DISPLAY PRESSURE SWITCH Serie DPC 8380

The DPC 8380 is the ideal combination of pressure switch and transmitter with pressure display. The parameters are set on the device or in a timesaving way via an NFC - smartphone App. The settings in combination with a comprehensive set of options make the DPC 8380 suitable for a wide range of industrial applications.

Applications

- Machine tools
- HVAC
- Refrigeration
- Water treatment
- Process technology

Features

- Parameterization also via NFC-smartphone App (Android)
- Display and electrical connection are independently rotatable 335°/343°
- Analogue output switchable mA or V
- Integrated datalogger
- Measuring range adjustable

Technical Data			
Measuring principle	Thick-film-on-ceramic	Accuracy @ 25°C typ.	± 0.5 % FS typ. ± 0.3 % FS typ.
Measuring range	0 ... 0.2 to 0 ... 100 bar 0 ... 2.5 to 0 ... 1500 psi adjustable	Media temperature	-25°C ... +85°C
Output signal	4 ... 20 mA, 0 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC, switchable mA or V	Ambient temperature	-25°C ... +85°C
NLH @ 25°C (BSL) typ.	± 0.2 % FS typ.	Pressure unit for display	bar, psi, MPa, kPa, mWC, mmWC, inchWC, %, user scale
Switching output	2 transistors PNP	Logger	Ring buffer: 3518 data points Sampling time: 0.1 ... 999.9 s, Off (0)

Ordering information/type code

8380 . XX XX XX XX XX XX

Measuring range [1]

Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]		Pressure measurement range [psi]	Over pressure [psi]	Burst pressure [psi]	
0 ... 0.2	1.2	2	68	0 ... 2.5	15	30	F8
0 ... 0.4	1.2	2	69	0 ... 5	15	30	F9
0 ... 0.6	1.2	2	70	0 ... 10	20	30	G0
0 ... 1	2	4.8	71	0 ... 15	45	70	G1
0 ... 1.6	3.2	4.8	73	0 ... 20	45	70	G3
0 ... 2.5	5	7.5	75	0 ... 30	60	90	G5
0 ... 4	8	12	76	0 ... 50	100	150	G6
0 ... 6	12	15	77	0 ... 100	200	250	G7
0 ... 10	20	25	78	0 ... 150	300	375	G8
0 ... 16	32	40	79	0 ... 250	500	625	G9
0 ... 25	50	75	80	0 ... 400	800	1200	H0
0 ... 40	80	100	81	0 ... 500	1000	1250	H1
0 ... 60	120	180	82	0 ... 1000	2000	3000	H2
0 ... 100	200	300	83	0 ... 1500	3000	4500	H3

Sensor

Relative pressure, 1.4305, accuracy: 0.5 %	57	Absolute pressure, 1.4305, accuracy: 0.5 % [3]	87
Relative pressure, 1.4404/1.4435, accuracy: 0.5 % [4]	59	Absolute pressure, 1.4404/1.4435, accuracy: 0.5 % [3] [4]	89
Relative pressure, 1.4462, accuracy: 0.5 % [4]	52	Absolute pressure, 1.4462, accuracy: 0.5 % [3] [4]	82
Relative pressure, titanium grade 5, accuracy: 0.5 % [4]	53	Absolute pressure, Titanium Grade 5, accuracy: 0.5 % [3] [4]	83
Relative pressure, 1.4305, accuracy: 0.3 % [8]	54	Absolute pressure, 1.4305, accuracy: 0.3 % [8]	84
Relative pressure, 1.4404/1.4435, accuracy: 0.3 % [4] [8]	56	Absolute pressure, 1.4404/1.4435, accuracy: 0.3 % [4] [8]	86
Relative pressure, 1.4462, accuracy: 0.3 % [4] [8]	50	Absolute pressure, 1.4462, accuracy: 0.3 % [4] [8]	80
Relative pressure, titanium grade 5, accuracy: 0.3 % [4] [8]	51	Absolute pressure, titanium grade 5, accuracy: 0.3 % [4] [8]	81

