mA = 960 mbar (= atmospheric pressure);
Zero point (Z): 0 bar

ABSOLUTE PRESSURE MEASUREMENT
The measuring result is always the deviation to the absolute zero (vacuum). The signal size is not affected by the atmospheric pressure.
e.g. 4 mA = 0 bar (= Vacuum);
Zero point (Z): 0 bar

DIFFERENTIAL PRESSURE MEASUREMENT
Measurement of differential pressure of two different pressures. The measuring instrument has two pressure connections.

MESSPRINZIPIEN

RELATIV-DRUCKMESSUNG
Das Messresultat ist immer die Abweichung zum aktuellen Atmosphärendruck.
z.B. 4 mA = 960 mbar (= Atmosphärendruck);
Nullpunkt (Z): 0 bar

ABSOLUT-DRUCKMESSUNG
Das Messresultat ist immer die Abweichung zum absoluten Nullpunkt (Vakuum). Die Signalgrösse wird nicht vom atmosphärischen Druck beeinflusst.
z.B. 4 mA = 0 bar (= Vakuum);
Nullpunkt (Z): 0 bar

DIFFERENZ-DRUCKMESSUNG
Messung der Druckdifferenz von zwei unterschiedlichen Drücken. Das Messgerät hat zwei Druckanschlüsse.

PRINCIPES DE MESURE

MESURE PRESSION RELATIVE
Le résultat de mesure est toujours la déviation à la pression d'atmosphère actuelle.
p.ex. 4 mA = 960 mbar (= pression atmosphérique);
Point zéro (Z): 0 bar

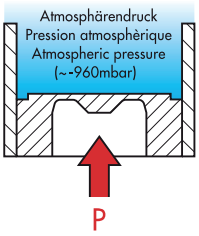
MESURE PRESSION ABSOLUE
Le résultat de mesure est toujours la déviation au zéro absolu (vide). La dimension de signal n'est pas influencée par la pression atmosphérique.
p.ex. 4 mA = 0 bar (= vide);
Point zéro (Z): 0 bar

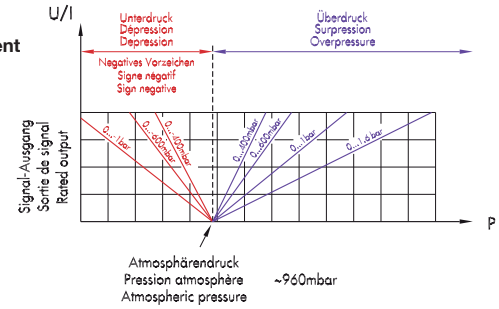
MESURE PRESSION DIFFÉRENTIELLE
Mesure de la différence de pression de deux pressions différentes. L'instrument de mesure a deux raccordements de pression.

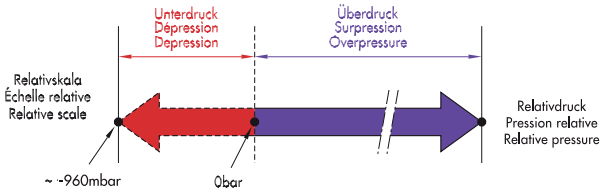
...TERMINOLOGY

OF PRESSURE MEASURING DEVICES, see also H72243

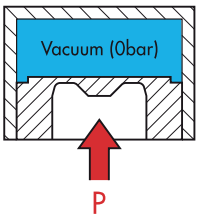
Relativ-Druckmessung
Mesure pression relative
Relative pressure measurement

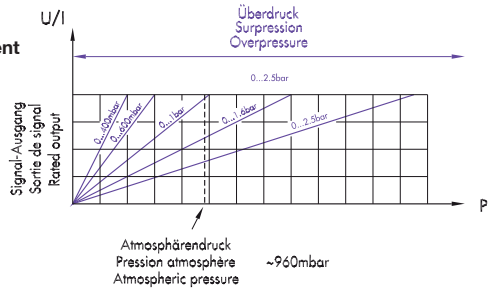


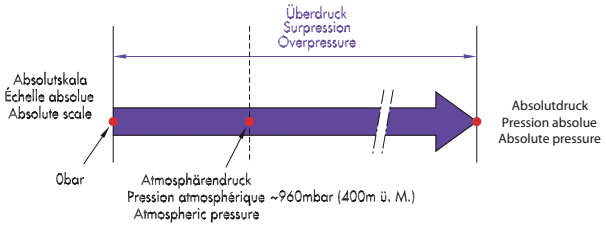




Absolut-Druckmessung
Mesure pression absolue
Absolute pressure measurement







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CONVERSION OF PRESSURE UNITS

see also www.trafag.com ‚Unit Calculator'

Einheit Unité Unit	bar	mbar	Pa N/m^2	kPa kN/m^2	MPa MN/m^2	at kp/cm^2	atm	mmWS mmCE	mWS mCE	Torr mm Hg	psi lbf/in^2
1 bar	1	1000	10^5	100	0.1	1.02	0.987	$1.02 \cdot 10^4$	10.2	750	14.5
1 mbar	0.001	1	100	0.1	10^{-4}	$1.02 \cdot 10^{-3}$	$0.987 \cdot 10^{-3}$	10.2	0.0102	0.75	0.0145
1 Pa 1 N/m^2	10^{-5}	0.01	1	0.001	10^{-6}	$1.02 \cdot 10^{-5}$	$0.987 \cdot 10^{-5}$	0.102	$1.02 \cdot 10^{-4}$	0.0075	$1.45 \cdot 10^{-4}$
1 kPa 1 kN/m^2	0.01	10	1000	1	0.001	0.0102	$9.87 \cdot 10^{-3}$	102	0.102	7.5	0.145
1 MPa 1 MN/m^2	10	10^4	10^6	1000	1	10.2	9.87	$1.02 \cdot 10^5$	102	7500	145
1 at 1 kp/cm^2	0.981	981	$0.981 \cdot 10^5$	98.1	0.0981	1	0.968	10^4	10	736	14.22
1 atm	1.013	1013	$1.013 \cdot 10^5$	101.3	0.1013	1.033	1	$1.033 \cdot 10^4$	10.332	760	14.696
1 mmWS 1 mmCE	$0.981 \cdot 10^{-4}$	0.098	9.807	$9.81 \cdot 10^{-3}$	$9.81 \cdot 10^{-6}$	10^{-4}	$0.968 \cdot 10^{-4}$	1	0.001	0.0736	$1.422 \cdot 10^{-3}$
1 mWS 1 mCE	0.0981	98.07	9807	9.81	$9.81 \cdot 10^{-3}$	0.1	0.0968	1000	1	73.6	1.422
1 Torr 1 mmHg	$1.333 \cdot 10^{-3}$	1.333	133.323	0.133	$1.333 \cdot 10^{-4}$	$1.36 \cdot 10^{-3}$	$1.316 \cdot 10^{-3}$	13.595	$1,359 \cdot 10^{-2}$	1	$1.934 \cdot 10^{-2}$
1 psi 1 lbf/in^2	$6.895 \cdot 10^{-2}$	68.95	6895	6.895	$6.895 \cdot 10^{-3}$	$7.031 \cdot 10^{-2}$	0.06805	703.1	0.7031	51.7	1

CONVERSION OF TEMPERATURE UNITS

see also www.trafag.com ‚Unit Calculator'

[°F] to [°C]

Formel/ Formule/ Form:
°C = 5/9•(°F-32)

°F	°C	°F	°C	°F	°C
-100	-73.3	105	40.6	315	157.2
-95	-70.6	110	43.3	320	160.0
-90	-67.8	115	46.1	325	162.8
-85	-65.0	120	48.9	330	165.6
-80	-62.2	125	51.7	335	168.3
-75	-59.4	130	54.4	340	171.1
-70	-56.7	135	57.2	345	173.9
-65	-53.9	140	60.0	350	176.7
-60	-51.1	145	62.8	355	179.4
-55	-48.3	150	65.6	360	182.2
-50	-45.6	155	68.3	365	185.0
-45	-42.8	160	71.1	370	187.8
-40	-40.0	165	73.9	375	190.6
-35	-37.2	170	76.7	380	193.3
-30	-34.4	175	79.4	385	196.1
-25	-31.7	180	82.2	390	198.9
-20	-28.9	185	85.0	395	201.7
-15	-26.1	190	87.8	400	204.4
-10	-23.3	195	90.6	405	207.2
-5	-20.6	200	93.3	410	210.0
0	-17.8	205	96.1	415	212.8
5	-15.0	210	98.9	420	215.6
10	-12.2	215	101.7	425	218.3
15	-9.4	220	104.4	430	221.1
20	-6.7	225	107.2	435	223.9
25	-3.9	230	110.0	440	226.7
30	-1.1	235	112.8	445	229.4
32	0.0	240	115.6	450	232.2
35	1.7	245	118.3	455	235.0
40	4.4	250	121.1	460	237.8
45	7.2	255	123.9	465	240.6
50	10.0	260	126.7	470	243.3
55	12.8	265	129.4	475	246.1
60	15.6	270	132.2	480	248.9
65	18.3	275	135.0	485	251.7
70	21.1	280	137.8	490	254.4
75	23.9	285	140.6	495	257.2
80	26.7	290	143.3	500	260.0
85	29.4	295	146.1	505	262.8
90	32.2	300	148.9	510	265.6
95	35.0	305	151.7	515	268.3
100	37.8	310	154.4	520	271.1

[°C] to [°F]

