

LEVEL SWITCH WITH DISPLAY

The DLFLS 8980 is the ideal combination of a float level and transmitter with 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 DLFLS 8980 suitable for a wide range of industrial applications. The magnetic float which activates reed contacts inside the guiding rod provides a measuring resolution of 5, 10 or 20mm.

Applications

- Water treatment
- Machine tools
- Mobile hydraulics
- Food & Beverages
- Chemical & Pharmaceutical



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 resolution 5, 10, 20 mm

Technical Data

Measuring principle	Magnetic float with reed contacts	Media temperature	-30°C ... +105°C -30°C ... +90°C PP floats -30°C ... +60°C PVC floats
Measuring range	Max. Level 2000 mm	Ambient temperature	-30°C ... +85°C
Output signal	4 ... 20 mA, 0 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC, switchable mA or V	Unit for display	mm, inch, user scale, %FS
Switching output	2 transistors PNP	Logger	Ring buffer: 3518 data points Sampling time: 0.1 ... 999.9 s, Off (0)
Accuracy @ 25°C typ.	Resolution of 5, 10 or 20 mm. With resolution 5mm max. stem length 1099 mm		

8980 - X - XX - XXX - XX - XXXX - XXX - XX - X - XX

9. 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
	Female electrical plug M12x1, 5-pole ⁵⁾	33
	Parameterization standard for output signal PS, T1 (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	

¹⁾ See table Materials

²⁾ See table Floats

³⁾ See table Process connections

⁴⁾ See table Electrical Connections

⁵⁾ See table Dimensions

⁶⁾ For other floats, please contact factory

⁷⁾ For other process connections, please contact factory

⁸⁾ For other electrical connections, please contact factory

⁹⁾ For other options, please contact factory.

Order example

- 8980-S-05-S29-PA-XXXX-G25-35-L-P1-ZS
- 8980-S-20-S52-PA-XXXX-G50-35-L-P1-ZS
- 8980-O-10-B20-PV-XXXX-G25-35-L-P1-ZS
- 8980-O-20-B45-PA-XXXX-G25-35-L-P1-ZS
- 8980-P-05-V49-PA-XXXX-G50-35-L-P1-ZS

Material

Tab. 1

Type	Stem	Float	Process connection	Flange
8980-O xx Bxx	Brass	Spansil	Brass	Brass
8980-S xx Sxx	AISI316	AISI316	AISI316	AISI316
8980-P xx Fxx	PVDF	PVDF	PVDF	PVDF
8980-P xx Pxx	PP	PP	PP	PP
8980-P xx Vxx	PVC	PVC	PVC	PVC

Floats 8980-O

Tab. 2

				
Code	B20	B28	B45	B44
Material	Spansil	Spansil	Spansil	Spansil
Dimension (mm)	Ø30x20	Ø20x28	Ø30x45	Ø44x50
Specific gravity (kg/dm ³)	0,4	0,4	0,35	0,45
Measuring Resolution (mm)	5 - 10	5 - 10	5 - 10 - 20	5 - 10 - 20
Max. Pressure (bar)	20	20	20	20
Media temperature max.	105°C	105°C	105°C	105°C

Floats 8980-S

Tab. 2

				
Code	S29	S52	S53	S10
Material	AISI316	AISI316	AISI316	AISI316
Dimension (mm)	Ø30x32	Ø52x68	Ø52	Ø100
Specific gravity (kg/dm ³)	0,75	0,65	0,7	0,6
Measuring Resolution (mm)	5	10 - 20	5	10 - 20
Max. Pressure (bar)	30	40	50	15
Media temperature max.	105°C	105°C	105°C	105°C

