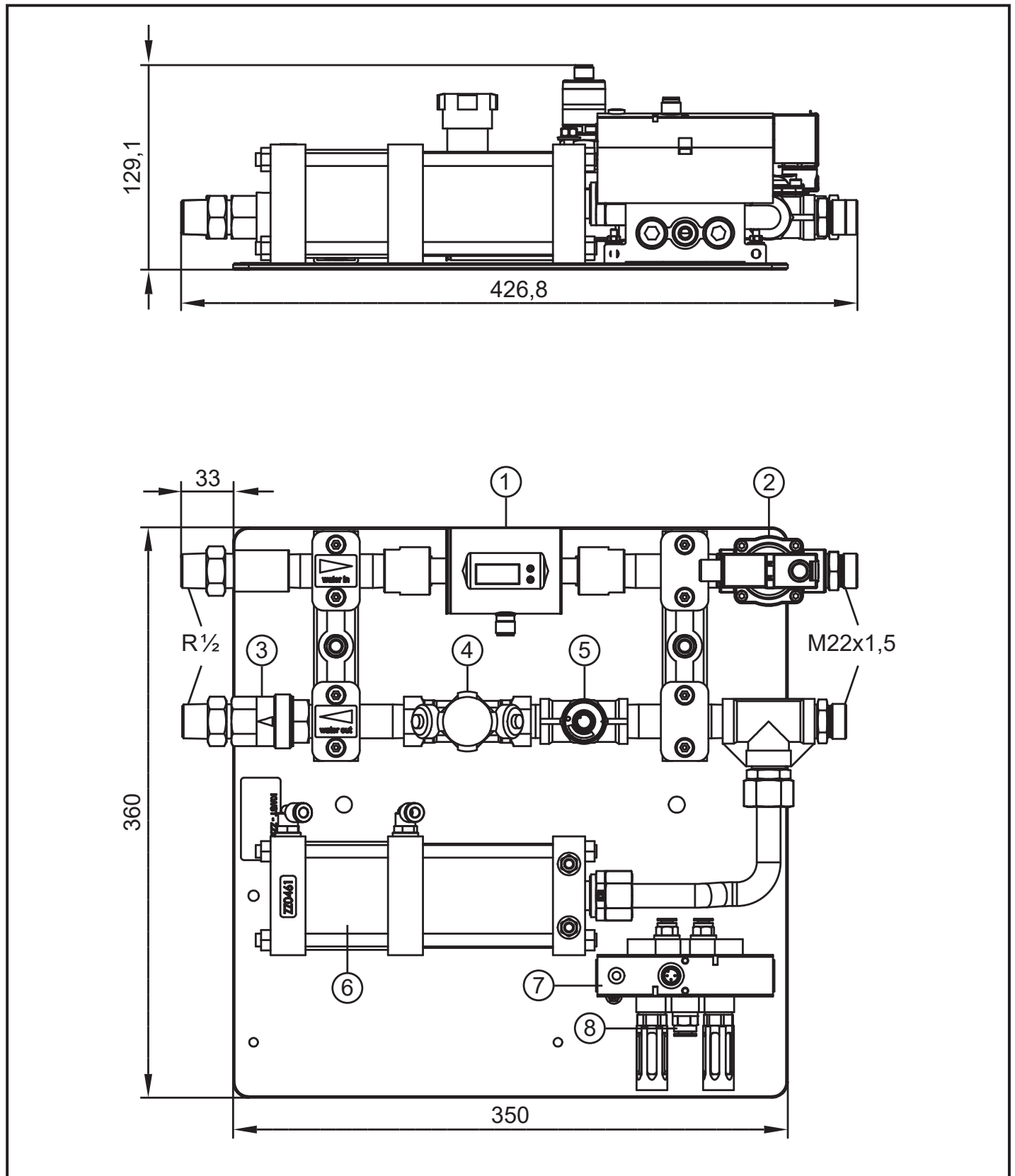


Short instructions
Cooling water control panel
ZZ0432

UK

80000588 / 00 10 / 2021

1 System overview



1	Flow sensor	Monitors and indicates the cooling water flow rate. The setting of two switch points enables detection of: <ul style="list-style-type: none"> - excess flow (leakage / burst pipes / lost tips), - low flow (clogged /damaged pipes).
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2	Water stop valve	Closes the water supply to the system in case of failure and prevents water spillage.
3	Backstop	Prevents cooling water loss through the return pipe in case of failure (broken tip / burst pipe).
4	Regulating valve	Continuous regulation of the flow rate.
5	Pressure sensor	Monitors the operating pressures, very fast response times are attained if pressure falls (broken tips).
6	Expansion cylinder	When a welding tip is replaced or if there is a fault (2/2-way valve in the inlet pipe is closed), the expansion cylinder actively sucks back the cooling water and switches off the pressure.
7	5/2-way valve	The 5/2-way valve controls the expansion cylinder.
8	tube connection	Ø 8 mm

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► Observe the instructions of the sensors → www.ifm.com.

