

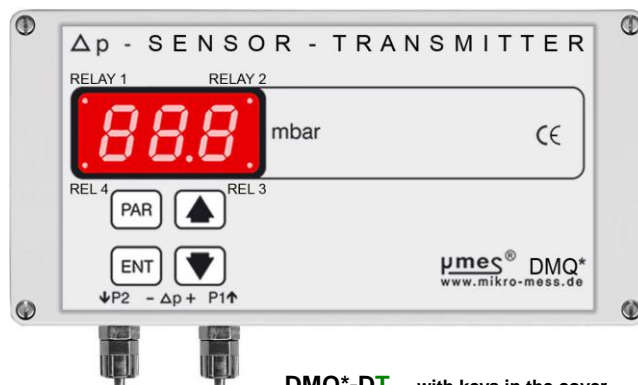
µmes® Δp – SENSOR - TRANSMITTER TYPE: DMQ* D(T)

Valid as of device no.: 10100000

Differential pressure, relative pressure (positive or negative pressure), programmable Δp measuring range



DMQ*D



DMQ*-DT with keys in the cover

DESCRIPTION

Robust, universal, **industrial-grade Δp - SENSOR - TRANSMITTER** for use worldwide with good long-time stability, with very low temperature drift and high single- or double-sided protection against overpressure and **programmable Δp range**, which the user can programme himself within the measuring span of a group. 10 linear short circuit-proof analogue outputs **0-5 V, 0-10 V, 2-10 V, 0-20 mA, 4-20 mA** or **inverse: 5-0 V, 10-0 V, 10-2 V, 20-0 mA** and **20-4 mA** are programmable. The device has **3 relay outputs** e.g. for min and/or max limits. A **4th relay output** can be supplied as an **option**. **Universal on supply voltages**: Can be connected to 110-120 VAC, 230-240 VAC and 24 VDC. Small IP65 housing in shapely design.

Examples: Ventilation and air-conditioning units, medical technology, clean room technology, filter control, fill level control and regulation, flow detection system, etc.

Compact, universal Dp sensor-transmitter for the 3 indicators: overpressure, underpressure and differential pressure.

The differential pressure (+ P1↑ and P2↓ -), the overpressure (+ P1↑) or the underpressure (P2↓ -) are measured via the pressure connections which have integrated FT-P filters, displayed on the 3-digit digital display and output on the linear outputs.

Almost any kind of transmitter can be configured in one device with the **3 pressure indicators**, the **programmable measuring ranges** and the **10 analogue outputs**. This can reduce your costs for storage and servicing. Pressure measuring ranges from 0-0.4 mbar to 0-10 bar can be supplied.

For air-related applications with the ever-present turbulences, a programmable **Δp damping** of the switching points and the display is a necessary, functional advantage. 10 linear short circuit protected analogue outputs **0-5 V, 0-10 V, 2-10 V, 0-20 mA, 4-20 mA** or **inversely: 5-0 V, 10-0 V, 10-2 V, 20-0 mA** and **20-4 mA** are programmable and are available for pressure-proportional output signal for further process controls.