Floats 8980-P

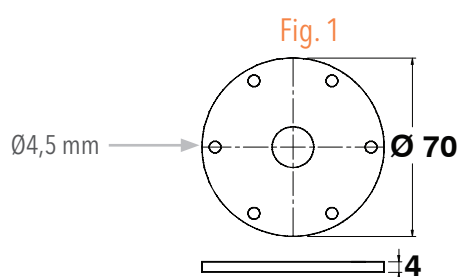
Tab. 2

			
Code	F49	P49	V49
Material	PVDF	PP	PVC
Dimension (mm)	Ø49x53	Ø49x53	Ø49x53
Specific gravity (kg/dm³)	0,8	0,45	0,7
Measuring Resolution (mm)	5	5	5
Max. Pressure (bar)	6	3	6
Media temperature max.	105°C	90°C	60°C

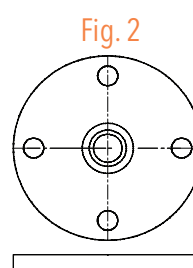
Process connection

Tab. 3

Code	Type Process Connection	8980-O				8980-S				8980-P		
		B20	B28	B45	B44	S29	S52	S53	S10	F49	P49	V49
G25	G 1" m, mounting from outside	✓	✓	✓		✓						
N25	1" NPT m, mounting from outside		✓									
G40	G 1 ½" m, mounting from outside	✓	✓	✓	✓	✓						
N40	1 ½" NPT m, mounting from outside	✓	✓	✓		✓						
G50	G 2" m	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
N50	2" NPT m	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
DN1	Flange type DIN				✓		✓	✓	✓	✓	✓	✓
DN2	Flange type ANSI				✓		✓	✓	✓	✓	✓	✓
FOH	Flange 6 hole on Ø60mm in brass	✓	✓	✓								
FSH	Flange 6 hole on Ø60mm in SS					✓						



FOH - FSH
6 holes on Ø60 mm



DN = DIN - ANSI Flanges

Flanges available

DIN type	ANSI type
DN25 PN6 or PN16 or PN40	1" ANSI 150# RF or 300# RF or 600# RF
DN50 PN6 or PN16 or PN40	2" ANSI 150# RF or 300# RF or 600# RF
DN80 PN6 or PN16 or PN40	3" ANSI 150# RF or 300# RF or 600# RF
DN125 PN6 or PN16 or PN40	4" ANSI 150# RF or 300# RF or 600# RF

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 $\geq 1\%$ FS	SP1	
Reset point RP1 (hysteresis mode) Lower switch point FL1 (window mode)	25 % Measuring range	RP1 < SP1 FL1 < FH1 Hysteresis $\geq 1\%$ FS	RP1	
Switch point SP2 (hysteresis mode) Upper switch point FH2 (window mode)	75 % Measuring range	SP2 > RP2 FH2 > FL2 Hysteresis $\geq 1\%$ FS	SP2	
Reset point RP2 (hysteresis mode) Lower switch point FL2 (window mode)	25 % Measuring range	RP2 < SP2 FL2 < FH2 Hysteresis $\geq 1\%$ 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	
Level unit	mm	mm, inch, %, user scale	uni	
Measuring range adjustment	100 % Nominal	50 ... 100 % Nominal	L-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 value	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
	Switch-on-delay	Typ. 200 ms
	Inverse-polarity protection, short-circuit strength @ 25°C during 5 min.	integrated
	Current consumption	≤ 30 mA
Environmental conditions	Media temperature	-30°C ... +105°C
	Ambient temperature	-30°C ... +85°C
	Protection ¹⁾	IP65, IP67
	Humidity	Max. 95 % relative
	Vibration	0.7g (13.2 ... 100 Hz)
EMC Protection	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
Mechanical Data	Sensor (wetted parts)	see ordering information
	Pressure connection (wetted parts)	see ordering information
	Housing	Zinc based die-casting alloy, nickel plated display housing plastic
	Male electrical plug	See ordering information
	Housing alignment	Display 335° rotatable, max. 2.5 Nm Electrical connection 343° rotatable, max. 5 Nm

