PQ

Discharge measurement system

The exact and real time knowledge of water discharge is of central importance for the operation of waste water treatment facilities, cost allocation in sewage networks and management of communal and industrial water resources.

The PQ continuously measures the water or effluent flow through ducts, pipes and open canals in sewer networks, water treatment plants and industrial facilities. It combines two sensors in one system. The first determines the water level by means of a pressure probe or radar sensor, the second simultaneously measures the mean flow velocity with an ultrasonic Doppler sensor.

Versions

Art	Version
	PQ incl. SOMFLOW velocity sensor and PTM pressure probe
	PQ incl. SOMFLOW velocity sensor and SOMLEVEL radar level sensor

Scope of delivery

Qty	Name
1	PQ-Controller
1	SOMFLOW ultrasonic Doppler velocity sensor
1	PTM level sensor or SOMLEVEL-15 radar level sensor

Accessories

Art	Accessories
21640	Mounting bracket for SOMLEVEL radar level sensor

Specifications

PTM pressure probe	
Measurement range	0 ... 10m, 0 ... 1bar piezo membrane, absolute pressure, temperature compensated
Accuracy	±0.05 %
Long term stability	< 0.2% FS / < 4 mbar (1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor)
Output	SID-12 V1.3
Operating temperature	-10° C ... +80° C
Storage temperature	-10° C ... +80° C
Size L x ∅	160 x 24 mm
Weight	200 g
Material	Stainless steel (316L / 1.4404)
Seals	Viton (Standard), EPDM, Kalrez

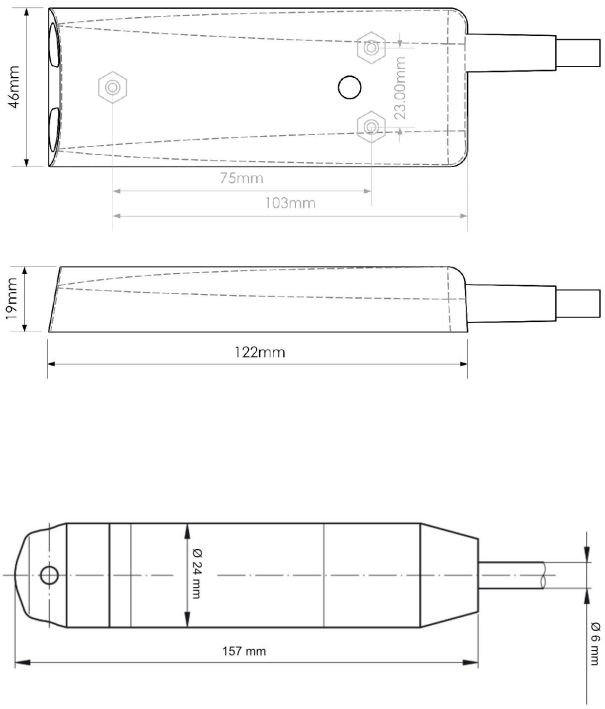
SOMLEVEL level sensor	
Measurement range	up to 15 m (49.21 ft)
Accuracy	≤ 2 mm
Beam angle	8°
Measurement frequency	W-band (80 GHz)
Mounting connection	Thread G1, 1NPT, R1
Process pressure	-1 ... +3 bar (-100 ... 200 kPa, -14.5 ... 43.51 psig)
Process temperature	-40 ... +80 °C (-40 ... +176 °F)

SOMLEVEL level sensor	
Ambient temperature	-40 ... +80 °C (-40 ... +176 °F)
Size Ø x H	Straight cable output: Ø76 x 109 mm (Ø2.99 x 4.28 in)
Weight	0.7 kg (1.543 lbs)
Material	Wetted parts: PVDF Process seal: FKM Connection cable: PVC insulated
Protection rating	IP68