CHARACTERISTICS

- Universal electrical connection for 230-240 VAC and 110-120 VAC and 24 VDC in one device
- Pressure sensor highly overloadable and temperature compensated with manual zero-point calibration
- 9 device groups with user-programmable Δp measuring range within the measuring span of one group:
 - Group 1: 0 - 0.4 mbar to 0 - 2 mbar
 - Group 2: 0 - 1 mbar to 0 - 5 mbar
 - Group 3: 0 - 2 mbar to 0 - 10 mbar
 - Group 4: 0 - 10 mbar to 0 - 50 mbar
 - Group 5: 0 - 20 mbar to 0 - 100 mbar
 - Group 6: 0 - 100 mbar to 0 - 500 mbar
 - Group 7: 0 - 200 mbar to 0 - 1000 mbar
 - Group 8: 0 - 1 bar to 0 - 5 bar
 - Group 9: 0 - 2 bar to 0 - 10 bar
 - Group 10: 0 - 4 mbar to 0 - 20 mbar
- Short circuit protected analogue output 0-5 V, 0-10 V, 2-10 V, 0-20 mA, 4-20 mA programmable, also inversely e.g. 20-4 mA
- Programmable Δp damping: Approx. 1 s to 240 s
- Relay output 1, as two-point regulator or limiting value contact, e.g. alarm, programmable
- Relay output 2, as two-point regulator or limiting value contact, e.g. alarm, programmable
- Relay output 3, as two-point regulator or limiting value contact, e.g. alarm, programmable
- OPTION: Relay output 4, as two-point regulator or limiting value contact, e.g. alarm, programmable
- All relay outputs with switch-over contacts, potential-free, switchable for manual tests
- Sample and hold function by means of which the Δp measuring value can be held
- Extreme ambient temperature range -20°C to +60°C
- Housing protection type IP 65. Housing also with membrane keypad in the lid and can be supplied for Ex areas according to ATEX
- Universal device for the lowest need for storage space, with meaningful functions required in practice
- Machinery directive 98/37/EC, low voltage directive 73/23/EEC and EMC directive 89/336/EEC are fulfilled
- High reliability via "burn in"

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TECHNISCHE DATEN / TECHNICAL DATA

Gruppe - max. Messbereich: / Group - max. range:

Messbereiche Δp	:	0-0.4 - 0-2	Messspanne / measuring range	mbar.....	1 - 2.....ORDER-INDEX: mbar-
Gruppe 1-9	:	0-1 - 0-5	Messspanne / measuring range	mbar.....	2 - 5.....ORDER-INDEX: mbar-
Pressure ranges Δp	:	0-2 - 0-10	Messspanne / measuring range	mbar.....	3 - 10.....ORDER-INDEX: mbar-
Group 1-9	:	0-10 - 0-50	Messspanne / measuring range	mbar.....	4 - 50.....ORDER-INDEX: mbar-
	:	0-20 - 0-100	Messspanne / measuring range	mbar.....	5 - 100.....ORDER-INDEX: mbar-
	:	0-100 - 0-500	Messspanne / measuring range	mbar.....	6 - 500.....ORDER-INDEX: mbar-
	:	0-200 - 0-1000	Messspanne / measuring range	mbar.....	7 - 1000.....ORDER-INDEX: mbar-
	:	0-1b - 0-5b	Messspanne / measuring range	bar.....	8 - 5b.....ORDER-INDEX: bar -
	:	0-2b - 0-10b	Messspanne / measuring range	bar.....	9 - 10b.....ORDER-INDEX: bar -

Wählen Sie eine Gruppe aus für die Messbereiche, die im Gerät verfügbar sein sollen.

Please choose out one group for the ranges, which should be integrated in the unit.

Anzeige, Display	:	Digital, 3-stellig, 7-Segment- LED rot, 14 mm hoch, ohne Tasten im Deckel	ORDER-INDEX: -D-
Tasten, buttons	:	Digital, 3-digit, 7-segment - LED (red), 14 mm high, without buttons.	
	:	Digital, 3-stellig, 7-Segment- LED rot, 14 mm hoch, mit Tasten im Deckel	ORDER-INDEX: -DT-
	:	Digital, 3-digit, 7-segment - LED (red), 14 mm high, with buttons into the cover.	
	:	Digital, 3-digit, 7-segment - LED (red), 14 mm high. Ohne Anzeige / without display..	ORDER-INDEX: -0-