Formel/ Formule/ Form:
°F = 9/5•°C+32

°C	°F	°C	°F	°C	°F
-100	-148	105	221	315	599
-95	-139	110	230	320	608
-90	-130	115	239	325	617
-85	-121	120	248	330	626
-80	-112	125	257	335	635
-75	-103	130	266	340	644
-70	-94	135	275	345	653
-65	-85	140	284	350	662
-60	-76	145	293	355	671
-55	-67	150	302	360	680
-50	-58	155	311	365	689
-45	-49	160	320	370	698
-40	-40	165	329	375	707
-35	-31	170	338	380	716
-30	-22	175	347	385	725
-25	-13	180	356	390	734
-20	-4	185	365	395	743
-15	5	190	374	400	752
-10	14	195	383	405	761
-5	23	200	392	410	770
0	32	205	401	415	779
5	41	210	410	420	788
10	50	215	419	425	797
15	59	220	428	430	806
20	68	225	437	435	815
25	77	230	446	440	824
30	86	235	455	445	833
32	89.6	240	464	450	842
35	95	245	473	455	851
40	104	250	482	460	860
45	113	255	491	465	869
50	122	260	500	470	878
55	131	265	509	475	887
60	140	270	518	480	896
65	149	275	527	485	905
70	158	280	536	490	914
75	167	285	545	495	923
80	176	290	554	500	932
85	185	295	563	505	941
90	194	300	572	510	950
95	203	305	581	515	959
100	212	310	590	520	968

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FLUID RESISTANCE GUIDE

SUBJECT TO CHANGE

CODES: S - SATISFACTORY F - FAIR U - UNSATISFACTORY T - TEST FOR SPECIFIC APPLICATION

RESILIENT MATERIALS									PLASTICS													METALS														
BUNA 'N' (NBR)	ETHYLENE PROPYLENE (EPDM)	HYPALON	NEOPRENE (CR)	URETHANE	SILICONE	VITON (FKM/FPM)	BUTYL	FLUOROSILICONE	HYTREL	CELCON	DELRIN	LEXAN	NYLON	POLYSULFONE	PVC	TEFLON	POLYPROPYLENE	POLYETHYLENE	POLYPHENYLENE SULFIDE	POLYCARBONATE	ULTEM	ST. ST. DIN 1.4435/1.4404	STEEL	ST. ST. AISI430	ST. ST. DIN 1.4301/1.4305/1.4542	SILVER	49 - NICKEL-IRON	MONEL	LEAD	IRON	INCONEL	COPPER	BRONZE	BRASS	ALUMINUM	
U	S	T	U	U	U	U	F	U	F	S	T	U	U	U	U	S	U	U	S	U		S	U	F	F	S		S	S	S	T	U	U	U	S	Acetaldehyde
S	S		F	U	F	F	F	F					S	U		S	S	S	S	U		S	U	S	S	S		U	S	F		U	U	U	U	Acetamide
U	S		U	U	U	U	T	U	U	S					U	S								S	S			S		S	S	S	S	F	F	Acetate, Amyl
T	S		T	U	T	T	T	U	U	T	T	S	S	S	T	S	F	T	S	S	S	S	U	F	S	F		F		U	U	U	U	U	F	Acetic acid, 10%
T	F		F	U	S	U	F	U	U	U	U	S	U	T	U	S	F	T	S	T	T	F	U	F	F	S	U	S	F	U	U	U	U	U	S	Acetic acid, Glacial
U	F	T	T	U	U	U	F	U	U	F	U		U	U	U	S	T	U	S	U		T	U	U	T	S		S	U	T	S	U	U	U	S	Acetic anhydride
U	S	U	U	U	U	U	F	U	U	F	F	U	S	U	U	S	S	T	S	U	U	S	S	F	F	S		S	F	S	S	S	S	S	F	Acetone
S	S	T	F		U	S	T	U	T		S	T	S	U	S	S	U	F	S	U		S	S	S	S	U		S	U	S		U	U	T	S	Acetylene gas
U	U		U		U	S	U						U			S						U	U	U	U			U	U	U					F	Acetylene tetra-chloride
U		S	U			S																S	T	T	T	T									S	Acrylic acid
U	S	S	F	U	U	S	F	T	T		S		S	S	S	S		T	S					F	S	S		S				S	S	F		Alcohol amyl
F	S	S	F	T	F	F	F	T	T	S	S		S		S	S		T			S		S	F	F	S		F	F	F	S	F	F	F	T	Alcohol ethyl (Ethanol)
S	S	S	F	U	S	U	F	S	T	S	S		S	U	S	S	S	S			S	S	S	F	S	S		S	F	S	S	S	S	S	T	Alcohol methyl (Methanol)
U	U	U	U	U	U	S	U	T					S			S								S	S							S		S		Alkazine
S			S	S	S								S			S												S				S	S	S	S	Alumina
S	S	S	S	S	S	S	F	T	F	F	S	S	S	S	S	S	S	S	S	T		U	U	U	U	F		F	U	U	S	T	T	U	U	Aluminum chloride
S	S	S	S	S	S	S	F	T		U	U		S	S	S	S	S	F	S			U	T	U	U	F		F	F	T		T	F		S	Aluminum uoride
S	S	S	S	S	S	S	T	T		F			S	T	S	S	S	S		U		F	F	F	F	S		F		F		F	F	F	F	Aluminum hydroxide
S	S		S	S	T	S	F						S		S	S	S	F		T		F	U	U	T	F		T	F	U		T	T	T	F	Aluminum potassium sulfate
F																S							U	T	T			F			F			U	F	Aluminum potassium 10%
F	F		F	S	T	F	F									S						T	U	U	U	T		U	F	U	U	T	T	U	U	Aluminum sodium sulfate
S	S	S	S	S	S	S	F	T	T	F	S	S	U	S	S	S	S	F	S	S		T	U	U	T	F		T	F	U	T	T	T	T	U	Aluminum sulfate (Alum)
F	T	U	S	U	U	U	F	U	U	U	U		S	F	T	S	F	T	S	U		S	S	S	S	T	S	U	F	S	S	T	U	U	F	Ammonia
S	F		S	S	S					F	T	T	S	S	S	S		F				F	F	F	F	F		S	F	F	F	U	U	U	F	Ammonium bicarbonate
S	T		T			U	T			F			T		S	S	F	F				F	U	U	U	F		F		U		U	U	U	U	Ammonium bromide
U	S		S		U	S	F			S	S		T	S	S	S	S	F	S			T	F	F	F	S		F		F	T	U	U	U	F	Ammonium carbonate
S	S		S	S	U	S	F	U	F	F	S	S	S	S	S	S	S	T	S	S		U	U	U	U	F		U	T	U	S	U	U	U	U	Ammonium chloride
T	S	S	S	U	S	F	T	T	U	S	U	U	S	S	S	S	S	S	S	U	T	S	U	S	S	U		U			S	U	U	U	F	Ammonium hydroxide
S			S			S							S			S	S						U		F											Ammonium monophosphate
S	S	S	S	T	U	F	S	U	F	F	S	S	S	S	S	S	S	S	S	U		S	T	F	S	S		U	U	F	S	U	U	U	T	Ammonium n trate
S		S	S	S	S	U							S			S							F	F	F			U		F	S	U	U	U	F	Ammonium nitrate hydroxide 25%
F	S			U	U	S	S									S	S	T				S	U	S	T	U	S	U			S	F	F	U	U	Ammonium persulfates 5%
S	S	S	S	S	S	S	F	U	F	F	F	S	S	S	S	S	S	S	S	S		T	S	F	S	F		F	F	T	S	U	F	U	T	Ammonium phosphate
S	S	S	S		S					F	F	U	U	S	S	S	S	S	S				T	U	T	S		F	F	T	F	U	U	U	U	Ammonium sulfate
S			S	S									S			S							U	U	T	F		U	F	U		U	U	U	U	Ammonium sulfite
S			S		T											S							T	S	S			S	S	S		F		T	F	Ammonium triphosphate