SOMFLOW ultrasonic Doppler sensor	
Measurement range	Bi-directional 0.01 to 5 m/s (0.03 to 16.4 ft/s)
Accuracy	± 2 % of reading if V ≥0.5m/s (1.64 ft/s) ± 0.01 m/s (± 0.03 ft/s) if V<0.5m/s (1.64 ft/s)
Resolution	1 mm/s (0.003ft/s)
Minimum fluid level	5 mm (0.59 in) to 20mm (0.79in) above base of sensor, provided transducers fully wetted
Immersion	up to 1 bar
Principle	Doppler sensor using twin 1 MHz transducers
Operating temperature	-20 to +60 °C (fluid non-freezing)
Storage temperature	-20 to +70 °C
Size L x B x H	122 x 46 x 19 mm
Weight	1.1 kg (incl. 10-m cable)
Material	PVDF, polyurethane, 316 Stainless steel

PQ-Controller	
Power supply	9...28 VDC; Overvoltage and reverse voltage protection deep-discharge protected if used with optional battery
Outputs	- RS-485 (9600...115200 Baud), Modbus RTU - SDI-12 (version 1.3) - 3x 4 ... 20 mA output (level, velocity and flow) - Impulse output of flow volume - Switch for limit monitoring
Measurement interval	2 s ... 12 h (default 60 s)
Statistics interval	10 s ... 12 h
Operating temperature	-40...60 °C (-40...140 °F)
Storage tem-	-40...60 °C (-40...140 °F)

PQ-Controller	
perature	
Protection rating	IP67
Lightning protection	Integrated protection against indirect lightning with a discharge capacity of 6 kA Ppp
Housing material	Aluminium, powder coated
Power supply	9...28 VDC; Overvoltage and reverse voltage protection deep-discharge protected if used with optional battery



PV

Flow velocity sensor

The exact and real time knowledge of water discharge is of central importance for the operation of waste water treatment facilities, cost allocation in sewage networks and management of communal and industrial water resources.

The PV continuously measures the water or effluent velocity through ducts, pipes and open canals in sewer networks, water treatment plants and industrial facilities.

Versions

Art	Version
21767	PV incl. SOMFLOW velocity sensor and controller

Scope of delivery

Qty	Name
1	PQ-Controller
1	SOMFLOW ultrasonic Doppler velocity sensor

Accessories

Art	Accessories

Specifications

SOMFLOW ultrasonic Doppler sensor	
Measurement range	Bi-directional 0.01 to 5 m/s (0.03 to 16.4 ft/s)
Accuracy	± 2 % of reading if V ≥0.5m/s (1.64 ft/s) ± 0.01 m/s (± 0.03 ft/s) if V<0.5m/s (1.64 ft/s)
Resolution	1 mm/s (0.003ft/s)
Minimum fluid level	5 mm (0.59 in) to 20mm (0.79in) above base of sensor, provided transducers fully

SOMFLOW ultrasonic Doppler sensor	
	wetted
Immersion	up to 1 bar
Principle	Doppler sensor using twin 1 MHz transducers
Operating temperature	-20 to +60 °C (fluid non-freezing)
Storage temperature	-20 to +70 °C
Size L x B x H	122 x 46 x 19 mm
Weight	1.1 kg (incl. 10-m cable)
Material	PVDF, polyurethane, 316 Stainless steel

PQ-Controller	
Power supply	9...28 VDC; Overvoltage and reverse voltage protection deep-discharge protected if used with optional battery
Outputs	- RS-485 (9600...115200 Baud), Modbus RTU - SDI-12 (version 1.3) - 3x 4 ... 20 mA output (level, velocity and flow) - Impulse output of flow volume - Switch for limit monitoring
Measurement interval	2 s ... 12 h (default 60 s)
Statistics interval	10 s ... 12 h
Operating temperature	-40...60 °C (-40...140 °F)
Storage temperature	-40...60 °C (-40...140 °F)
Protection rating	IP67

PQ-Controller	
Lightning protection	Integrated protection against indirect lightning with a discharge capacity of 6 kA Ppp
Housing material	Aluminium, powder coated
Power supply	9...28 VDC; Overvoltage and reverse voltage protection deep-discharge protected if used with optional battery