trafag
industrial components

Technical specification

Ambient temperature:	– 30ºC … +85ºC (housing and display)
Media temperature:	– 30ºC … +105ºC
	– 30ºC … +90ºC PP floats
	– 30ºC … +60ºC PVC floats
Protection:	IP65, IP67
Display unit:	mm, inch, user scale, %F.S.
Switching current:	Max. 0.5 A per switching output
Parametrisation:	With 3 buttons and menu navigation or via NFC - Smartphone App

GET IT ON Google Play

Sensor Master by Trafag AG

Type label description

Range Type code Pin assignment
Supply voltage

trafag
industrial components

CE

Type 8980-S-20-Z99-PA-650-G25-35-L-P1-ZS
Range 600mm.
Us+ (1) 15...30V DC | Us– (3)
Out: (2) | SP1(4) | SP2(5)
Batch 190004 | 07/19 | 00.0018.2078

Supply positive
Analogue output
Batch, number
Switching output
Manufacturing date (W/Y)
Serial number
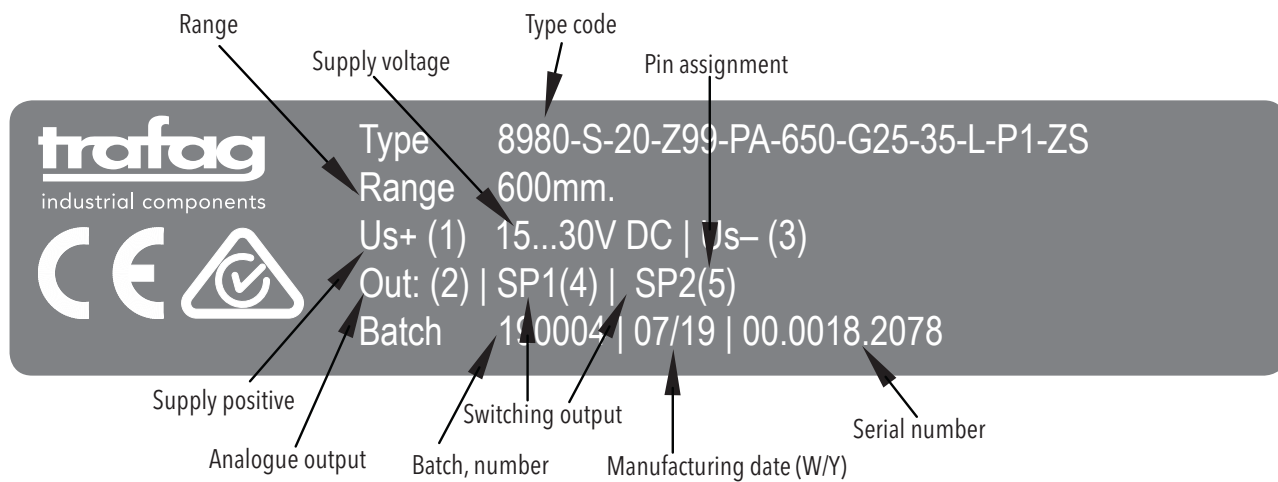
Electrical connection

Ingress Protection	IP65, IP67*⁾	IP65, IP67*⁾
Designation	M12x1 5-pole	M12x1 4-pole
Type code	**8980**.XX.XXXX.**35**	**8980**.XX.XXXX.**32**
Pin configuration		

*⁾ Provided female connector is mounted according to instructions

Output signal / supply voltage

Output	I_{SUPPLY}	U_{SUPPLY}
4 … 20 mA	≤ 30 mA	15 … 30 VDC
0 … 10 VDC	≤ 30 mA	15 … 30 VDC
0 … 5 VDC	≤ 30 mA	15 … 30 VDC
1 … 6 VDC	≤ 30 mA	15 … 30 VDC

General information

Read and understand the operating instruction before starting any work. Keep the instruction for later use.

Functional description

The operating principle of these instruments is based on a chain of reed contacts arranged inside the measuring rod. The reed contacts are activated by a permanent magnet located within the float, which changes its height with the level of the media. A continuous float level instrument consists of one float moving along the whole stem length between the upper and lower stop. The position of the float is evaluated by the electronics to control the outputs accordingly.