Δp -Dämpfung, Damping Programmierbar / programmable: ca. 1 s bis / to 240 s

Überlastbarkeit	:	Statischer Gleichdruck einseitig / Static balanced pressure on one side:
Overload capacity	:	Messbereich / range, bis / up to: 0.4 - 10 mbar: pmax = 250 mbar
	:	Messbereich / range, bis / up to: 4 - 20 mbar: pmax = 250 mbar
	:	Messbereich / range, bis / up to: 10 - 100 mbar: pmax = 750 mbar
	:	Messbereich / range, bis / up to: 100 - 1000 mbar: pmax = 4 bar
	:	Messbereich / range, bis / up to: 1b - 10b bar: pmax = 20 bar
	:	Statischer Gleichdruck beidseitig / Static balanced pressure on two sides:
	:	Messbereich / range, bis / up to: 0.4 - 10 mbar: pmax = 0,6 bar
	:	Messbereich / range, bis / up to: 4 - 20 mbar: pmax = 0,6 bar
	:	Messbereich / range, bis / up to: 10 - 100 mbar: pmax = 5 bar
	:	Messbereich / range, bis / up to: 100 - 1000 mbar: pmax = 10 bar
	:	Messbereich / range, bis / up to: 1b - 10b bar: pmax = 20 bar

Gesamtfehler	:	Linearität + Hysterese + Reproduzierbarkeit : \pm 1% F.S. ab / from \geq 3 mbar Messbereich / range
	:	Linearität + Hysterese + Reproduzierbarkeit : \pm 2% F.S. bis / to \leq 2 mbar Messbereich / range
Total error	:	Linearity + hysteresis + reproducibility : \pm 4% F.S. bis / to \leq 0,5 mbar Messbereich / range
Langzeitstabilität	:	0,1 % F.S. / Jahr ab / from \geq 3 mbar Messbereich / range (F.S. = vom Messbereich / Full Scale)
	:	0,25 % F.S. / Jahr bis / to \leq 2 mbar Messbereich / range
Long term stability	:	0,5 % F.S. / year bis / to \leq 0,5 mbar Messbereich / range
Temperaturfehler	:	+10°C bis +50°C : 0,025 % F.S. / K (K = Kelvin)
Temperature error	:	+50°F up to +122°F : 0.025 % F.S. / K
Betriebstemperatur	:	-20°C bis +60°C.
Operating temperature	:	-4°F to +140°F.

Druckmedium : Nicht brennbare Gase, Luft, die Polyamid, Polyetherimide, POM, PVC, Silizium, Silicon, Edelstahl, Messing, Aluminium und Gold nicht angreifen.

Fragen Sie uns auch bitte nach Sondermaterialien, auch für andere Medien, z.B. Wasser, Öl usw.

Pressure media : Not flammable gases, air, not corroding polyamide, polyetherimide, POM, PVC, silicon, silicone, stainless steel, brass, aluminum and gold. **If you require special materials, for other medias too, f.eg. water, oil a.s.o. do not hesitate to ask us!**

Signalausgänge	:	Analogausgang, linear, programmierbar / Analogue output, linear, programmable:
Signal outputs	:	0-5 V, 5-0 V, Bürde / load = min. 5 k Ω .
	:	0-10 V, 10-0 V, Bürde / load = min. 10 k Ω , 0-20 mA, 20-0mA, Bürde / load = max. 500 Ω .
	:	2-10 V, 10-2 V, Bürde / load = min. 10 k Ω , 4-20 mA, 20-4 mA, Bürde / load = max. 500 Ω .

Signalausgänge	:	1: Digital: Relais / relay, 1x potentialfreier Wechsler: min 10 mA, max 2 A cos phi = 1, 24-255 V, 50-60 Hz, \geq 24 VDC.
Signal outputs	:	Leuchtdiode für RELAY1 / LED RELAY1
	:	2: Digital: Relais / relay, 1x potentialfreier Wechsler: min 10 mA, max 2 A cos phi = 1, 24-255 V, 50-60 Hz, \geq 24 VDC.
	:	Leuchtdiode für RELAY2 / LED RELAY2
	:	3: Digital: Relais / relay 1x potentialfreier Wechsler: min 10 mA, max 2 A cos phi = 1, 24-255 V, 50-60 Hz, \geq 24 VDC.
	:	Leuchtdiode für RELAY3 / LED RELAY3

Signalausgänge OPTION	:	4: Digital: Relais / relay, 1x potentialfreier Wechsler: min 10 mA, max 2 A cos phi = 1, 24-255 V, 50-60 Hz, \geq 24 VDC.
Signal outputs option	:	Leuchtdiode für RELAY4 / LED RELAY4..... ORDER-INDEX: -4-
	:	All relay contacts 1x change-over switch : min 10 mA, max 2 A cos phi = 1, 24-255 V, 50-60 Hz, \geq 24 VDC.