¹⁾ See electrical connection

Analogue output

Output signal	Switchable 4 ... 20 mA or voltage		
Current limiting output signal	4 ... 20 mA: 25 mA (overload)		
	0 ... 10 VDC: < 40 mA (short-circuit)		
Measuring range zero point adjustment (L_nP) ¹⁾	0 ... 50 % FS ²⁾		
Measuring range end point adjustment (L_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⁾ L_EP - L_nP ≥ 50 % FS

Switching output

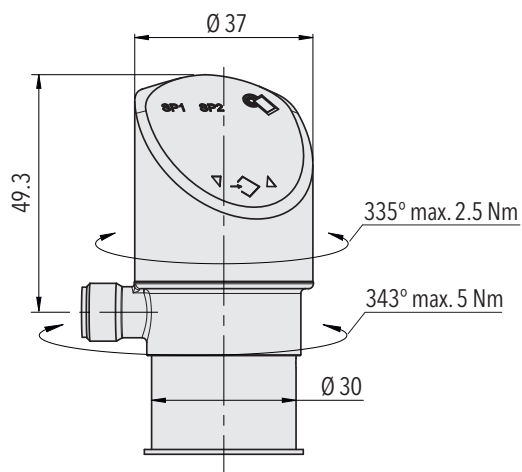
Adjustment range of switchpoints	0 ... 100 % FS		
Switching hysteresis	≥ measuring resolution		
	Switchpoint > reset point		
Switching resistance	≤ 3 Ω		
Output function	Hysteresis, Window; normally closed (NO), normally open (NC)		
Switching current	≤ 0.5 A each switching output		
Current limiting	≤ 2 A each switching output		
Switching frequency	max. 200 Hz		
Delay time	0 ... 99.99 s		

Display

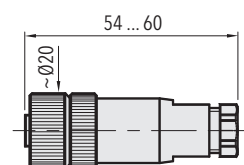
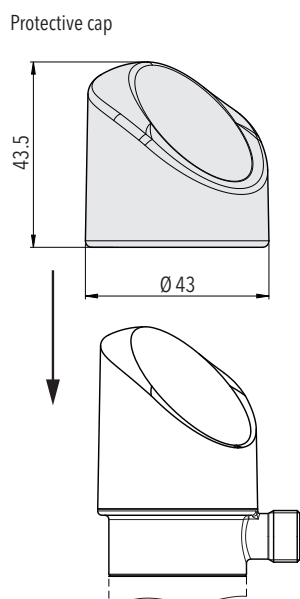
Display	4-digit 7-segment display 180° flippable with disable function Standard decimal places: ≤ 9: 3 decimal places 10 ... 99: 2 decimal places 100 ... 999: 1 decimal place
Switching status indication	2 LED, red
Operation	With 3 buttons and menu navigation according to VDMA 24574-1
Display resolution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