Intended use and improper use

This type of float levels can be used exclusively for monitoring the levels of liquid media.

- The floats are suitable for liquids with a maximum viscosity of 150 cst.
- Do not use with liquids with large contamination and liquids that can crystallize.
- Do not use with liquids that are not compatible with the contact parts.
- Do not use with abrasive liquids, highly viscous media and colors.
- Do not use in hazardous areas.
- Do not use near ferromagnetic environments.
- Do not use near strong electromagnetic fields or in the immediate vicinity of equipment that can be affected by magnetic fields.
- Do not use with heavy mechanical strain.
- Do not use this float levels as safety or emergency stop devices.

Trafag shall not be liable for claims of any type based on operation contrary to the intended use.

This float levels must be used only by skilled personnel with appropriate education and training.

Commissioning and mounting

Mount the instruments on the process connection according the respective standards.

If the instruments must be inserted from the top of the tank, but the float(s) do not fit through the opening, the float(s) may be removed for mounting.

Make sure (e.g. through appropriate marking) to reassemble the floats correctly after the installation of the process connection.

Electrical connection

The reed contacts within these instruments may carry and up to 100.000 operations.

Maintenance and cleaning

- When using properly, the instruments does not need any particular maintenance.
- Repairs must only be carried out by the manufacturer.
- External cleaning of the instruments could be done by using a moist cloth.
- Do not use any aggressive cleaning agents.
- Electrical connections must not come into contact with moisture.
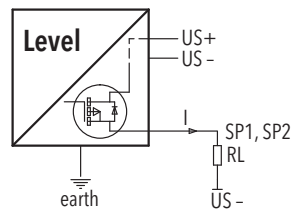
Disposal

Dispose of instrument components and packaging materials in an environmentally compatible way and in accordance with the country-specific waste disposal regulations.
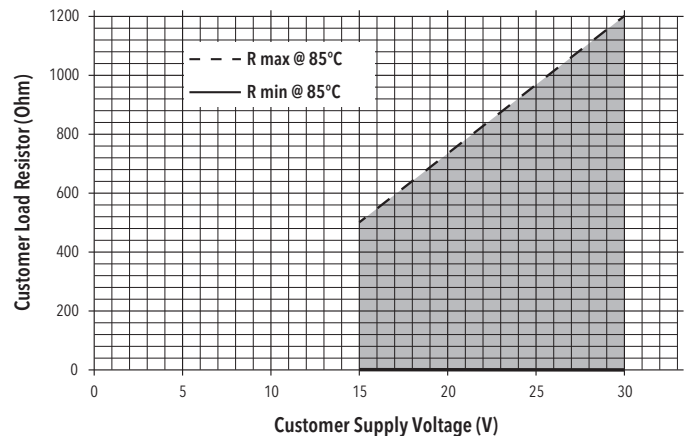
Connection of the measuring equipment

Level U / I Out
- ⊕ U_S +
- ⊖ U_S −
- Out analogue
- SP1
- SP2
- ⊕
- Shield ***)
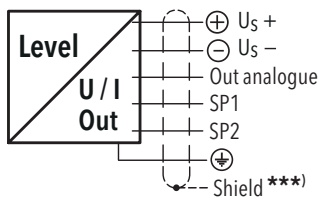
***) The use of a shielded cable is recommended

Level
- US+
- US −
- I → SP1, SP2
- RL
- US −
- earth

Connection of loads to switching output

4...20mA: min./max resistor vs. supply voltage @ Pmax = 100%

Customer Load Resistor (Ohm) vs. Customer Supply Voltage (V)