Pressure connection

G1/4" female	10
G1/4" male	17
G1/2" male DIN3852-E [4]	41
1/4" NPT male [4]	30
R1/4" male, DIN3858 [4]	19
7/16"-20UNF male, DIN3866 [3] [4]	18
7/16"-20UNF female, SAE J512 with valve opener [3] [4]	24
7/16"-20UNF male, SAE4 (J1926) [4]	42
9/16"-18UNF male, SAE6 (J1926), seal: accessory 61 [2] [4]	61
G3/4" frontal membrane [4] [6]	52

Electrical connection

Male electrical connector M12x1, 4-pole, Mat. PA (Accessories P3, P4)	32
Male electrical connector M12x1, 5-pole, Mat. PA (Accessories P1, P2)	35

Output signal

Switching output PNP, current output 4 ... 20 mA, switchable to 0 ... 10 VDC; output detail see accessories P1, P2, P3	PA
Switching output PNP, voltage output 1 ... 6 VDC; output detail see accessories P1, P2, P3	PU
Switching output PNP, voltage output 0 ... 10 VDC; output detail see accessories P1, P2, P3	PV
Switching output PNP, voltage output 0 ... 5 VDC; output detail see accessories P1, P2, P3	PW
Switching output PNP; output detail see accessory P4	PS

		8380 . XX	XX	XX	XX	XX	XX
Accessories	Pin configuration 5-pole.; 1: U+, 2: analogue, 3: U-, 4: SP1, 5: SP2						P1
	Pin configuration 5-pole.; 1: U+, 2: SP2 , 3: U-, 4: SP1, 5: analogue						P2
	Pin configuration 4-pole.; 1: U+, 2: analogue, 3: U-, 4: SP1						P3
	Pin configuration 4-pole.; 1: U+, 2: SP2 , 3: U-, 4: SP1						P4
	Pressure peak damping element ø 1.0 mm, material 1.4305 [7]						40
	Pressure peak damping element ø 0.4 mm, material 1.4305 (sensors 57, 87) resp. 1.4404 (sensors 52, 53, 59, 82, 83, 89) [7]						44
	Seal FPM, -18°C ... +125°C						61
	Seal EPDM, -40°C ... +125°C						63
	Female electrical plug M12x1, 5-pole [5]						33
	Parameterization standard for output signal PS (see table "Parameters")						ZS
	Parameterization according to customer specification (see table "Parameters")						ZC
	Function package 1: Zero set / Measuring range zero point adjustment						Z1
	Function package 2: User scale unit / analogue output adjustment						Z2
	Protective cap, 1 pc. F89051, package of 5 pcs. F89052, package of 25 pcs. F89075						
	Adapter with flange connection, 1 pc. F82054						

[1] Extended overpressure as well as customized pressure ranges upon request
[2] Only for sensors 59 and 89
[3] Max. 40 bar or 500 psi
[4] Upon request
[5] For electrical connections 32 and 35
[6] Not for sensors 57 and 87, only for pressure ranges ≤ 25 bar or 400 psi
[7] Not for pressure connections 10, 18, 24, 52
[8] Only for pressure ranges 0 ... 0.4 to 0 ... 40 bar or 0 ... 5 to 0 ... 500 psi

Standard products (extra short lead time)