U	S	U	U	U	U	U	T	U	U	F	U	U	T	U	U	U	U	U	S	U		S	F	F	F	S		S			S	U	S	S	S	Amyl acetate
U	F	F	F	U	U	U	F	F	U	T	T	S	S	U	U	S						S		F	F	S		S	S	S		T	T	T	U	Aniline dyes
U	F	T	U	U	U	F	U	T								S	U	U	U	U		U	U	U	U	T		F			U	T	U	U	U	Aniline hydrochloride
F	F		F			S																														Animal fat
T			T										S		S	S							U	U	U			F			F			U	U	Antimony trichloride
S			S		S					S						S												S								Antioxidents
F	T		S		F	F			S	S			S				S					S	F	S	S	S	S	S	T	T	T	T	T	T	T	Argon gas
T	U		U		U	S				S			S		U	S							S	S	S	S	S	S	S	S		S	S	S		Aromatic hydrocarbons
S	S	S	S	T	S	S	F	S					S	S		S	S	F	S	T		F	T	F	T	U		U	F	U	U	T	T	T	U	Arsenuc acid
S	U		S		S	U	U									S						U	T		U	F		S				U			T	Arsenic trichloride
F	U	U	F	S	U	S	U	F	S	S	S	F	F		S	S	S	F				S	S	F	S			S		S	S	S	S	F	S	Asphalt
S	S	S	S	S	S	S	F	S	F	S	S	S	S	S	S	S	S	F	S	S		U	T	S	S	S		S			S	F	F	U	U	Barium chloride 5%
S	S	S	S	U	S	S	F	S	F				S	S		S	S	F	S	U		T	T	S	S	S		S			S	U	U	U	U	Barium hydroxide
F	F		S		T	S	T	S			S	S		S	S	S	S	F		U		F	T	S	S	S		T			F	U	U	U	F	Barium nitrate
U	S	S	S	S	S	S	F	S		S			U	S	S	S	S	F				F	U	F	S	U		S				U	U	U	U	Barium sulphide
S	S		F	U	S	S	S	S	F	S	S	S	S		S	S	S	S	S	S		S	S	F	S			S		S	S	S	F	F	S	Beer
S	S	S	S	S	S	S					S	S	S		S	S	F	F				S	S	F	S		S	S		S	S	S	S	F	S	Beet sugar liquid
U	U	U	U	U	T	F	U	F	U	F	T	U	S	U	U	S	U	U	S	U		F	S	S	S	S		F	F	S	S	S	S	S	S	Benzene benzol (Benzene)
U	S	U	U	U	U	U	F	U	F				T	U	U	S	U	U	S	U		T	F	F	F	U		F			F	T	T	T	T	Benzaldehyde
U	U	T	U	U	U	F	U	F	U	F	T		F	U	S	S	T	F	S	S		F	F	F	F	S		F	U	U	S	T	T	F	T	Benzoic acid
S	F	F	S	U	S	S	F	T	T				U		S	S	S					T	T	T	F			F	U	T		U	U	U	U	Black sulfate liquor
T	U	U	T	U	T	T	U	T	T		S	S	T		S	S							S		T			T	U	S		U				Blast furnace gas
S	S		S		S	S							S			S								U	T			U				F	F	U	U	Bleaching powder, wet
U	T		T		T	U				S		S		S	U	S						S	U	S	S			S			S				T	Blood
F	S	F	T	U	S	S				F	F	U	S	S	S	S	S	S					S	S	S			S		S	S	F	S	F	U	Borax
S	S	S	T	U	S	S	F	T	F	U	U		T		S	S	S	S	S	T		F	U	F	T	S	S	T	F	U	S	T	T	T	T	Boric acid
U	S		F	U	U	U	F	U		T											U			S	S	S						S	S	S		Brake fluid (non-petroleum)
S	S	S	S		S	S				S	S	S	S	S	S	S		T						U				S		F	S	F	F	U		Brine
U	U	U	U	U	U	F	U	T	U	U	U	U	U	U	U	S	U	U	U	U		U	U	U	U	S		T	T	U	F	T	T	T	U	Bromine, dry
U	U	U	U	U	U	F	U	T	U	U	U	U	U	U	U	S	U	U	U	U		U	U	U	U	F		U	U	U	U	U	U	U	U	Bromine, wet
S	S	T	T	S	U	S				S			S	U		S	U	U	S	U		S	S	S	S	T		S		S		S	S	S	T	Butadiene (gas)
F	U	F	F		T	S	U	S	F	S	S	U	S		T	S	U	U	S	U		S	S	S	S	S		S	S	S	T	S	S	S	S	Butane
S	F	S	F	U	F	S	F	T	T				S	S		S					S	S	S	S	S	F		S				S	S	S	S	Butanol
S	S	S	F	S	T	S		T		S			S			S	S	S		S		S	U	S	F			S		U	S	U	U	U	S	Buttermilk
U	T	U	U	U	U	U	U	U	U	F	F	U	S	U	U	S	U	U	S	U		S	S	F	F	S		F	F	F		F	F	F	S	Butyl acetate
S	F	S	S	F	T	S				S			S			S	S	T					S		F			S		S		S	S	S	S	Butyl alcohol
T	U	U	U		U	S	U	T	U							S						F	F	F		F						F	F	F	F	Butyl stearate
U	F	U	U		S	F	T	T	T	U	U		U	U		S	T		S	U		F	T	U	U	S		T	U	U	S	T	T	U	T	Butyric acid
F	S	U	F	U	U	U	F	U														T	T	F	T	F						F	F	F	U	Calcium acetate
S	U	S	S		S	F	U	T	U	U	U	U	U	S	S	S	S	S	S	U		T	U	U	F	F		U	F	U	U	T	F	U	U	Calcium bisulfite
																S	S						S		F			F		S		U			U	Calcium carbide
S	S	S	S	U	S	S	T	T		S	S		S		S	S	S	S		U		F	F	F	S	S		F	U	F	T	F	S	F	S	Calcium carbonate
F	S		F			S	F			F	S		U		S	S	S	S				F	F	F	F	T		T		F	T	T	U	T	T	Calcium chlorate
F	S	S	S	S	S	S	F	T	F	F	S	S	U	S	S	S	S	S	S	U		T	S	T	F	S	S	T	U	T	S	T	F	T	U	Calcium chloride
																S						T	T		F	S						F	F	U	T	Calcium uoride
S	T	S	T	U	S	S	T	T	T	S	S	S	S	S	S	S	S	S		U		F	F	F	F	S	S	F	U	F	S	F	F	U	U	Calcium hydroxide
U	S	S	U	U	S	F	T	F	T	F	F		T	S	S	S	S	S	S	U		U	U	U	U	T		U	U	U	U	U	U	U	U	Calcium hypochlorite
S	S	S	S	U	F	S	T	T		S			T	S	S		S	S	S	T		T	T	F	T	F						F	F	F	T	Calcium nitrate
S	S	S	U	S	S	S	T			S			S	S	S	S	S		S	S		T	T	F	F	S		F	F	F		U	F	U	F	Calcium sulfate
S	S	S	S	S	F													U					F	F	F	U						U	U	U	T	Calcium sulphide
S	T	S	S	U	S	S	F	T		S	S		S			S						F	U	F	S			S		U			U			Calgon
S			S			S										S							S													Caliche liquid
S	S	S	S	U	S					S	S	S		S	S	S	S							F	S			S				S	S	F	F	Cane sugar syrups
U	F	U	U		U	F				U			S			S							T	F	S	S		F	F	T		F	S	F	T	Carbolic acid (Phenol)
U	U	U	U	S		S				S	S	S	S	S	U	S	U						S	F	F	F		F	F	F	S	F	F	F	F	Carbon bisulfide
S	T	T	T	S	U	T	T	T	F	S	S		U	S	S	S	S	S	S	T		S	S	S	S	S		S	S	S	S	S	S	S	S	Carbon dioxide dry
U	U	U	U	U	U	S	U	T	U	F	F	U	U	U	U	S	U	U	S	U		T	S	S	S	F		F			S	U	F	U	S	Carbon disulfide
F	S		T		S	S	T	F	F	S	T		T		S	S	S	S	S			S	S	F	S	F		S	S	S	S	S	S	S	S	Carbon monoxide
U	U	U	U	U	U	S	U	U	U	F	F	U	U	U	T	S	U	U	T	U	S	F	T	F	F	F		F	T	U	S	T	F	T	U	Carbon tetrachloride
S			S		S	S							S			S								S	S			S				T	F	F	F	Carbonated water