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

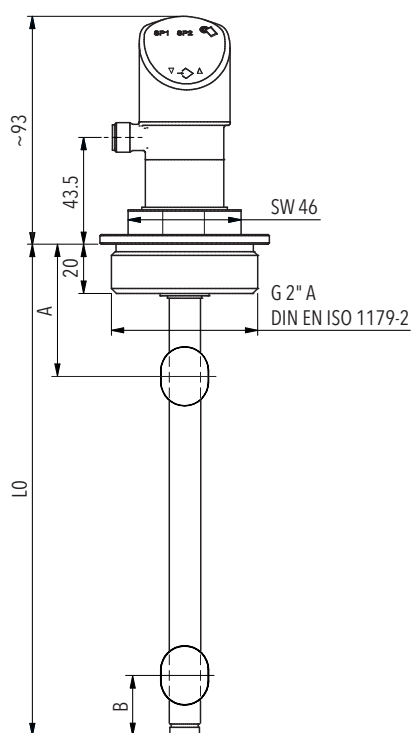
Dimensions



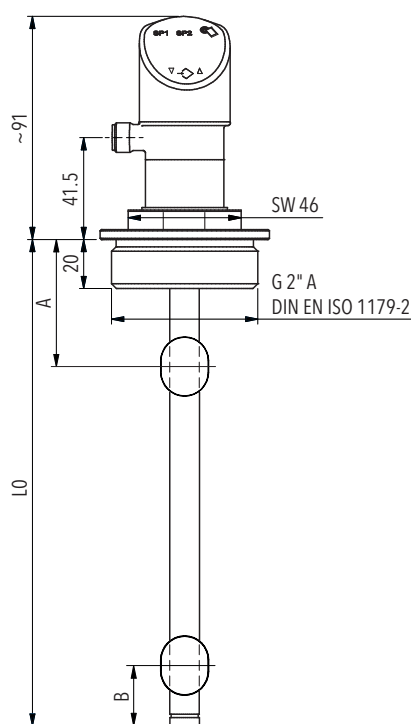
8980.XX.XXXX.35/32.XX.XX



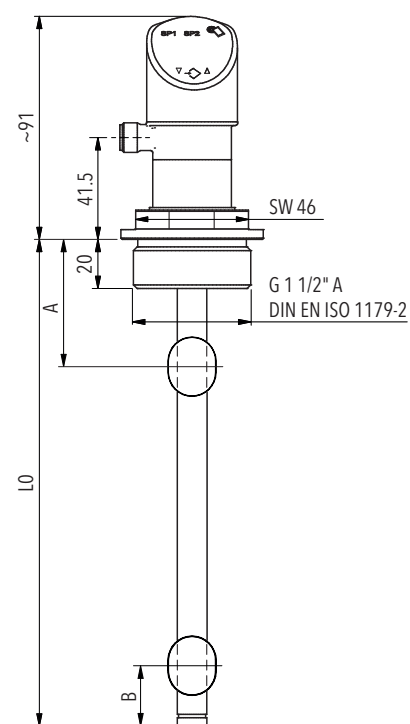
8380.XX.XXXX.XX.XX.33



8980-S-XX-SXX-PX-XXXX-G50



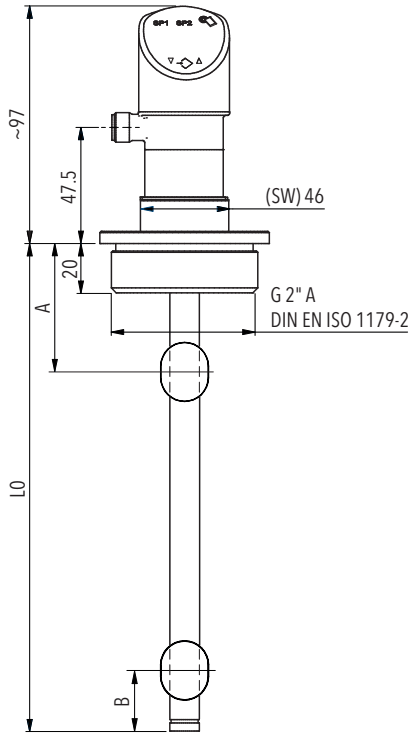
8980-O-XX-BXX-PX-XXXX-G50



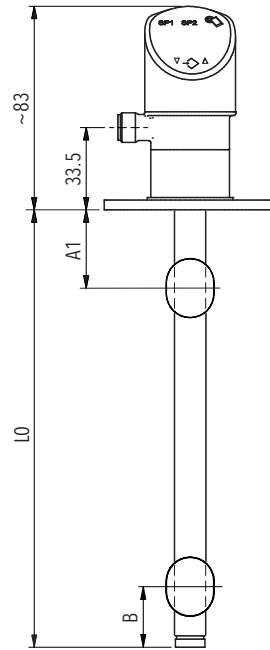
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8980-S-XX-SXXX-PX-XXXX-G40