Product No.	Type Code	Pressure range [bar]	Over pressure max. [bar]	Supply [VDC]	Accuracy @ 25°C typ. [%]
DPC0.2PAP1	8380 68 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 0.2	1.2	15 ... 30	± 0.5
DPC0.4PAP1	8380 69 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 0.4	1.2	15 ... 30	± 0.5
DPC0.6PAP1	8380 70 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 0.6	1.2	15 ... 30	± 0.5
DPC1.0PAP1	8380 71 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 1	2	15 ... 30	± 0.5
DPC1.6PAP1	8380 73 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 1.6	3.2	15 ... 30	± 0.5
DPC2.5PAP1	8380 75 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 2.5	5	15 ... 30	± 0.5
DPC4.0PAP1	8380 76 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 4	8	15 ... 30	± 0.5
DPC6.0PAP1	8380 77 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 6	12	15 ... 30	± 0.5
DPC10.0PAP1	8380 78 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 10	20	15 ... 30	± 0.5
DPC16.0PAP1	8380 79 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 16	32	15 ... 30	± 0.5
DPC25.0PAP1	8380 80 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 25	50	15 ... 30	± 0.5
DPC40.0PAP1	8380 81 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 40	80	15 ... 30	± 0.5
DPC60.0PAP1	8380 82 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 60	120	15 ... 30	± 0.5
DPC100.0PAP1	8380 83 5717 35 0000 0000 PA P1 44 61 ZS Z1 Z2	0 ... 100	200	15 ... 30	± 0.5

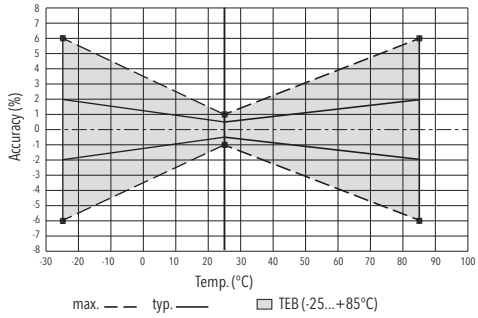
Parameters

Name	Standard setting (accessory ZS)	Value range	Short name	Customer adjustment (accessory ZC)
Switch point SP1 (hysteresis mode) Upper switch point FH1 (window mode)	75 % Measuring range	SP1 > RP1 FH1 > FL1 Hysteresis ≥ 1 % FS	SP1	
Reset point RP1 (hysteresis mode) Lower switch point FL1 (window mode)	25 % Measuring range	RP1 < SP1 FL1 < FH1 Hysteresis ≥ 1 % FS	RP1	
Switch point SP2 (hysteresis mode) Upper switch point FH2 (window mode)	75 % Measuring range	SP2 > RP2 FH2 > FL2 Hysteresis ≥ 1 % FS	SP2	
Reset point RP2 (hysteresis mode) Lower switch point FL2 (window mode)	25 % Measuring range	RP2 < SP2 FL2 < FH2 Hysteresis ≥ 1 % FS	RP2	
Switch point delay time SP1 (hysteresis mode) Switch point delay time FH1 (window mode)	0	0 ... 99.99 s	dS1	
Switch point delay time RP1 (hysteresis mode) Switch point delay time FL1 (window mode)	0	0 ... 99.99 s	dR1	
Switch point delay time SP2 (hysteresis mode) Switch point delay time FH2 (window mode)	0	0 ... 99.99 s	dS2	
Switch point delay time RP2 (hysteresis mode) Switch point delay time FL2 (window mode)	0	0 ... 99.99 s	dR2	
Functions switching output 1	Hysteresis, closer (Hno)	Hysteresis NO (Hno), Hysteresis NC (Hnc) Window NO (Fno), Window NC (Fnc)	ou1	
Functions switching output 2	Hysteresis, closer (Hno)	Hysteresis NO (Hno), Hysteresis NC (Hnc) Window NO (Fno), Window NC (Fnc)	ou2	
Pressure units	bar	bar, psi, MPa, kPa, mWC, inchWC	uni	
Measuring range adjustment	100 % Nominal pressure	50 ... 100 % Nominal	P_EP	
Damping (analogue output)	0.01 s	0.01 ... 3.00 s (time constant)	dAA	
Display rotation	No	no, yes (180°)	disr	
Display mode	Current pressure value	Pressure value: current, highest, lowest, display off Current value: decimal places selectable (max. 3)	dis	
Display actualisation	2	1, 2, 5, 20 Hz	duPd	