Due to the numerous different application possibilities Trafag cannot accept any guarantee for the correctness of these recommendations. We therefore suggest that for a particular application you carry out tests to verify the fluid resistance.

CODES: S - SATISFACTORY F - FAIR U - UNSATISFACTORY T - TEST FOR SPECIFIC APPLICATION

RESILIENT MATERIALS									PLASTICS													METALS														
BUNA 'N' (NBR)	ETHYLENE PROPYLENE (EPDM)	HYPALON (CR)	NEOPRENE	URETHANE	SILICONE	VITON (FKM/FPM)	BUTYL	FLUOROSILICONE	HYTREL	CELCON	DELRIN	LEXAN	NYLON	POLYSULFONE	PVC	TEFLON	POLYPROPYLENE	POLYETHYLENE	POLYPHENYLENE SULFIDE	POLYCARBONATE	ULTEM	ST. ST. DIN 1.4435/1.4404	STEEL	ST. ST. AISI430	ST. ST. DIN 1.4301/1.4305/1.4542	SILVER	49 - NICKEL-IRON	MONEL	LEAD	IRON	INCONEL	COPPER	BRONZE	BRASS	ALUMINUM	
T	S	S	S	T	S	S	F	T	U	S			F	S		S	S	S	S	F		S	U	F	F	F		S	U	U	S	T	T	F	F	Carbonic acid
S	F	S	S	F	S					S	S	S	S	S	S	S	S						S	T	S			S		S	S	S	S	S	S	Castor oil
											S																									Cellosolve (see Ethyle acetate)
U	S	U	U	U	T	T										S							S	S	S	S	S	S	S	S		F	S	S	F	Cellulube
S	U	T	F	T	T	S					F	S	S		S	S							S	T	S			S		S		F	T	F	S	China wood oil (Tung)
U	U		U	U	U	S	U	T	U													T	T		T	T						T		T	T	Chlordane
F			S										U			S								S	S			T		U					U	Chlorides, organic
U										U	U					S	U	T	U			U	U	U	U	U		U			U			U	U	Chloric acid
F	F			S		F							U			S	F							U	U									U		Chlorinated water
U	U	U	U	U	U	S	U	T	U			U	U	U	T	S	U					T	F		F	T						T	S	T	U	Chlorinated solvents
U			U		F	S				U	U	U	U	U	T	S	T							F	U			S	F	U		T	T	U		Chlorine anhydrous liquid
U	U	U	U	U	U	F	U	T		U	U	U	U	U	U	S	U	U	U	U		T	T	U	U	F		T	F	T	T	T	T	U	U	Chlorine, gas
U	U	U	U	U	U	T	U	T		U						S	U					U	U		U	S						U	U	U	T	Chlorine, dioxide
U	U	U	U	U	U	U	U	U		U	U	U		U	U	F						T	S	T	T			S				T	T		T	Chlorine trifluoride
U	F	T	U	U	U	S	T	U	U	U	U		S	U		S	S	U	S	U		T	U	U	U	U		F			F	U	F	U	U	Chloroacetic acid
U	U	U	U	U	U	S	U	T	U	S	S	U	T	U	U	S	U	U	S	U		T	T	T	F	F		F		T	T	F	F	F	S	Chlorobenzene
U	U	U	U	U	T	T	U	U	U	F	F	S	S	U	U	S	U	U	U	U	F	T	T	F	S	S		S	F	T	T	T	F	T	U	Chloroform
U	U	U	U	U	U	U	U	U	U	U	U		U	U		S	U	U	U	U		U	U	U	T			F			F	U		U	F	Chlorosulfonic, acid, diluted
U			U	U		T	U	T														T	T	T	T	F						T	U	T	T	Chlorothene (trichloroethane)
U	F	U	F		S	S					U		S		T	S							U	U	U			F		U		U	U	U	U	Chlorox
F					S	T				U						S												S					U	U		Choline chloride
U	F	U	U	U	F	F				U																										Chrome plating solution
U	U	F	U	U	T	U	T	T	U	U	U		U	U	T	S	T	T	T	T		T	U	U	T	U		U	F	F	F	U	U	U	U	Chromic acid
S	S		F	T	T	S	F						S			S	S					T	U	U	F			T	F	U		T		T	U	Chromium-potassium sulfate
													S			S							U	F	F			T	F	U		F		F		Chromium sulfate (basic)
S	S		S	U	S	S	U	T	T	S			T			S	S					S	U	S	S			S				S	S	U	F	Cider
S	S	S	S	S	S	S	S	T	F	S			S	T	S	S	S	F	S	T	T	T	U	T	T	T		T	U	U	F	U	U	U	T	Citric acid
T	U		U	U	U	T	U	T	U				U			S						S			S			S							S	Coal tar
S	F	U	U	U	U	S	F	T		S			T			S	T					F	F	S	S			S		S			T		T	Cocoanut oil
T	S	U	F	S	F	S	F	T		S			T			S	T			T			U			U		S		U		U	U	U	S	Cod liver oil
S	T		S	U	S	S	T	T		S			S			S	T			T		S		S	S			S				S	S	S	S	Coffee
T	U	U	T	U	T	F	U	T			S	T	T		S	S	T					T	S	S	S	S		S	U	S		T	T	U	S	Coke oven gas
	T					S				S														S	S							S		S		Cooking oil
T	S	U	F	U	U	U	T	U								S						T	U	F	F	S		F		U		F	T	U	U	Copper acetate
U	S		U	U	U	U		U		S	S	U			U	S						T	S	S	S	U				S		U	U	U	U	Copper ammonium acetate
S	S	F	F	S	S	S	F	T	T	U	U	U	U	S	S	S	S	S	S	T		T	U	U	U			U	U	U	U	U	U	U	U	Copper chloride
S	S	S	S	S	S	S	T	T		S			T	S		F	S	S	S	U		T	S	S	S	S		F		S	U	U	U	U	U	Copper cyanide (elect. pl. sol.)
S	S		S	T	S	S	F			S	S	S	S	S	S	S	S	S	S	U		F	U	F	F	F		U		U	U	U	U	U	U	Copper nitrate
S	S	S	S	S	S	S	F	T	F	S	S	S	F	S	S	S	S	S	S	T		F	U	F	F	F		T	F	U	U	U	U	U	U	Copper sulfate
S	S	S	S	S	S					S	S	S	S	S	S	S		S					U	F	F			F	F	U		U			U	Copper sulfate (elect. pl. sol.)
S	U	F	F	T	S	S	F	T	S	F	F		T	S	S	S	S			U		S	S		S	S		S	S	S		S	U	F	S	Corn oil
S	T		S	T	S	T		T		S						S							S	F	S	S	F	T	S	S		S	S	F	F	Corn starch slurrys
S	T	S	U	T	S	F	U	T	T	S	S		S	S	S	S	S	S				S	S	S				S	S	S	S	T	S	U	S	Cottonseed oil
U	U	U	U	T	U	S	U	T	U	U	U		U	U	T	S	U	U	S	U		F	S	F	S			F	U	F	S	F	S	F	S	Creosote
U	U	U	U	U	U	F	U		U	U	U		U			S	U	U		U		T	U	F	S	F		F	U	F		F	F	U	F	Cresylic acids (alkyl phenols)
F					S																		U	U	U			U			U			U	U	Cupric chlorides 5%
U	S	U	U	U	T	S	U	U	T	F	F	U	T	F	U	S	F	U	S	U		T	U		T	T		T			T	T	T	T	F	Dibutyl phthalate
S	U		U	U	U	S	U	T	T	S			S	S		S	S	U	S	S		S	S	S	S	S	S	S	S	S	S	S	S	S	S	Diesel fuel
U	U			U	U	S				S			S			S		U				S	S	S	S	S	S	S	S	S	S	S	S	S	F	Diesel oil, light
U	U	U	U	S	U	U				F													F	F	F			F		F		F	F	F	F	Diethyl ether
U	U		U	U	U	F	U	U	U	T	T		U			S	T	U		U		F	U	T	F	T		S			F	T		U		Dichlorethane
																S						F	U		F			S	F	F		F	F	F	F	Difluoroethane (dow chem. #200)
F			S		S					S			S		S	S	S							S	S	S		S		U					S	Distilled water
F	U		T	S	U	S	U	T	F	S			S			S						S	S	S	S	S	S	S	S	S	S	S	S	S	S	D.T.E. Lubricating oil
U	U	U	U	U	U	S	U	S	T	S	T		U	U		S	U		S	T		S	S	S	S					U			T	T	T	Dowtherm A or E
T			S	F					T	S	S	T	S		U	S						S	S	S	S	S	S	S		S	S	S	S	S	T	Enamel
S	U		F	S	S	S	U	T					S			S						S	S	S	S	S	S	S	S	S	S	S	S	S	S	Esso # 90 line
S	U	F	F	U	U	S	U	T		S	S	U	S		U	S	U					S	S	S	S	S		S		S		S	S	S	S	Ethane
U	U	U	T	U	U	U				S			S		U	S	U						S	F	S	S		F	F	F	S	F	S	F	S	Ether
U	T	U	U	U	U	U	T	U		F	F	U	S	U	U	S	S	U	S	U	U	S	S	F	S	S		F		T	T	F	S	F	T	Ethyl acetate
U	U	U	U	U	U	F	U	F		F	F		S	U		S	U	U		U		F	T	F	F	S						F	F	F	T	Ethyl benzene
S	F	F	F	F	F	U	T	U	T	S	S	U	S		T	S						F	T	F	F	S						F	F	F	F	Ethyl cellulose
S	S	U	U	U	U	S	T	T	U	S	S	U	S	U	U	S	U	U	S	U		T	T	T	T	S		F		F	T	T	T	T	T	Ethyl chloride
U	U	U	F			S				T													F	F	F	U						U	U	U	F	Ethyl metcaptan
U	S		S	U	T	U	T	U		S			S			S	T					U	F					T				F	F	F		Ethyl sulfate
S	U		U	T	U	S	T	T		S			S		F	S						S	S	S	S	S		S		S		S	S	S	S	Ethylene
										S					U		U	U					T			F		F	F	T		T	T	T	T	Ethylene bromide
	T	T	U	U	T	T				S				U		S			S				T	T	T	F		F		T		T	F	F	T	Ethylene chloride
U	U	U	U	U	U	S	U	U		S			S			S	T					T	U	T	T	F		T		U		T	T	T	U	Ethylene dibromide
U	U	U	U	U	U	T	U	U	U	T	T		S	U	U	S	U	U	S	U		F	T	T	F	S		F	F	T	T	U	F	F	F	Ethylene dichloride
S	S	S	F	U	T	S	S	S	T	S	S		S	S	S	S	S	S	S			F	S	F	S	S		F	F	F	S	F	F	F	F	Ethylene glycol
U	T	U	U	U	U	U	T	U	T	S	S		S	S	U	S	U	U	U	U		F	S	S	F	T		S		F		T	T	T	U	Ethylene oxide
F																							T	F	S	S		F	F	T		F	S	F	U	Embalming fluid
																																				Ethanol (see alcohol-ethyl)
S	T	U	U		T	S				S			S		S	S	T						U	S	S	S		T	U	U	S	U	U	U	S	Fatty acids
S	S	F	F	S	F	S	F	T	F	F	S	S	U	S	S	S	S	S	S	S		U	U	U	U	U		U	U	T	U	U	U	U	U	Ferric chloride
T	S	S	S	S	U	S	T	T		F			T	S	S	S	S	S	S	T		S	U	F	S	U		U		U	U	U	U	U	U	Ferric nitrate
S	F		S	T	S	S	F	T	T	F	F		S	S	S	S	S	S	S	T		T	U	T	T	T		T	F	U	F	U	U	U	U	Ferric sulfate
			T			T										S							U			U			F	U		U	U	U	F	Ferrous ammonium sulfate
S	S		S	T	S	S	F		T	F	F	S	U	S	S	S	S	S	S	U		U	U	U	U	F		U	U	U	U	T	U	T	U	Ferrous chloride
S	S		S	T	S	S	F	T	T	F	F	S	S	S	S	S	S	S	S	T		F	U	S	S	U		T	T	U	F	T	T	U	S	Ferrous sulfate
S	U		F	S	T	S		T					S			S	S	S		T		S	S	S	S			S		S		S	S		U	Fish oil
S	S	S	S	U	T	S	U	T	U					S		S	S	F	S			T		S	S			T			T		T		T	Fluoboric acid
U	T	T	U	U	U	T	U		U	U	U		U	U		T	U	U	U	U		T	U	F	F	S		S	F		F	T	T	T	F	Fluorine
S	S	S	S	U	S	U	T	U	F	U	U			S		S	S	T	S			T	U	T	T	T		S			T	T	U	U	U	Fluosilic acid
S	S	T	T	U	S	U	T	U	U	S	T	U	S	T		S	S	T	T	S		S	T	F	S	S		F	U	T	S	F	F	F	S	Formaldehyde
U	F	S	S	U	S	U	F	U	U	U	U	S	U	F	T	S	S	U	S	T	T	F	U	U	T			F	U	U	F	T	U	T	U	Formic acid
F	U	S	F	U	U	U	U	F	T	S			S	U	T	S	U	U	U	U		S	U	S	S	S		F		U	T	S	S	S	S	Freon 11
S	U	S	S	S	U	T	U	U	T	S			S	U	S	S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 12
S	U	S	S	U	U	U	U	U		S			S	U		S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 13
U	U	T	T		U	U	U			S			S	U	U	S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 21

Wegen der Vielzahl von Verwendungsmöglichkeiten kann Trafag keine Gewährleistung für die Richtigkeit dieser Empfehlungen übernehmen. Für den Einzelfall sollten Sie deshalb praktische Versuche durchführen.