- – – R max @ 85°C
- —— R min @ 85°C

Mounting

Tighten the device

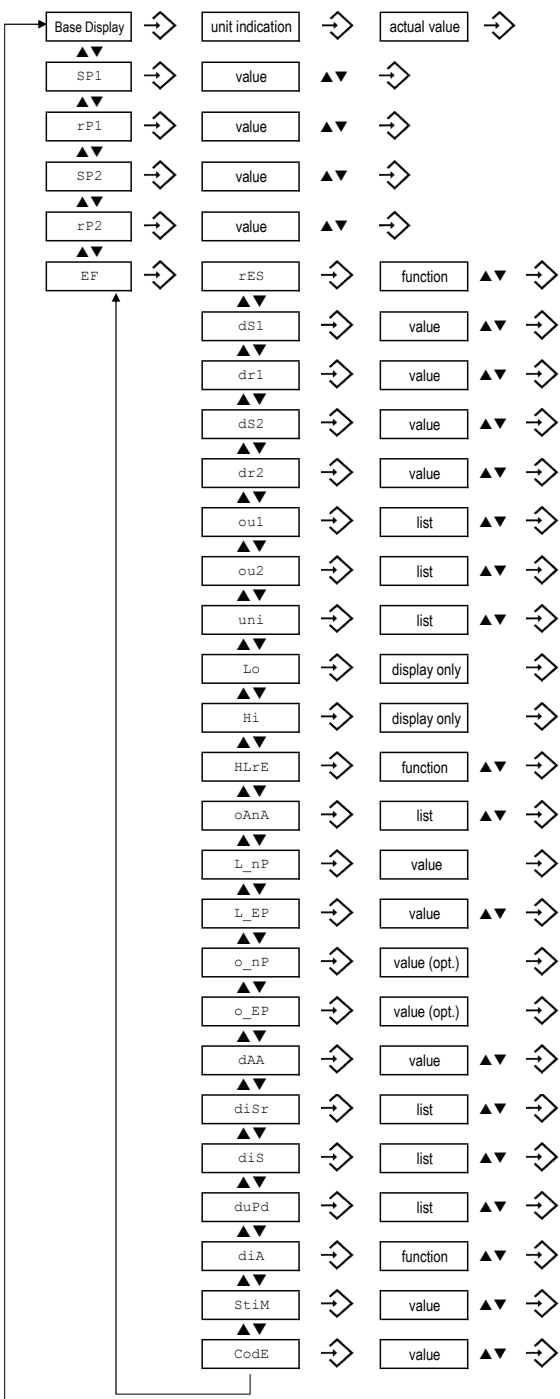max. 2.5 Nm

max. 5 Nm
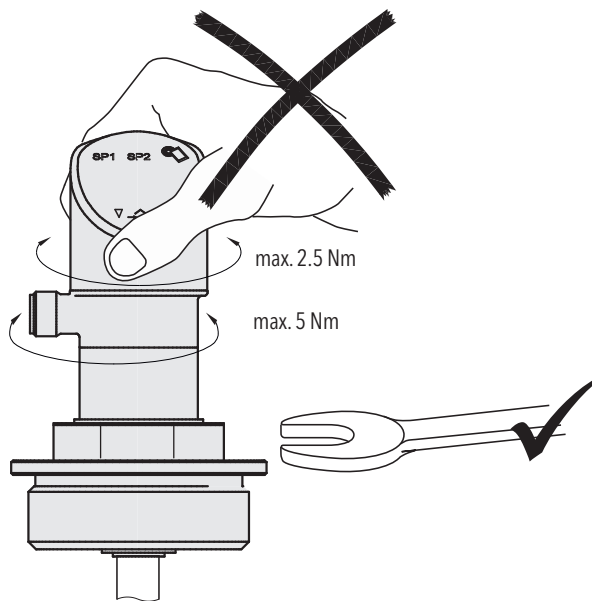
Display indication

|	Description
LErr	Signal processing ist faulty → Please replace measuring device
FALS	Incorrect access code → Enter the correct access code
Sbrk	Sensor break; the sensor element is defective → Please replace the measuring device
Fi2c	Internal device communication is interrupted → Please replace the measuring device
Ecrc	Internal memory damage occured → Execute a factory reset. If the recovery is not successful, replace the measuring device
FE2P	Internal memory damage occurred → Execute a factory reset. If the recovery is not successful, replace the measuring device
EnFc	NFC communication was not successful → Try again to communicate again. If the error persists, replace the measuring device
E.0FC	Zero-set out of range The measured pressure value is outside of the valid range for the zero-set function. → Press [Enter] ◇ on the measuring device to reset the error indication. This error indication does not appear when performing the zero-set function by means of the Sensor Master App (Android smartphone)