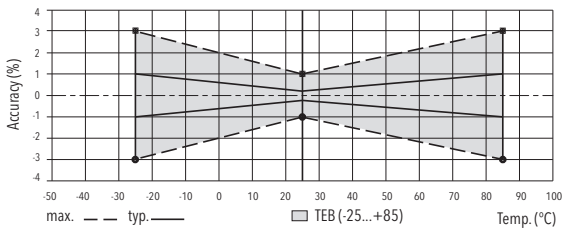
Specifications		
Electrical Data	Output / supply voltage	4 ... 20 mA: 24 (15 ... 30) VDC 0 ... 5 VDC: 24 (15 ... 30) VDC 1 ... 6 VDC: 24 (15 ... 30) VDC 0 ... 10 VDC: 24 (15 ... 30) VDC
	Power-on delay time	Typ. 200 ms
	Inverse-polarity protection, short-circuit strength @ 25°C during 5 min.	integrated
	Current consumption	≤ 30 mA
Environmental conditions	Media temperature	-25°C ... +85°C
	Ambient temperature	-25°C ... +85°C
	Protection [1)]	IP67
	Humidity	Max. 95 % relative
	Vibration	10 g (10 ... 2000 Hz)
	Shock	50 g / 3 ms
EMC Protection	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
Mechanical Data	Sensor (wetted parts)	Ceramic, Al_2O_3 (96 %)
	Pressure connection (wetted parts)	57/87: 1.4305 (AISI303 59/89: 1.4404/1.4435 (AISI316L) 52/82: 1.4462 (AISI318LN) 53/83: Titanium Grade 5
	Housing	Zinc based die-casting alloy, nickel plated display housing plastic
	Sealing	FPM, EPDM
	Male electrical connector	See ordering information
	Weight	~ 189 g
	Mounting torque	15 ... 20 Nm
	Housing alignment	Display 335° rotatable, max. 2.5 Nm Electrical connection 343° rotatable, max. 5 Nm

[1)] See electrical connection

Measuring accuracy 0.5 %



Measuring accuracy 0.3 %



Analogue output

			Measuring accuracy 0.5 %	Measuring accuracy 0.3 %
Output signal	Switchable 4 ... 20 mA or voltage			
Accuracy	TEB @ -25 ... +85°C	[% FS typ.]	± 2.0	± 1.0
	Accuracy @ +25°C	[% FS typ.]	± 0.5	± 0.3
	NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.2
	TC zero point and span	[% FS/K typ.]	± 0.03	± 0.02
	Long term stability 1 year	[% FS typ.]	± 0.3	± 0.2
Current limiting output signal	4 ... 20 mA: 25 mA (overload)			
	0 ... 10 VDC: < 40 mA (short-circuit)			
Damping (rise time)	0.01 ... 3.00 s / 10 ... 90 % Nominal pressure			
Zero set; [1] Offset correction of analogue output and display indication	± 0.2 % FS			
Measuring range zero point adjustment (P_nP) [1]	0 ... 50 % FS [2]			
Measuring range end point adjustment (P_EP)	50 ... 100 % FS [2]			
Zero point adjustment analogue output (o_nP) [1]	Voltage output: 0 ... 2 VDC Current output: 3.9 ... o_EP - 8 mA			
End point adjustment analogue output (o_EP) [1]	Voltage output: o_nP + 4 ... 10.5 VDC Current output: o_nP + 8 ... 20.1 mA			

[1] Available with optional function package, see "Accessories"
[2] P_EP – P_nP ≥ 50 % FS