A cause de la multiplicité de possibilités d'utilisation, Trafag ne peut pas se charger de garantie pour la justesse de cette recommendation. Nous vous proposons donc de faire des épreuves pour vérifier la compatibilité.

Catalogue 2012

General Information

Allg. Informationen

Informations générales

FLUID RESISTANCE GUIDE

SUBJECT TO CHANGE

CODES: S - SATISFACTORY F - FAIR U - UNSATISFACTORY T - TEST FOR SPECIFIC APPLICATION

RESILIENT MATERIALS												PLASTICS										METALS														
BUNA 'N' (NBR)	ETHYLENE PROPYLENE (EPDM)	HYPALON	NEOPRENE (CR)	URETHANE	SILICONE	VITON (FKM/FPM)	BUTYL	FLUOROSILICONE	HYTREL	CELCON	DELRIN	LEXAN	NYLON	POLYSULFONE	PVC	TEFLON	POLYPROPYLENE	POLYETHYLENE	POLYPHENYLENE SULFIDE	POLYCARBONATE	ULTEM	ST. ST. DIN 1.4435/1.4404	STEEL	ST. ST. AISI430	ST. ST. DIN 1.4301/1.4305/1.4542	SILVER	49 - NICKEL-IRON	MONEL	LEAD	IRON	INCONEL	COPPER	BRONZE	BRASS	ALUMINUM	
U	T	T	T	U	U	U	U	U	U	S			S	U	U	S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 22
U	T		F			U	T			S			S	U		S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 31
S	T	S	S				T			S			S	U		S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 32
F	U	F	T	F	U	T	U			S			S	U		S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 112
S	U	S	S		U	U	U	U	S	S			S	U		S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 113
S	U	S	S	T	U	F	U	F	T	S			S	U		S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 114
S	S		S		U	T	T			S			S	U		S	U	U	U	U		S	U	S	S	S		F		U	S	S	S	S	S	Freon 115
S			S							S			S			S							U	S	S	S				U		S	S	S	S	Freon 218
U			S			U				S			S	U		S	U	U	T	U		S	U	S	S	S		T		U	T	S	S	S	S	Freon 502
S	S		S	U	U	S	S	U	U	F	F		U	U		S	U	U	U	U		S	T	S	S	S		F			S	S	S	S	T	Freon 503
S													S											S	S							S		S		Freon 13B1
S			S							S			S			S							U	S	S	S				U		S	S	S	S	Freon 6316
S			S							S			S			S							U	S	S	S				U		S	S	S	S	Freon 6318
S	U	S	S	T	U	S	U	U	S	S	S		U	T		S	T	U		T	S	S	T	S	S	S		F			S	S	S	S	T	Freon TF (solvent)
T	T	S	T	S	U	S	T			S	S					S	T	U		T		U	U	S	T						S	S	S	S	T	Freon TWD 602 (solvent)
F		F	T			S	T			S	S					S	T	U		T		S	T	F	F			F			F	S	F	S	F	Freon TE 35
																																				Freon TM
T	T		T	T	U	S	T			S	S			U		S	T	U		U		S	T	F	T			F			F	F		S	U	Freon TMC (solvent)
F	U		U	U	U	U	U	T	T	F	F			U		S	U	U	U	U		S	T	S	S	S		F			S	S	S	S	T	Freon MF (solvent)
F	U		U	T	U	S	U			F	F			U		S	U	U	U	U		S	T	S	S	S		F			S	S	S	S	T	Freon BF (solvent)
S	S	S	S	S	S	S		S	T	T	T	S	S		S	S	S	S	S			S	U	F	F			S		U		F	F	U	T	Fruit juices
T	U		U	T	U	S	U	T	T	S	S	S	S	F	S	S			S				T	S	S	S		S	S	T	S	T	S	S	S	Fuel oils
U	F	U	U	U	U	U	S	U	T	F	F	S	U	U	U	S	U	U	S	U		S	S	S	S	F		F	T	T	F	F	S	F	S	Furfural
T			S				S			F	F			U		S	U	U	U	U		S	T	S	S			F			S	S	S	S	T	Freon 123
U	S		S	U	U	U	U	U	U	F	F		T	U		S	U	U	U	U		S	T	S	S			F			S	S	S	S	T	Freon 134A
S	U	T	U	U	U	F	U	T	F	U	U		S	F	S	S	T	U	S	T		S	U	F	S	S		F			S	F	S	F	S	Gallic acid
T	U	U	U	T	U	S	U	S	T	S	F	S	S	T	S	S	U	U	S	T	S	S	S	S	S	S		S	S	T	S	T	S	S	F	Gasoline
S	S	S	S	U	S	S	T	T		S	S		S	S	S	S	S	S	S			S	U	S	S			S		U		S	S	F	S	Gelatin
S	S	S	S	U	S	S	F	T	F	S	S	S	S	S	S	S	S	S		T		S	S	S	S			S		S		S	S	F	S	Glucose, edible
S	S	S	S	U	S					S	S	S	S	S	S	S							S	T	S			S		S		S	S	F	S	Glue (non acid)
S	S	S	S	U	S	S	F	T	T	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S		S	F	F	S	F	S	S	S	Glycerine (Glycerol)
S	U		U	S	U	S	U	T	T	S	S		S			S	T					S	S	S	S	S		S		S		S	S	S	S	Grease, petroleum base
S			S	S	S	S							S			S						S	S	S	S	S	S	S	F	S		S	S	S	U	Goulac (core binder)
S	S		S	T	T	S	F	T	U				U	S		S						F	T	U	F			F	U	T		U	U	U	U	Green sulfate liquid
S	S	S	S	U	S					S								S						S	S	S						S	S	S		Glycol solution
U	U		U	U		F		U	U	U	U		U	U		S	U	U	U	U		S	U	S	S	S						S		F	U	Halon 1011
F			U			U												U																S		Halon 1202
T						S		T										U				S	S	S	S							S	S	S	S	Halon 2402
T			S	T	F	F	S	U		S	S		S			T		U				S	T	T	S						S	S		S	T	Halon 1301
T			U			F		U					S									U	S	S	S							S	S	S	S	Halon 1211
S	U	F	F	F	U	S	U	T	T	S	S		S	U		S	U	U	S	U		S	S	S	S	S		S				S	S	S	S	Heptane (liquid)
F	U	S	F	S	U	S	U	T	T	S	S		T	S		S	U	U	S	U	S	S	S	S	S	S		S		F		F	F	S	F	Hexane
S	U	S	T	F	U	S		T	S	S	S		T	S		S	T	U	S	T		S	S	S	S	S	S	S	S	S		S	S	S	S	Hydraulic oil
F	S		F	U	U	U	S	U	U	F		S	S		S	S	U					S	U	F	S	U		U	U	U		U	U	U	S	Hydrazine