2 Functions and features

Pressure Equipment Directive (PED)

The units comply with the Pressure Equipment Directive and are designed and manufactured for group 2 fluids in accordance with the sound engineering practice.

Use of group 1 fluids on request.

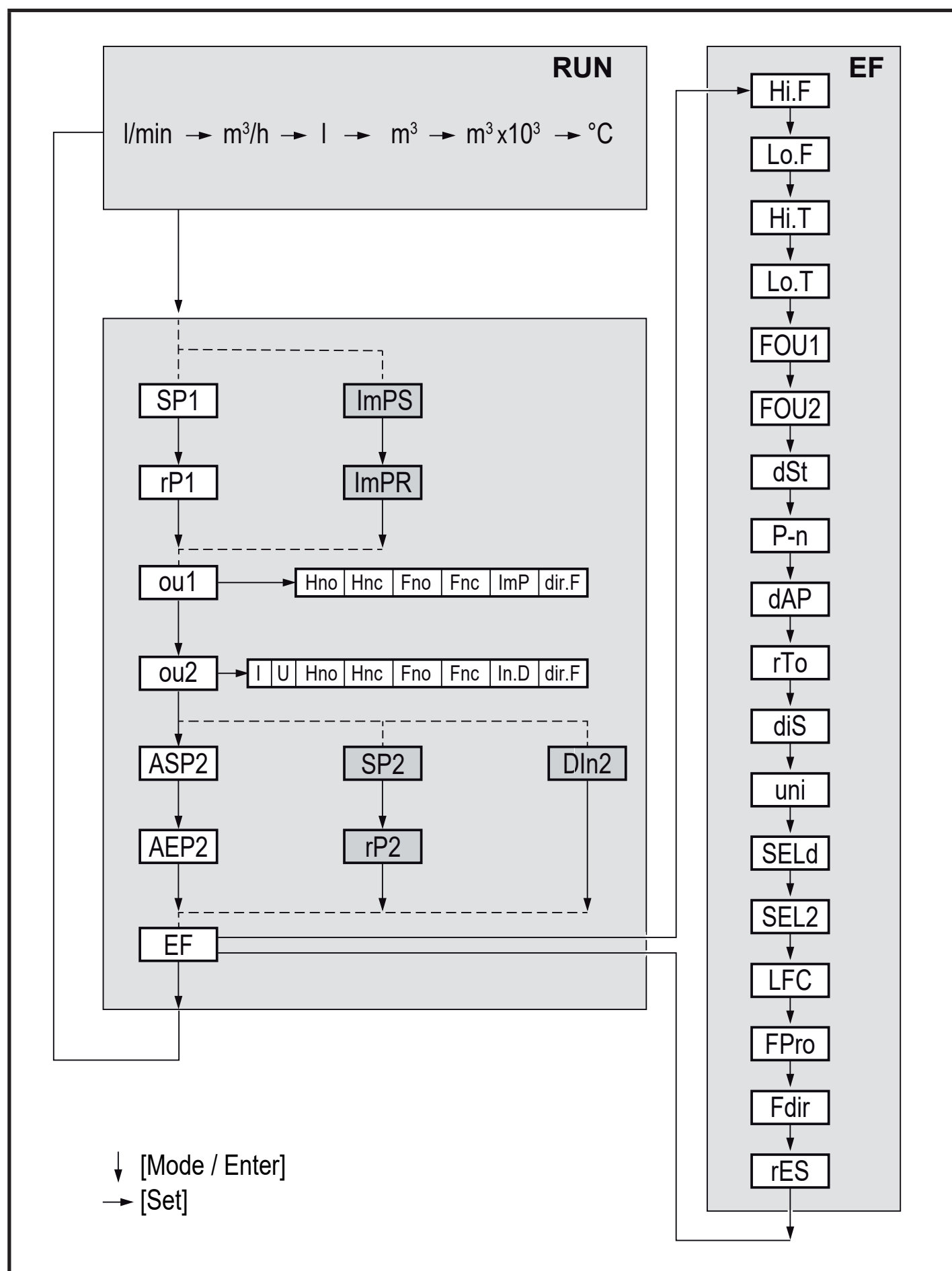
3 Setting of the flow sensor

The flow sensor monitors the flow rate in the supply pipe by means of a window function. This is achieved by setting the output function of the two outputs: OU1 and OU2 = Fno, window / normally open. With this setting an acceptable range is monitored.

