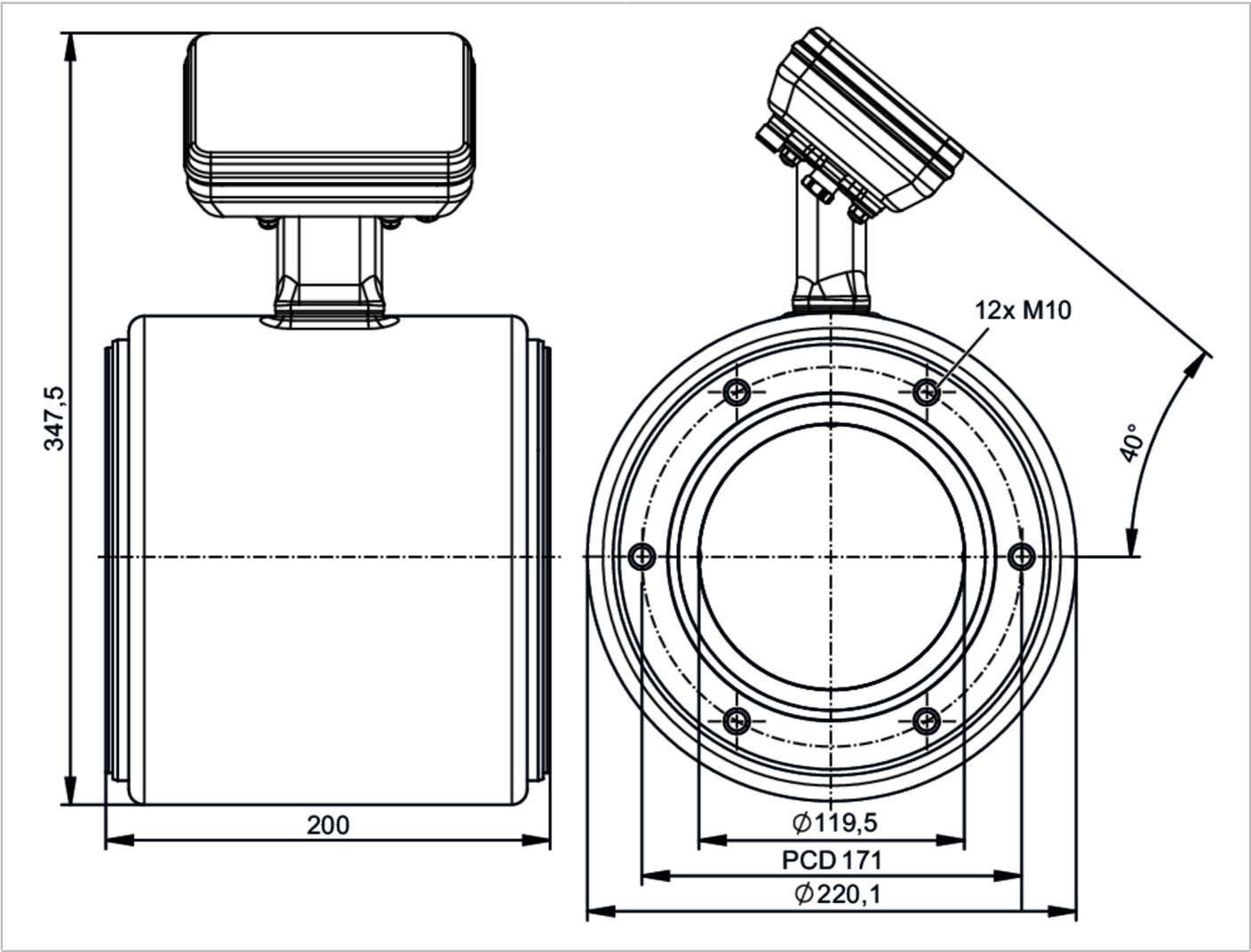


SMF850



Magnetic-inductive flow meter

SMGX1KGFFRKG/UST



Product characteristics

Measuring range	75...7500 l/min	4.5...450 m³/h	20...1981 gpm	0.33...33.42 ft/s
Nominal diameter	DN125 (5")			
Process connection	ifm-specific device flange			