Switching output functions

Hysteresis
L, SP, rP, t
ON / OFF — Hno
ON / OFF — Hnc

Window
L, FH, FL, t
ON / OFF — Fno
ON / OFF — Fnc

Delay
L, SP, rP, t
ON / OFF — Hno
ON / OFF — Hnc
dS, dr

Operating menu

Menu flow (top to bottom):

Base Display → unit indication → actual value →
- SP1 → value
- rP1 → value
- SP2 → value
- rP2 → value
- EF →
  - rES → function
  - dS1 → value
  - dr1 → value
  - dS2 → value
  - dr2 → value
  - ou1 → list
  - ou2 → list
  - uni → list
  - Lo → display only
  - Hi → display only
  - HLrE → function
  - oAnA → list
  - L_nP → value
  - L_EP → value
  - o_nP → value (opt.)
  - o_EP → value (opt.)
  - dAA → value
  - diSr → list
  - diS → list
  - duPd → list
  - diA → function
  - StiM → value
  - CodE → value

Description	Value range
SP1: Hysteresis: Switch point: Window: Window high FH1	
SP1: Hysteresis: Reset point: Window: Window low FL1	
SP1: Hysteresis: Switch point: Window: Window high FH2	
SP1: Hysteresis: Reset point: Window: Window low FL2	
Reset to factory settings	
SP1, Switching delay time set, Hysteresis + Window	0.1 … 999.9 s, off (0)
SP1, Switching delay time reset, Hysteresis + Window	0.1 … 999.9 s, off (0)
SP2, Switching delay time set, Hysteresis + Window	0.1 … 999.9 s, off (0)
SP2, Switching delay time reset, Hysteresis + Window	0.1 … 999.9 s, off (0)
SP1, output function	Hno/Hnc/Fno/Fnc
SP2, output function	Hno/Hnc/Fno/Fnc
Level unit	mm, inch, %, user scale
Lowest measured level	
Highest measured level	
Reset highest and lowest level value	
Analogue output type	I, U, off
Level zero point	0 % … 50 % FS [1]
Level end point	50 % … 100 % FS [1]
Analogue output zero-point (optionally adaptable)	
Analogue output end-point (optionally adaptable)	
Damping for the analog output	
Display rotate	normal, 180°
Display mode	actual, highest, lowest, off
Display update rate	1, 2, 5, 20 Hz
Diagnostic mode	
Sampling timer for logger	0.1 … 999.9 s, off (0)
Access code	

[1] L_EP – L_nP $\geq$ 50 % FS
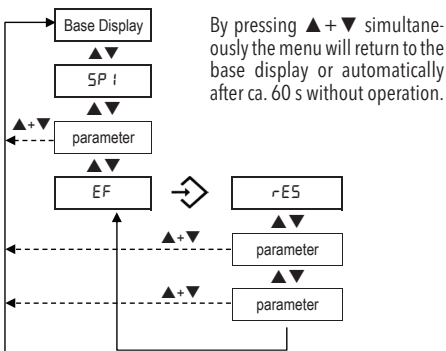
By pressing ▲ + ▼ simultaneously the menu will return to the base display or automatically after ca. 60 s without operation.
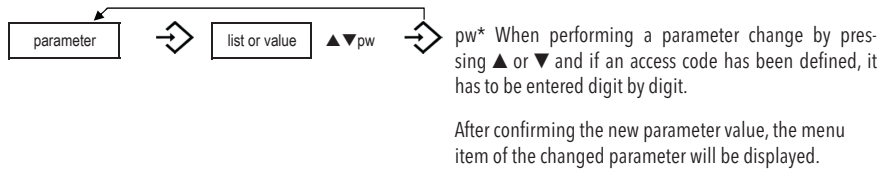
pw* When performing a parameter change by pressing ▲ or ▼ and if an access code has been defined, it has to be entered digit by digit.

After confirming the new parameter value, the menu item of the changed parameter will be displayed.