The flow rate depends on the water supply and the set-up of the welding tongs. The setting of the switch-on points (SP1, SP2) and the switch-off points (rP1, rP2) depends on the installation.

Optimum monitoring of the start up characteristics as well as processrelated flow fluctuations during operation is possible via additional monitoring times in the robot software.

3.1 Parameter setting



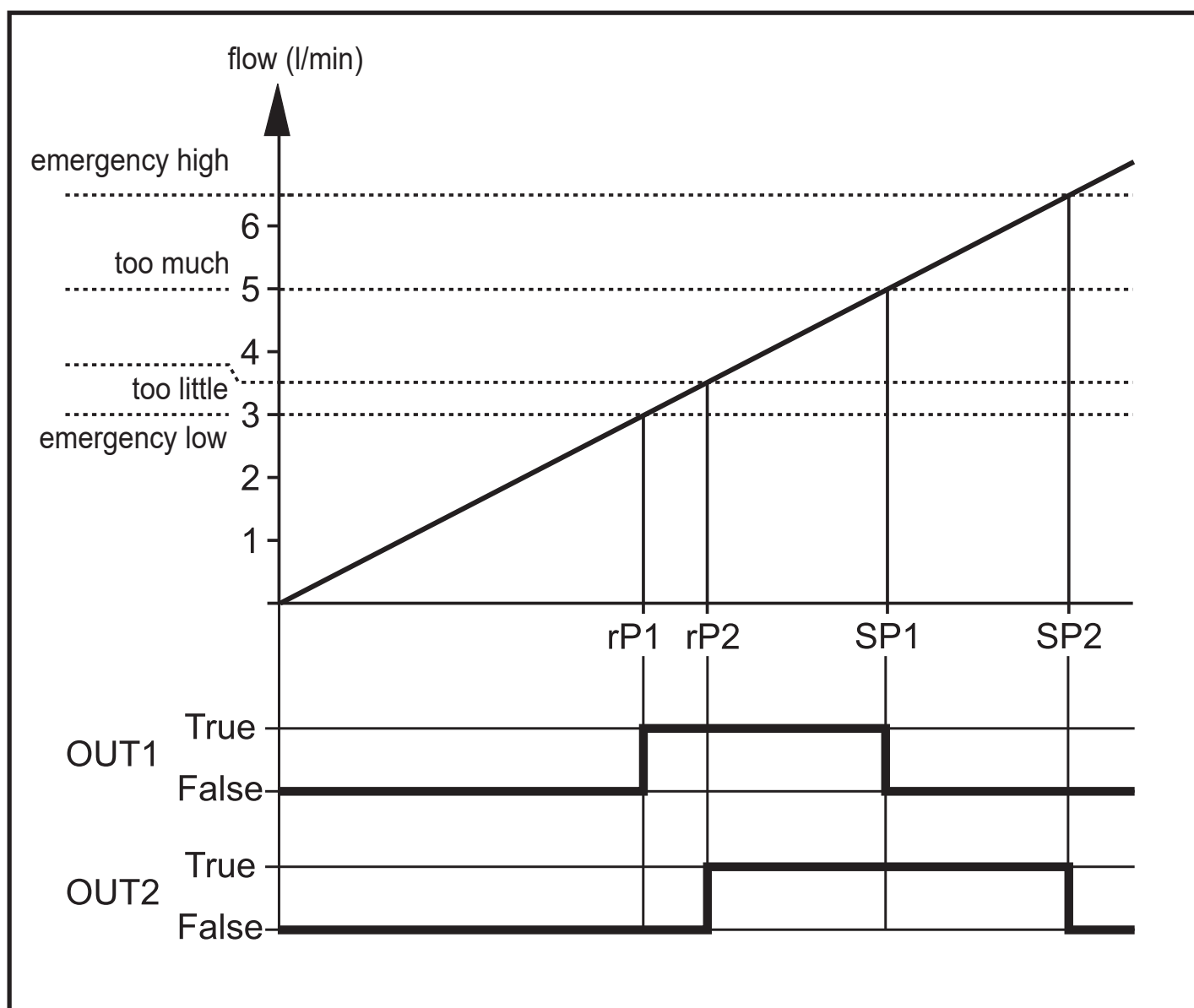
1	Parameter selection	► Press [Mode/Enter] until the requested parameter is displayed.
2	Setting of the parameter value	► Press [Set] and keep it pressed. > Current setting value of the parameter flashes for 5 s. > After 5 s: Setting value is changed: incrementally by pressing the button once or continuously by keeping the button pressed.
3	Acknowledgement of the parameter value	► Press [Mode/Enter] briefly. > The parameter is displayed again. The new setting value is stored.