U	S	S	U	U	U	F	T	U		U	U	S	U	S		S	S	T	U	U		U	U	U	U			U			U	U	U	U	U	Hydrobromic acid
T	U	T	U	T	U	F						U	U	U	U	S								F	F	F		S				S	S	S	S	Hydrocarbons (c hlorinated)
T	F	T	T	U	U	T	T	T	U	U	U	S	U	S	S	F	T	T	T	T	T	U	U	U	U	T		U	U	U	F	U	U	U	U	Hydrochloric acid (aerated)
T	F	T	U	U	U	T	T	T	U	U	U	S	U	S	S	F	T	T	T	T	T	U	U	U	U	F		U	U	U	T	U	U	U	U	Hydrochloric acid (air free)
S	S	S	S	U	U	S	F	T	U	U	U	S	U	S	S	S	S	S				F	U	S	S	T		F		U	T	U	U	U	S	Hydrocyanic acid
T	T	S	U	T	U	S	U	U	U	U	U	S	U	S		S	T	T	T	T		T	T	U	U	F		U	U	U	U	U	U	U	U	Hydrofluoric acid (aerated)
U	T		U	T	U	S	U	U	U	U	U	S	U	S		S	T	T	T	T		T	T	U	U	S		F	T	U	U	T	T	U	U	Hydrofluoric acid (air free)
S	S	S	S		U					U	U	S		S	S								U	U	U			S			S			U	U	Hydrofluosilicic acid
S	S	S	S	S	T	S	S	U	F	U	U	S	S	U	S	S	S	S	S	S		S	S	S	S	S		T	S	S		S	S	S	S	Hydrogen 377
U	T		U	U	U	S	F	U		U	U			T		S	F		T	U		T	T	U	U	U		U	U		U	U	U	U	U	Hydrogen bromide(anhydrous)
U	S		T		S	T	T	U		U	U		U			S	S	S				S	T	U	T	F		T	F	T	S	T	T	T	U	Hydrogen chloride(anhydrous)
T	F		U	U	U	S	U	U		U						F	T	T					F	F	F	F		S			S	T	T	T	U	Hydrogen Boride
U	T	U	U	T	T	T	T	T	U	T	U		U	T	S	S	T	T	T	T		T	T	T	T	U		T	U	T	F	U	U	U	F	Hydrogen peroxide
T	S	T	F	U	T	U	F	U	T	U	U	S	U	S	S	S	S	S	S	T		T	T	T	T	U		T	F	T	S	U	U	U	F	Hydrogen sulfide
T		S	T	S		S							F		S	S							S	S	T			S		U					T	Ink (non aniline)
U	F	F	U	U	U	S	T	T	T	U	U		S	S	U	S	T	U	U			T	T	T	T	U		T	U	U	S	T	T	U	U	Iodine
																							U	U	U			T	F	U		T			U	Iron potassium sulfate
T	U		F	T	U	F	U	T		S			S			S						S	S	S	F	S	S	S	S	S	S	S	S	S	S	Isobutane
S	U	S	F	S	U	S	U	S	S	S	F	S	T		S	S	T	T	S	T		S	S	S	S	S	S	S	S	S	S	S	S	S	S	Isooctane
U	F	U	U	U	U	U	F	U	U	S			T	U		S	T	T		U		F	S	T	F	U		T				U		T	T	Isopropyl acetate
F	S	S	F	U	S	S	F	T	T	S	S		S	F		S	S	F	S	S	S	F		S	S	S		S			F	S	S	S	S	Isopropyl alcohol (Isopropanol)
F	U		U	U	U	S	U	T					U					U																		JP-1, JP-A, JP-A1
F	U		U	U	U	S	U	T					U					U																		JP-2
F	U		U	U	U	S	U	T		T	T		U	S		S	T	U	S	T		S	S	S	S			S			S	S	S	S	S	JP-3
T	U	U	U	U	T	S	U	T	S	F	F	S	S	S	S	S	T	U	S	T	S	S	S	S	S	S	S	S	S	F	S	F	S	F	S	JP-4
S	U		U	T	U	S	U	T		F	F			S		S	T	U	S	T		S	S	S	S			S			S	S	S	S	S	JP-5
T	U		U	U	U	S	U	T										U				S	S	S				S				S	S	S		JP-6
																		U																		JP-7
T	U		U	U	U	S	U	T										U				S	S	S	S			S				S	S	S		JP-8
S	U	U	F	F	U	S	U	T	F	S	S	S	S	F	S	S	U	U	S	T	S	S	S	S	S	S		S	S	S	S	S	S	S	S	Kerosene
S	T	S	S	S	T	S		T					S		S	S						S	U	S	S			S		U			U		U	Ketchup
T			U		U		U	S										U																		JP-B
T	U		U		U	S	U	U										U																		JP-X
U	U	U	U	U	U	U	U	U	U	S			S			S	U	T		U		S	T	F	F	S		S		T		S	S	S	S	Lacquers & Lacquer solvents
T	T	T	T	U	S	F	T	T	U	U	U		T	S	T	S	S	T	S	F		U	U	T	T	F		T	U	U	S	T	U	U	U	Lactic acid
S	F	U	U	U	F	S	U	T	T	F	F		S			F	T	T		S		S	T	F	F	S		F	U			U	U	T	U	Lard
S	S	T	S	U	U	U	F	U		F	S	U	S	S	S	S	S	S	S			F	U	F	F	F		S			F	U	U	U	U	Lead acetate
U	S														S	S								S	S											Light water (fire ext.)
S	S		S		S	S							S			S								F	F	S		S				S	S	S	F	Lime slurry
S	S	T	S	T	S	S	F	T					S			S	S	S				S	S	F	S			S		S		U	U	U	U	Lime sulfur
	S	U	U	U	T	U				S																										Lindol (TCP)
S	U	F	U	S	S	S	F	T	T	S	S		S	T	S	S	S	U	S	S		S	S	S	S	S		S		S		U	S	S	S	Linseed oil
F	U	U	U	U	U	S	U	T	T	S	S		F			S	U		S			S	S	S	S	S		T				S	S	S	S	Liquid petroleium gas (LPG)
S	S		F	U	T	S		T							S	F							F	S	S				S			F	F	F		Lithium bromide
S	F		S	T		S	T			S			S		S	S	S	S		F		S	F	F	F	T		F	U	F		F	F	F	U	Magnesium carbonate 437
S	S	S	S	S	S	S	F	T	T	S	S	S	T	S	S	S	S	S	S	S		T	U	U	T	F		F	U	T	S	U	U	U	U	Magnesium chloride
S	S	S	S	U	S	S	F		U	S	S	U	S	S	S	S	S	S	S	F		S	S	S	S	T		S	U	F	S	F	S	F	U	Magnesium hydroxide
S	T		S		S	T										S						S	S	S	S	S		S					S	S	S	Magnesium oxide
S	S	S	S	U	S	S	F	T	T	S			S	S	S	S	S	S	S	F		F	S	F	S	F		S	F	F	F	T	T	T	F	Magnesium sulfate
S	S	S	S		S	S	S	S		S			S									S	U	T	T	S		U	F	U		U	U	U	F	Magnesium sulfite
S	S	S	S	S	S	S	S						S			S						S	F	S	S			S		U		F	F	U	S	Malt beverages
S	S		F	T	U	S	F			F	F	S		S	S	S	T			T			U			F		F		U	F	F				Manganese sulfate
S		S	S	S	S	S				S			S			S							F	S	S			S		U		F	F	U	S	Margarine
S	U	S	S	U	S	S				S			S			S	S					S	F	S	F			S		U		F	F	U	U	Mayonnaise
S	S	S	S	T	T	S	F	T		F	F	S	U	S	S	S	S	S		S		U	U	U	U	U		U	U	U	U	U	U	U	U	Mercuric chloride
F	T		F			T	F			S					S	S	S	S				F	U	U	F			U			F	U	U	U	U	Mercuric cyanide