Signaleingänge : **Digital:** Sample and Hold Funktion durch externen, potentialfreien Kontakt, der 5 mA bei 5 VDC , zuverlässig schalten kann oder durch eine externe Spannung 24 VDC, 10 mA. Mit Sample and Hold kann der Messwert festgehalten werden.

Signal inputs : **Digital:** Sample and hold function with external, potentialfree relay contact, which can switch 5 mA, 5 VDC , dependable or with external voltage 24 VDC, 10 mA. With sample and hold function, the measured value can be stored.

Stromversorgung : **Universell: 230 - 240 V \approx , 50 - 60 Hz** umschaltbar auf / changeable to: **110 - 120 V \approx , 50 - 60 Hz** und / and **24 VDC** in einem Gerät realisiert / in one unit realised.

Bei M12-Steckeranschluß nur in 24 VDC lieferbar. Only available for main power 24 VDC with M12-plugs.

Nennleistung Nom.Power : 2,5 VA; 1,5 W ohne Anzeige / without display. 5 VA; 3,3 W mit Anzeige / with display.

Elektr. Anschluss : Schraubklemmen, max. Drahtquerschnitt 2,5 mm², alternativ: schraubenlose Klemmen

Electric connection : Screw terminal, max cross section of wire AWG 14, alternative: screw less terminals

Druckanschluss : 2x POM-Kunststoff-Schlauchverschraubungen mit Überwurfmutter / 2x POM-plastic-tube connectors with connector nut:

Pressure connection : Schlauchgrößen / size of tube: Da/OD = 6 mm, Di/ID = 4 mm:.....**ORDER-INDEX: -64POM-**

Gehäuse 1 : Abmessungen / dimensions : 80 x 160 x 55 mm, Drei Kabeleinführungen, blind, M16x1,5 / Three cable inputs M16x1,5

Housing 1 : Material / material : ABS. Farbe / colour: grau / grey. Gewicht / weight : 500 g

Schutzart / protection class : IP 65.....**ORDER-INDEX: -AB-**

Gehäuse 2 : Abmessungen wie Gehäuse 1. Der elektrische Anschluss erfolgt über zwei außen angebaute M12-Stecker.

Housing 2 : Nur für eine Versorgung von 24 VDC lieferbar.

Dimensions like case 1. For the electrical connection the unit has two M-12 plugs mounted outside.

Available only for main power 24 VDC.

Schutzart / protection class : IP 65.....**ORDER-INDEX: -ABM12P-**

Vorschriften / Rules : EN 60 204.1. EN 55011. EN 50 014:2000, EN 50281-1-1:1999, EN 50021. EN 61000-4-ff. EN 61010. IEC 60079-15. BGV A2.

Bestell-Nr. : DMQ Gruppe-Messbereich - Anzeige - Volt -AC - Option - Anschluss -Gehäuse-CE

mbar / bar - - - - 4.Relais -

ORDER-INDEX : DMQ Group -range of group- Display - Volt -DC - 4th relay - Connection - Case - CE

Beispiel 1 / example 1 : **DMQ 1 - 2 - D - 24DC- - 4 - 64POM - ABM12P-CE**

Beispiel 2 / example 2 : **DMQ 5 - 100 - DT - 24DC-240AC - 0 - 64POM - AB -CE**

Änderungen vorbehalten / alterations reserved Z 0885001_010_DMQ_D(T)_GB, Date 21.07.2014

jmes-Made in Europe