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Technical data and instructions at www.ifm.com → Data sheet SM6000

3.2 Operating principle of the flow monitoring (Example)



3.3 Monitoring times in the robot software

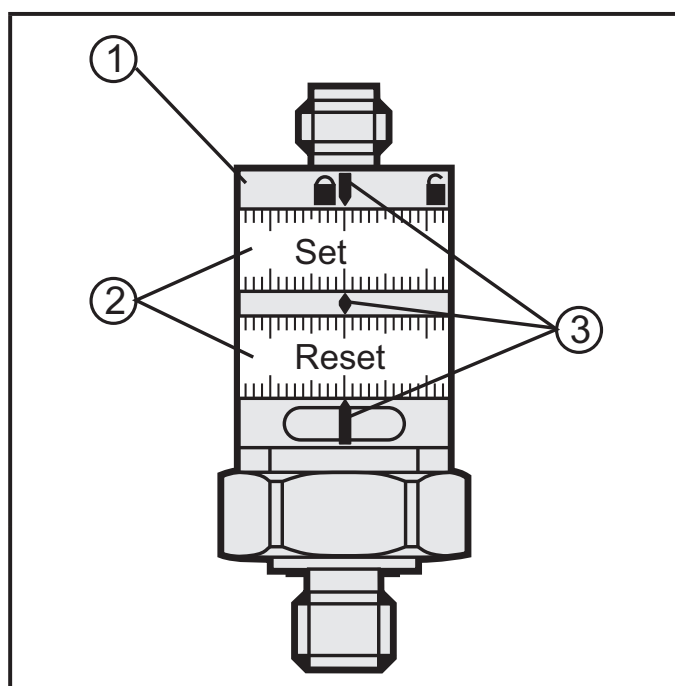
REAL W_ZEIT_EX_ZUW_Z1=2.0	Monitoring time in [s] for emergency low water
REAL W_ZEIT_ZUW_Z1=10.0	Monitoring time in [s] for too little water
REAL W_ZEIT_EX_ZUV_Z1=1.0	Monitoring time in [s] for emergency high water
REAL W_ZEIT_ZUV_Z1=10.0	Monitoring time in [s] for too much water
REAL W_ZEIT_EX_ZUW_ST_Z1=5.0	Emergency low water when the water starts to flow
REAL W_ZEIT_ZUW_ST_Z1=20.0	Too little water in [s] when the water starts to flow
REAL W_ZEIT_DRUCK_Z1=1.0	Monitoring time in [s] pressure fault
REAL W_ZEIT_DRUCK_ST_Z1=2.0	Pressure fault when the water starts to flow

4 Setting of the pressure sensor

The pressure sensor monitors the operating pressure in the return pipe.

The operating pressure depends on the water supply. The setting of the switch-on point [Set] and the switch-off point [Reset] depends on the installation.

The switch point is to be set to a value just below the operating pressure to achieve the shortest possible response time. Ensure that pressure fluctuations due to the system do not trigger a switching operation.



1. Unlock locking ring.
2. Set setting rings to the requested value.
3. Lock locking ring.

factory setting:
Set = 2 bar
Reset = 1.5 bar

- 1: locking ring
2: setting rings
3: setting marks



Technical data and instructions at www.ifm.com → Data sheet PK6524

5 Factory setting

5.1 Flow sensor

	Factory setting	User setting
SP1	5.0	
rP1	3.0	
ImPS	0.05	
ImPR	YES	
OU1	Fno	
OU2	Fno	
SP2 (FLOW)	6.5	
rP2 (FLOW)	3.5	
SP2 (TEMP)	20.0	
rP2 (TEMP)	19.6	
ASP (FLOW)	0.00	
AEP (FLOW)	25.00	
ASP (TEMP)	-20.0	
AEP (TEMP)	80.0	
DIn2	+EDG	
FOU1	OFF	
FOU2	OFF	
dSt	0	
P-n	PnP	
dAP	0.6	
rTo	OFF	
diS	d2	
Uni	Lmin	
SELd	FLOW	
SEL2	FLOW	

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5.2 Pressure sensor

	Factory setting	User setting
SP1	2.0	
rP1	1.5	