CODES: S - SATISFACTORY F - FAIR U - UNSATISFACTORY T - TEST FOR SPECIFIC APPLICATION

RESILIENT MATERIALS												PLASTICS										METALS														
BUNA 'N' (NBR)	ETHYLENE PROPYLENE (EPDM)	HYPALON	NEOPRENE (CR)	URETHANE	SILICONE	VITON (FKM/FPM)	BUTYL	FLUOROSILICONE	HYTREL	CELCON	DELRIN	LEXAN	NYLON	POLYSULFONE	PVC	TEFLON	POLYPROPYLENE	POLYETHYLENE	POLYPHENYLENE SULFIDE	POLYCARBONATE	ULTEM	ST. ST. DIN 1.4435/1.4404	STEEL	ST. ST. AISI430	ST. ST. DIN 1.4301/1.4305/1.4542	SILVER	49 - NICKEL-IRON	MONEL	LEAD	IRON	INCONEL	COPPER	BRONZE	BRASS	ALUMINUM	
S	S	S	S	T	S	S	T	U	T	U	U	F	S	S	S	S	S	S				S	S	S	S	U		U	U	S	S	U	U	U	U	Mercury
S		S	S		S	S							S			S								T	U			F		U		U	U	U	U	Mercury salts
U	T					U										S							T	F	F			U		F		U	U	U	F	Methallylamine
T				S	U								U		U	S							T	F	U	F		F		S	S	F	S	S	U	Methallyl chloride
S	U	T	F	U	U	S	U	U	T	S			F		S	S	T	U				S	S	S	S	S		S	S	S		S	S	S	S	Methane
																																				Methanol (see alcohol-methyl)
U	F	U	F	U	U	U	T	U	U	F	F		F	U	U	S	T					S	S		T	T				S		F			T	Methyl acetate
U	U	U	U	U	U	F	U	T	U	F	F	F	S	U	U	S	U	U	T	U		T	T	T	T	F		F		S	T	F	S	T	U	Methyl chloride
U	F	U	U	U	U	U	F	U	T	F	T		S	U	U	S	U	U	S	U	U	S	S	F	F	F		S	S	S		S	S	S	S	Methyl ethyl ketone (MEK)
U	U	U	U	U	U	F	U	F	U	S			U	U	U	S	T	U	S	U	U	F	T	T	T	S		F	T	F	T	T	U	S	U	Methylene chloride
S													S			S								S	S	S						S		S		MIL-F-5516
S													S			S								S	S	S						S		S		MIL-F-5572
S													S			S								S	S	S						S		S		MIL-F-5624
S						S																		S	S	S						S		S		MIL-F-25558
S	U		S	S		S							S			S								S	S	S						S		S		MIL-H-5606
S	U		S	S		S																	S	S	S	S						S		S	S	MIL-L-7808
S	S	S	S	U	S	S	U	T	F	S	F	S	S	U	S	S	F	S		S		S	S	S	S	U		U		S	S	U	U	U	S	Milk 474
S			S		S	U				U	T	S	S	S	S	S								U	F		F	S	T	U		U	U	U	F	Mine water (acid)
S	U		F	F	S	S	U	T	T	S			S	S	S	S	U	U	S	F		S	S	S	S	S		S	S	S	S	S		S	S	Mineral oil, USP
F	U		U		U	S				S							U							S	S	S						S		S	S	Mineral spirits
										U			U			S								F	F	U		U	U			U	U	U	U	Mixed acids (H_2SO_4 & HNO_3)
S	T	S	S	T	S	S	F	T	T	S	S	S	S		S	S	S	S	S			S	S	S	S	S		S		S	S	S	S	F	S	Molasses
S	U	S	T	T		S			T	S			T	S	S	S	U	U	S	S	S	S	S	S	S	S		S			S	S	S	S	S	Motor oil - sae #10, etc.
F	U	U	U	U	U	S	U	T	T	S		F	S	T	T	S	U	U	S			S	S	S	S	S		F		T	S	F	F	F	S	Naphtha
U	U	U	U	T	U	S	U	T	T	S			S		U	S	F	U	S			S	S	S	S	S		F	F	F		F	F	F	F	Naphthlene
F	U	U	U		U	S	U	T		U						S						T	T	F	T	S		T		T		F	U	F	F	Naphthenic acid
S	U	S	S	U	U	S	U	U	T	S			S		S	S	S	U				S	S	S	S	S		S		S		F		S	S	Natural gas
S	S	S	F	U	S	S	F	T	U	F	F	S	U	S	S	S	S	S	S	S		T	U	U	T			T	F	U	F	U	U	U	U	Nickel chloride
S	S		S		S	S	F			F			S		S	S	S	S	T	S		T	T	F	F			T			U	U	U	U	U	Nickel nitrate
S	S	S	S	U	S	S	F	T	U	F	F	S	U	S	S	S	S	S	S	S		F	U	T	F			T	F	U	F	T	T	T	U	Nickel sulfate
U	T	T	U	U	U	U	T	U	U	U	U	S	U	U	T	S	T	T	T		T		U	T	S	U		U	U	U	F	U	U	U	T	Nitric acid with 40% H_2O 493
U	T	U	U	U	U	F	T	T	U	U	U	S	U	U		S	T	T	S	U	T	S	U	T	T	U		U		U	T	U	U	U	U	Nitric acid vapors
U	U	U	U	U	U	U	U	U	U	U	U	S	U	U		S	S	U	T	U		T	U	T	T	U		U		U	F	U	U	U	T	Nitric acid (red ßuming)
										U	U		U	U									U	U	U			U	U	U		U	U	U	U	Nitric + HCL acids
													U										S	S	S					S		S				Nitriding gases
U	F	U	U	U	U	U	T	U	U	S	S	U	S	U	U	S	S		S	U		T	S	S	S	S		F	U	F		T	F	F	T	Nitrobenzene
U	T	U	U	U	U	U			U	F			U			S							F	F	F	U	U	U	U	U		U	U	U	S	Nitrogen tetroxide-dry
		S	S				T			U												T	S	F	F	T		F	U	S	S	F	F	F	S	Nitroglycerine
U	T	S				T				U			U			S	U	U				T	U	U	U			U	U		F	U	U	U	U	Nitrous acid
F	F	U	F	S	F	U	T	T		S			S			S	U	U				T	S	F	F	U		U			U	F	F	F	T	Nitrous oxide
																							S	S	S		S					S	S	S	S	Nyval (Mobil)
S	S		S	S	S	S	F	T	F	S	S		S	S		S	S	S	S			S	S	S	S	S					S	S	S	S	S	Nitrogen
S	U	U	S	S	U	S																	S	S	S	S						S	S	S	S	Oronite 8200
											S																	S								Oakite
F	U	U	T	T	T	S	U	S	T	F			S	S	S	S	F	U	F	F		T	F	F	S	S		F	U	F	T	T	T	T	T	Oleic acid
U		U	U							U			S		U	S	U						S	S			F								F	Oleum
S	F	U	S	S	S	S	T	T		S			T	U		S	S	T		S		S		S	S			S		S	S	T		S	S	Olive oil 514
T	U		T	S	U	S	U	T	S														S	S	S	S						F	S	S	S	Oronite hydraulic fluid
F	S	T	F	T	F	U	F	T	U	U			S	S		S	S	T	S	T		T	U	T	T	F		T	U	U	S	T	F	T	T	Oxalic acid
										U													T	T	T			T	F	T		T	T	T	F	Oxidizing gases
U	T	T	S	T	T	S	F	T	F	U	U	T	T	T	T	T	U	U	S	T		S	S	S	S	F		S		S		S	S	S	S	Oxygen
U	S	S	T	S	S	T	F	S	U	U	U		U	T	T	S	U	U		T		F	U	F	F	F									F	Ozone
F			F	F		U	U						S	T	S	F						S	S		S			S					S	T	T	Paint, oil base
T			T		T								S			S												S								Paint vechicles (except soya)
S	U		U	T	T	S	U	T														S	S	S	S			S					S	T	S	Palm oil
F	F	U	U	T	U	F	T	T	T				U	S		S	F	T				S	S	S	S	T		F				F	F	U	S	Palmitic acid
S	U		U	F	T	S	U			F	F	S	S	S	S	S	T	U		T		S	S	S	S			S			S	S	S	S	S	Paraffin
S			S	F	T	S				F						S		U				S		S	S			S				S	S	S	S	Paraffin oil
S			S		F			F								S												T							S	Pencillin solution
F	U	F	S	U	U	S	U	U		S						S		U		S		F	F	F	F	S	F	S				F	F	F	S	Pentane
U	F	T	F	U	U	F	T	S	U	U	U		U	U		S	T	U	S	U		T	U	T	T			U		U		U	U	U	T	Perchloric acid
U	U	U	U	U	U	S	U	T	U	F	F		T	U	U	S	U	U	T	U	U	F	F	F	F	S		F	T	F	S	F	F	F	T	Perchloroethylene 539
S	U	T	T	T	T	S				S													S	S		S		S		S		S	S	S	S	Petroleum oils
				S																																Petroleum residue from distillation
U	U	U	U	U	T	F	F	T	U	U	U	S	U	U	T	S	U		S	U	U	T	U	F	S	S		F	F	T	T	F	S	F	T	Phenol
	S		F	F	F	F				U	U		T	U	U	S							S	S	S	S	S	S	S	S		F	S	S	F	Phosphate ester non-inflammable oils
T	F	S	T	T	U	S	F	T	U	U	U	S	U	S	S	S	S	T	S	T	T	T	U	U	T	F		U	T	U	S	U	U	U	T	Phosphoric acid (aerated)
T	F	S	T	T	T	S	F	T	U	U	U	S	U	S	S	S	S	T	S	F	T		U	U	T	F		T	T	U	T	T	T	T	U	Phosphoric acid (air free)
U										U					S	S	T					T	F		S			S	S	F		T	T	T	S	Phosphorous
	F		T			S				U	U	S	U			S	S						U	U	T			U	U	U		U	U	U	U	Phosphoric acid vapors
	T	U	U	U	U	U				U																										Pickling solution
F	F	S	S	T	T	U	U	T	U	U	T	F	S	S	S	S	T	T				F	U	F	S	S		U	T	U	U	U	U	U	U	Picric acid
F	U	U	U	S	U	S	U	S					S			S						S			S			S		S			U		S	Pine oil
S	S	U	F	U	U	U	F	U		F			T			S	T	T				F	S	F	F	S		F		S		F	F	F	U	Potassium acetate
S	S		S		S	S				S			S		S	S							U		S			F	F	U		F				Potassium aluminum sulfate
S	S		F	U	F	S	T	T		F			T		S	S	S	S				F	F	F	S			F	U	F		F	F	F	U	Potassium bicarbonate
S	S		S		S	S	T			S			T		S							T	U		U	S		U	F	U	U	F	U	U	F	Potassium bisulfate
S	S		S	U	S	S	T	T		T			T	S	S	S	S	S	S	T		F	U	U	F	U		F	F	U	S	F	F	F	U	Potassium bromide
S	S		S	U	S	S	F	T	U	F	F	U	U	S	S	S	S	S	S		T	T	F	F	S	F		F	U	T	S	U	U	U	U	Potassium carbonate
T	S		S	S	S	S	F			U	F	F	S	S	S	S	S	S	S			F	F	F	S	F		U			S	T	U	U	U	Potassium chlorate
S	S	S	S	S	S	S	F	T	T	S	F	F	U	F	S	S	S	S	S	T		F	T	T	T	U		F	U	T	F	F	F	T	U	Potassium chloride
S	S		T	T	S	S	T			U			S		S	S	S	S				F	T	F	F	F		F	F	F	S	F	S	F	F	Potassium chromates
S	S	S	S	S	S	S	S	S	T	U	U	F	S	F	S	S	S	S	S			F	S	S	S	U		F	U	T	F	U	U	U	U	Potassium cyanide
	S	S	S	S	S	S	F	T	T	U			T	S	S	S	S	S	S	T		T	F	F	F	S		F	F	F	S	F	F	F	F	Potassium dichromate
U	T		T			S	T			S			T		S	S	S	S				T	U	U	F	U		F	F	U	T	F	F	F	S	Potassium ferricyanide
S	S	S	F	U	T	T	F	U		S	F	F	F	F	S	S	T	F	T	U	S	T	T	F	S	F		F	U	T	S	T	T	U	U	Potassium hydroxide
F	S		F	T		U	U						T			S	U	U	S			T	T	U	U	U		U			U	U	U	U	U	Potassium hypochlorite
S	S	S	S	S	S	S	S	S	T	F	F	F	S	F	S	F	S	S	S	S		T	F	F	F	T		F	F	F	T	F	F	F	F	Potassium nitrate
U	S	S	S	U	S	S				U	S		U	S		S	S	S	S	S		F	F	S	S	U		F	U	F	F	F	F	F	F	Potassium permanganate
										U												F	T	T	F	U		F	U	U		U	U	U	U	Potassium peroxide
S	S		U	T		S	T			S			T			S	S	S				T	T	S	S	U		U	U	U		U	U	U	U	Potassium persulfate
S	S	F	S	S	S	S	S	S	T	S	F	F	S	S	S	S	S	S	S	T		T	S	S	S	F		F	F	U	S	F	F	U	S	Potassium sulfate
S	S		S	S	S	S	S						S			S	S	S	S			F	U	F	F	U		U			S	U	U	U	U	Potassium sulfide
F	S	F	S	S	S	S	F	T					T			S	S	S				T	T	U	T	S		U	F	U		F	F	U	U	Potassium sulfite