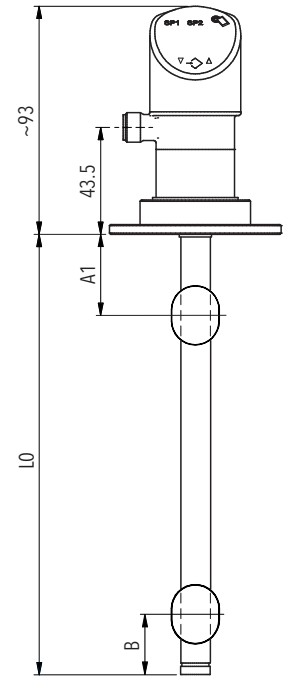
DLFLS 8980



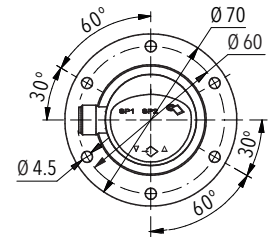
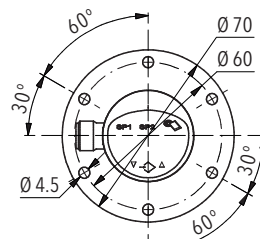
8980-P-XX-X49-PX-XXXX-G50



8980-O-XX-BXX-PX-XXXX-FOH



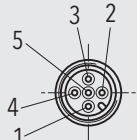
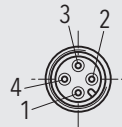
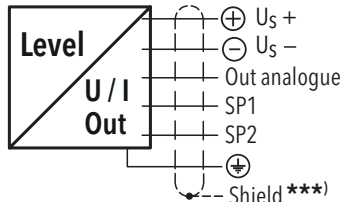
8980-S-XX-SXX-PX-XXXX-FSH

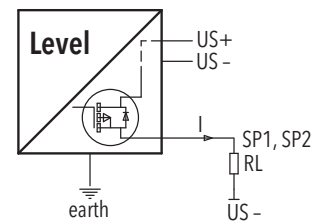


Dimension (mm)

Tab. 5											
	8980-O				8980-S				8980-P		
Code	B20	B28	B45	B44	S29	S52	S53	S10	F49	P49	V49
A	10	15	25	25	15	35	25	50	25	25	25
A1	25	30	40	45	35	55	45	-	45	45	45
B	15	20	30	30	25	40	30	60	30	30	30

Electrical connection

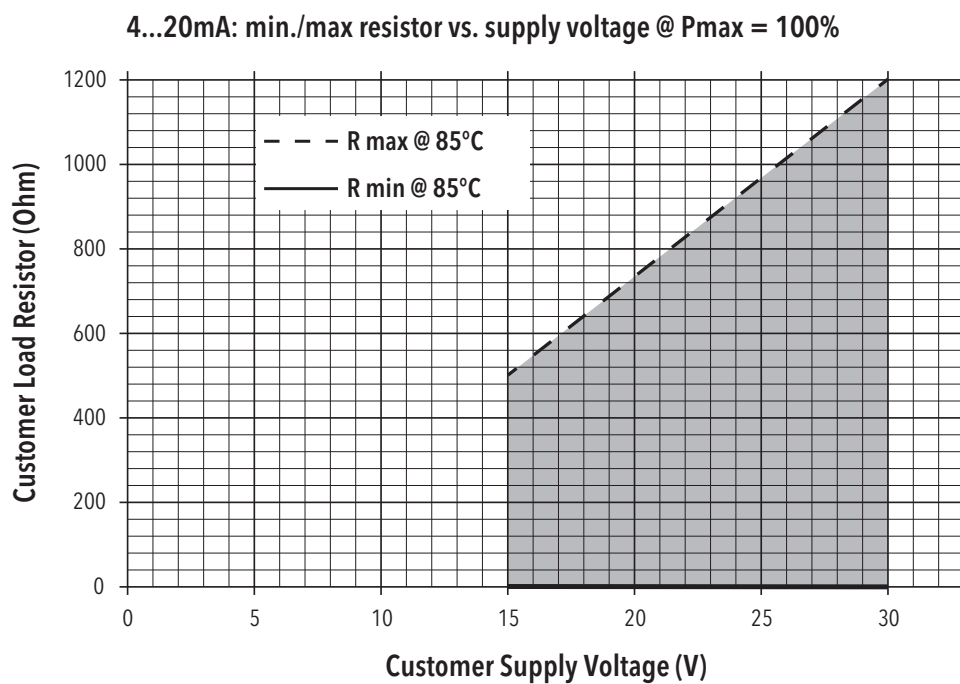
		Protection / electrical connection				
		IP67*)				
		M12x1				
		5-pole 35		4-pole 32		
						