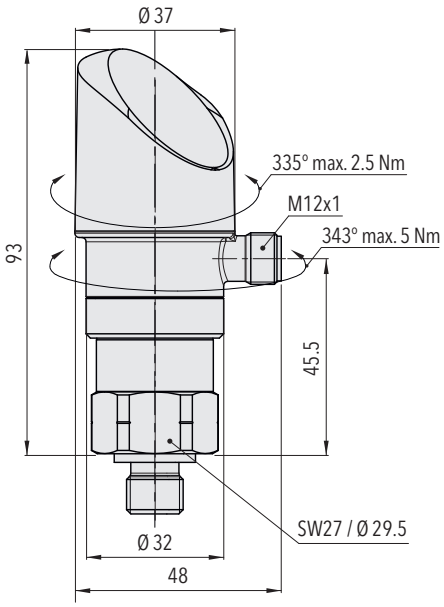
Switching output

			Measuring accuracy 0.5 %	Measuring accuracy 0.3 %
Accuracy	Accuracy @ +25°C	[% FS typ.]	± 0.5	± 0.3
	TEB @ -25 ... +85°C	[% FS typ.]	± 2.0	± 1.0
	Long term stability 1 year	[% FS typ.]	≤ ± 0.3	± 0.2
Setting range of switchpoints	0 … 100 % FS			
Switching hysteresis	≥ 1 % FS			
	Switchpoint > reset point			
Switching resistance	≤ 3 Ω			
Output function	Hysteresis, Window; normally closed (NO), normally open (NC)			
Switching current	≤ 0.5 A each switching output			
Current limiting	≤ 2 A each switching output			
Switching frequency	max. 200 Hz			
Delay time	0 ... 99.99 s			

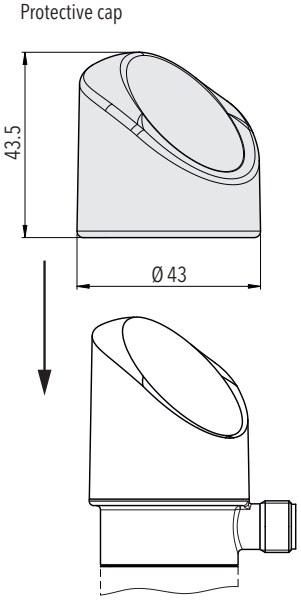
Display	
Display	4-digit 7-segment display 180° flippable with disable function Standard decimal places: ≤ 9: 3 decimal places 10 ... 99: 2 decimal places 100 ... 999: 1 decimal place
Switching status indication	2 LED, red
Operation	With 3 buttons and menu navigation according to VDMA 24574-1
Display resolution	0.1 % FS
Display range	-3 ... 103 % FS
Setting parameters	See table Parameters
User scale unit; User defined values for display indication zero point and end point [1)]	Display zero point: -999 ... 9998 Display end point: -998 … 9999

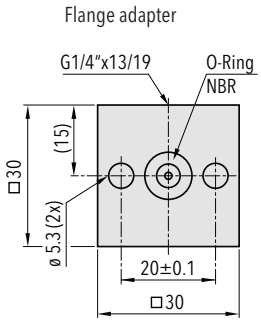
[1)] Available with optional function package, see "Accessories"