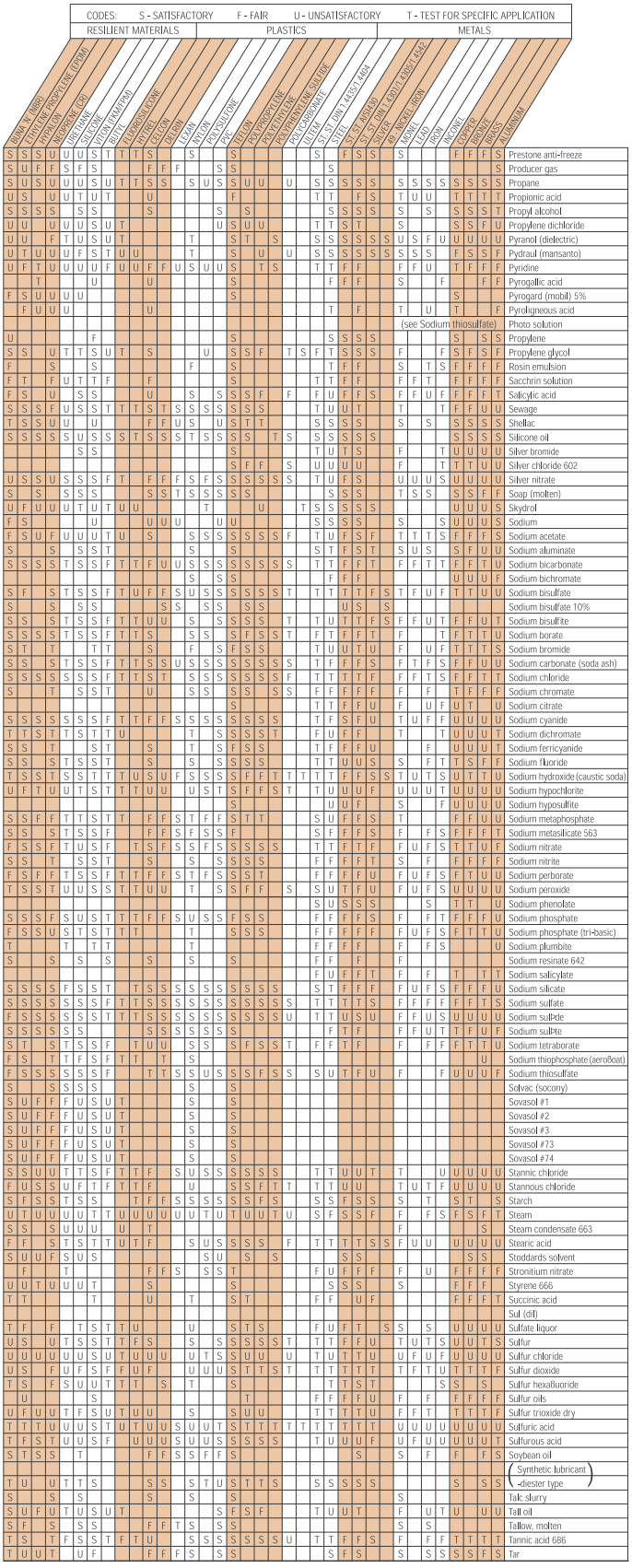
Due to the numerous different application possibilities Trafag cannot accept any guarantee for the correctness of these recommendations. We therefore suggest that for a particular application you carry out tests to verify the fluid resistance.

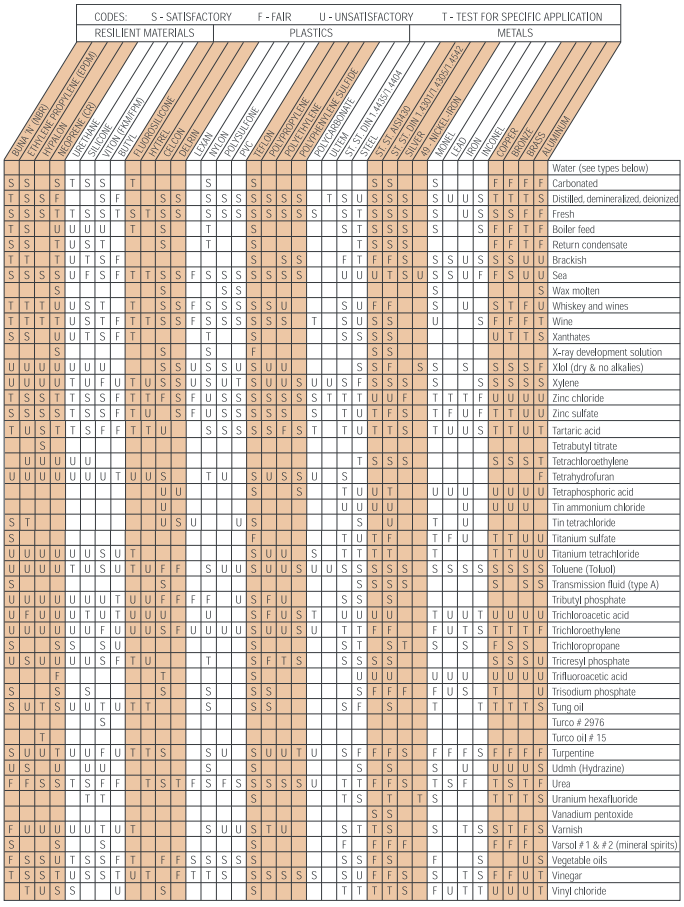
Wegen der Vielzahl von Verwendungsmöglichkeiten kann Trafag keine Gewährleistung für die Richtigkeit dieser Empfehlungen übernehmen. Für den Einzelfall sollten Sie deshalb praktische Versuche durchführen.

A cause de la multiplicité de possibilités d'utilisation, Trafag ne peut pas se charger de garantie pour la justesse de cette recommendation. Nous vous proposons donc de faire des épreuves pour vérifier la compatibilité.

FLUID RESISTANCE GUIDE

SUBJECT TO CHANGE





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Type Code — Typenschlüssel — Codification

ORDER NUMBERS

Type = shortened order number (part of this catalogue) **Code** = detailed order number (from data sheet)

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CMP10.0M	8270.78.2517.35.52.43	23
CMP16.0M	8270.79.2517.35.52.43	23
CMP25.0M	8270.80.2517.35.52.43	23
CMP40.0M	8270.81.2517.35.52.43	23
CMP100.0M	8270.83.2517.35.52.43	23
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D150R	302.5842.362.19	41
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DAMP0.4		60
DAMP1.0		60
DCS2.5AR	8864.75.2315.38.19.23	22
DCS4.0AR	8864.76.2315.38.19.23	22
DCS6.0AR	8864.77.2315.38.19.23	22
DCS10.0AR	8864.78.2315.38.19.23	22
DCS16.0AR	8864.79.2315.38.19.23	22
DCS25.0AR	8864.80.2315.38.19.23	22
DCS40.0AR	8864.81.2315.38.19.23	22
DCS100.0AR	8864.83.2315.38.19.23	22
DCS250.0AR	8864.74.2315.38.19.23	22
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DCSCON10		22
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ECL0.2A	8438.68.2646.22.19.61.5M	17
ECL0.5A	8438.21.2346.22.19.61.8M.01	17
ECON4.0A	8498.76.2917.04.29.58.61	20
ECON6.0A	8498.77.2917.04.29.58.61	20
ECON10.0A	8498.78.2917.04.29.58.61	20
ECON16.0A	8498.79.2917.04.29.58.61	20
ECON40.0A	8498.81.2917.04.29.58.61	20
ECT2-1.0A	8482.71.5317.04.19.58.61	12
ECT2-2.5A	8482.75.5317.04.19.58.61	12
ECT2-6.0A	8482.77.5317.04.19.58.61	12
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IAV
Ingersoll Rand
Iveco
KOMA
MAN B&W
Melag
Mitsubishi
MTU
Noske-Kaeser
Oilon
Ormat Turbines
Parker
Philips
Petrochemia
Polarteknik PMC
Queensland Rail
Reintjes
Renk
Rolls-Royce
Schindler
Schneider Electric
Schottel
Sciteq-Hammel
Shanghai Shipyard
Siemens
SNCF
STX Heavy Industries
Szczecin Shipyard
Thermax Limited
Toshiba
Trumpf
Verolme Shipyard
Vesta
Viessmann
Voith
Wärtsilä
Westfalia Separator
W&H
Yichang Marine Diesel Ltd
York
ZF Marine

SUBJECT TO CHANGE - ÄNDERUNGEN VORBEHALTEN - SOUS RÉSERVE DE MODIFICATIONS H03558 (without prices), H03559 (with prices) TRAFAG AG 11/2011

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