Output signal		P1	P2	P3	P4	
	PA	✓	✓	✓		
	PU	✓	✓	✓		
	PV	✓	✓	✓		
	PW	✓	✓	✓		
	PS				✓	
Pin Configuration			P1	P2	P3	P4
			1 3 2 4 5	1 3 5 4 2	1 3 2 4	1 3 - 4 2
			Shield ***)		Shield ***)	
8980..XX.XXXX.XX.PA/PU/PV/PW/PS						



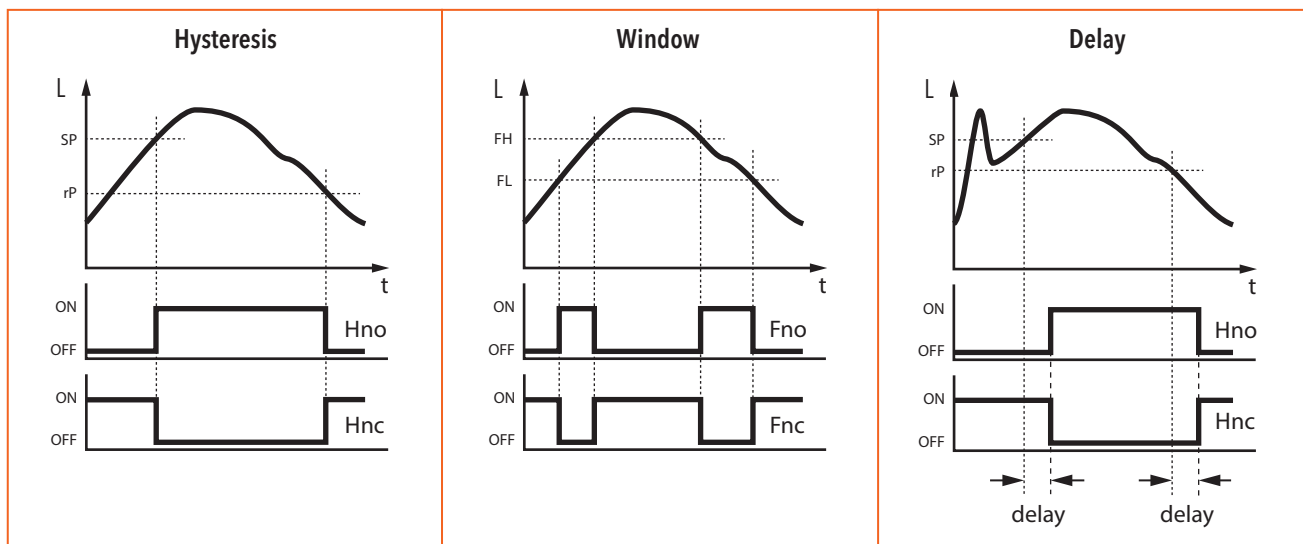
Connection of loads to switching output

^{*)} Provided female connector is mounted according to instructions

^{***)} The use of a shielded cable is recommended



Functions switching output



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