Dimensions

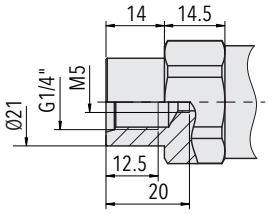


8380.XX.XXXX.**35/32**.XX.XX

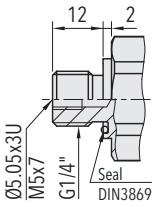




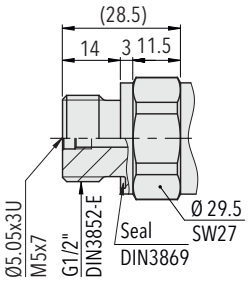
F82054
Mounting accessory
included



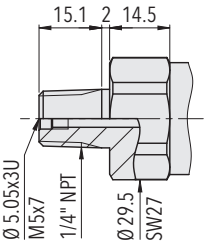
8380.XX.XX**10**.XX.XX.XX



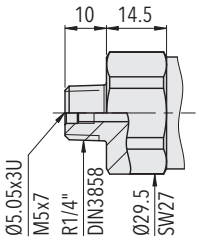
8380.XX.XX**17**.XX.XX.XX



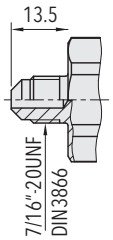
8380.XX.XX**41**.XX.XX.XX



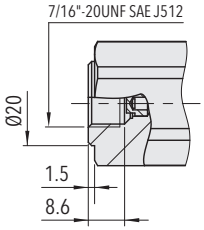
8380.XX.XX**30**.XX.XX.XX



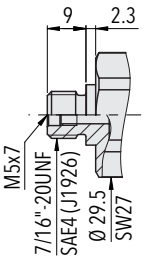
8380.XX.XX**19**.XX.XX.XX



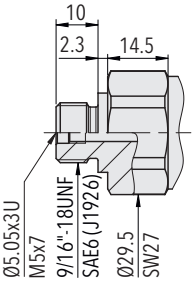
8380.XX.XX**18**.XX.XX.XX



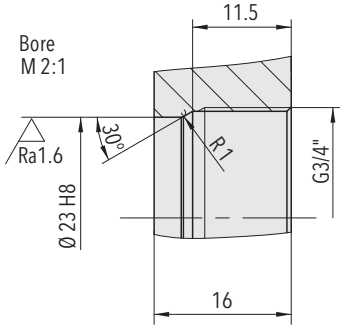
8380.XX.XX**24**.XX.XX.XX

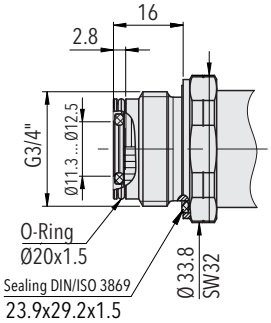


8380.XX.XX**42**.XX.XX.XX

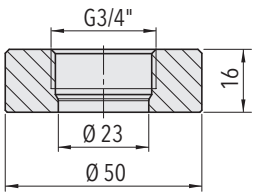


8380.XX.XX**61**.XX.XX.XX

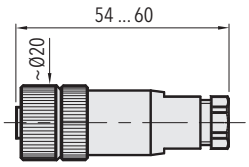




8380.XX.XX**52**.XX.XX.XX

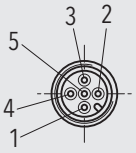
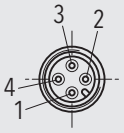
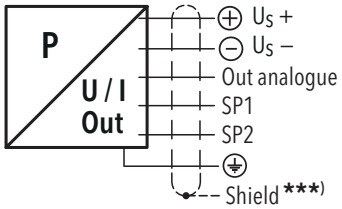


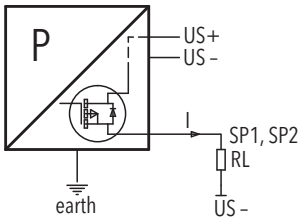
Welding flange (AISI 316L)
for G3/4" frontal membrane
Ordering No. C27805



8380.XX.XXXX.XX.XX.**33**

Electrical connection

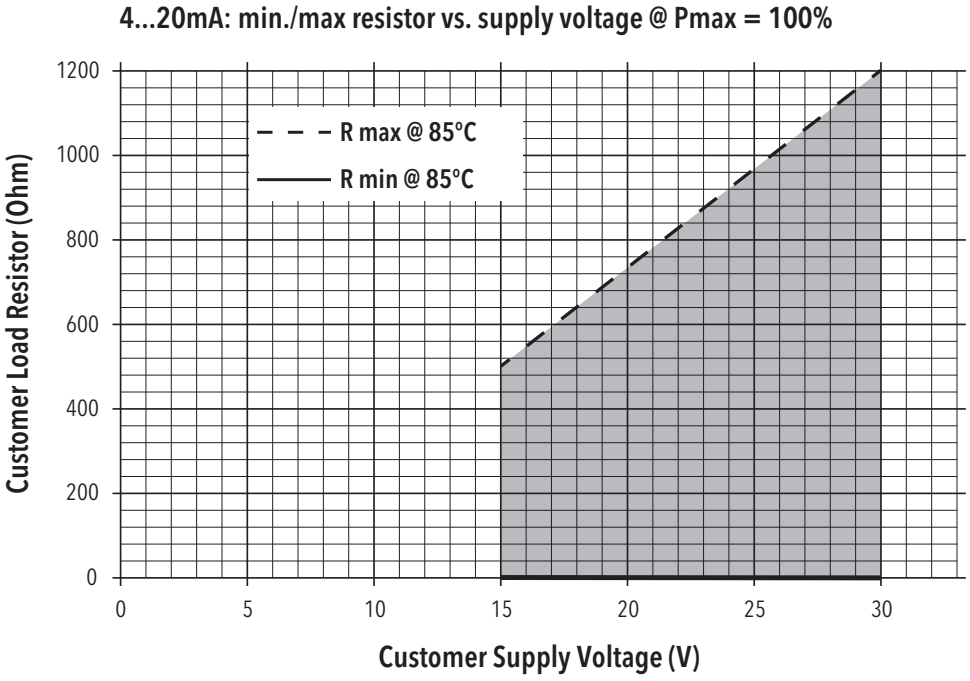
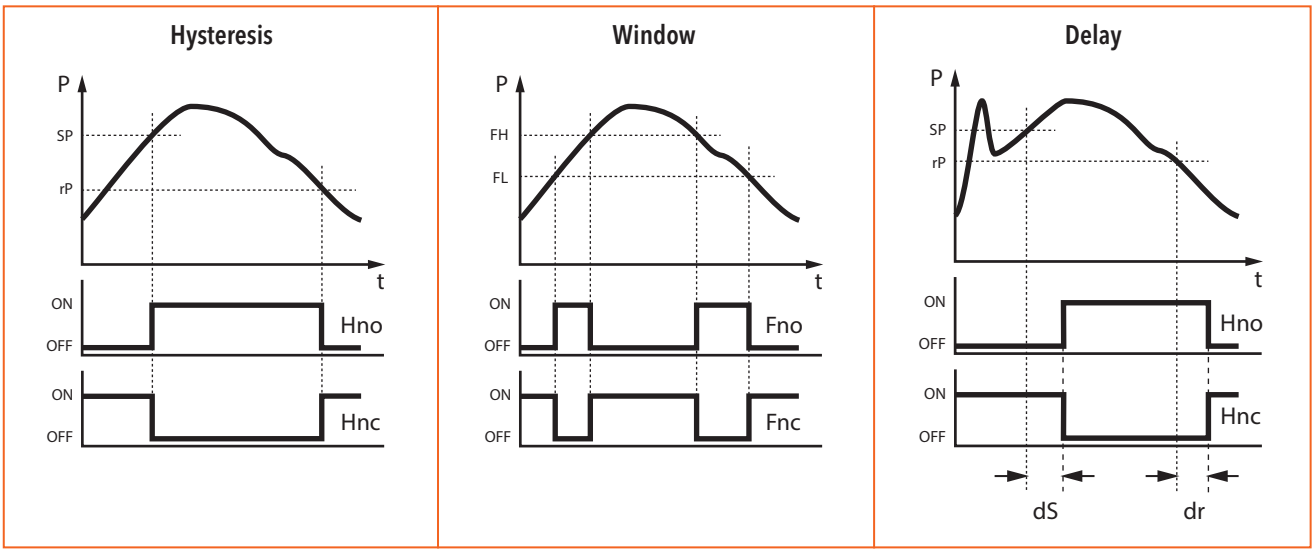
		Protection / electrical connection			
		IP67*)			
		M12x1			
		5-pole **35** 		4-pole **32** 	
Output signal		P1	P2	P3	P4
	PA	✓	✓	✓	
	PU	✓	✓	✓	
	PV	✓	✓	✓	
	PW	✓	✓	✓	
	PS				✓
Pin Configuration	 **8380**.xx.xxxx.xx.**PA/PU/PV/PW/PS**	P1 1 3 2 4 5 Shield ***)	P2 1 3 5 4 2	P3 1 3 2 4 Shield ***)	P4 1 3 – 4 2 Shield ***)



Connection of loads to switching output

*) Provided female electrical plug is mounted according to instructions

***) Die Verwendung eines abgeschirmten Kabels wird empfohlen



Functions switching output