Application

Special feature	Gold-plated contacts			
Application	food and beverage industry			
Media	conductive liquids; water; hydrous media			
Note on media	food products such as beer, milk, fruit juices, soft drinks, ketchup, yoghurt, yoghurt toppings, ice cream			
	conductivity: $\geq 5 \mu\text{S/cm}$			
Medium temperature [°C]	-20...150			
Min. bursting pressure	24 bar	348 psi	2.4 MPa	
Pressure rating	16 bar	232 psi	1.6 MPa	

Electrical data

Operating voltage [V]	18...32 DC			
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Current consumption	[mA]	250; (24V)
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	< 5
Measuring principle		magnetic-inductive

Inputs / outputs

Total number of inputs and outputs	2
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Inputs

Inputs	OUT2	external totaliser reset
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Outputs

Total number of outputs	2	
Output signal	OUT1	pulse signal; totaliser switching signal; diagnostic signal; IO-Link
	OUT2	analogue signal; pulse signal; totaliser switching signal; diagnostic signal
Electrical design	PNP/NPN	
Pulse output	flow rate meter	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	

Analogue

Number of analogue outputs		1
Analogue current output	[mA]	4...20; (skalierbar)
Max. load	[Ω]	500
Resolution of analogue output		0.38 μA

Digital

Number of digital outputs		2
Max. voltage drop switching output DC	[V]	2
Permanent current rating of switching output DC	[mA]	100
Switching frequency DC	[Hz]	0...10000

Measuring/setting range

Measuring range	75...7500 l/min	4.5...450 m³/h	20...1981 gpm	0.33...33.42 ft/s
Note on factory setting		0...110,0 m³/h		
Analogue start point ASP	-7500...6000 l/min	-450...360 m³/h	-1981...1585 gpm	-33.42...26.73 ft/s
Analogue end point AEP	-6000...7500 l/min	-360...450 m³/h	-1585...1981 gpm	-26.73...33.42 ft/s
Low flow cut-off LFC	0...6000 l/min	0...360 m³/h	0...1585 gpm	0...26.73 ft/s
Pulse length	[s]	0.00005...2		
Pulse value		0.013...99999000 l		

Temperature monitoring

Measuring range	-20...150 °C	-4...302 °F
Analogue start point	-20...116 °C	-4...240.8 °F
Analogue end point	14...150 °C	57.2...302 °F



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Conductivity monitoring		
Measuring range	[μS/cm]	100...100000
Analogue start point	[μS/cm]	0...80000
Analogue end point	[μS/cm]	20000...100000
Accuracy / deviations		
Volumetric flow monitoring		
Accuracy (in the measuring range)	with optional factory calibration (availability is being planned)	± (0,2 % MW + 2 mm/s)
	standard	± (0,5 % MW + 1,5 mm/s)
Repeatability		0,1% MW
Temperature monitoring		
Accuracy	[K]	± 1
Repeatability	[K]	± 0,5
Conductivity monitoring		
Accuracy (in the measuring range)	in the range of 100...20000 μS/cm	±10% MW
	in the range of 20000...100000 μS/cm	±20% MW
Repeatability		± 5% MW
Response times		
Volumetric flow monitoring		
Response time	[s]	< 0.3
Damping process value dAP	[s]	0...5
Temperature monitoring		
Response time	[s]	< 3; (flow velocity: ≥ 0,5m/s)
Conductivity monitoring		
Response time	[s]	< 2
Software / programming		
Diagnostic functions		direction of flow detection; liquid detection
Interfaces		
Communication interface		IO-Link
Transmission type		COM3 (230,4 kBaud)
IO-Link revision		1.1.3
SDCI standard		IEC 61131-9
Profiles	Common - I&D	Identification and Diagnosis
	Smart Sensor - SSP 4.3.4	Measuring and Switching Sensor, floating point, 4 channel
SIO mode		yes
Required master port type		A
Process data analogue		6
Process data binary		8
Min. process cycle time	[ms]	1.9



Magnetic-inductive flow meter

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IO-Link process data (cyclical)	function	bit length
	totaliser	32
	flow	32
	temperature	32
	conductivity	32
	status	4
	binary switching information	8
IO-Link functions (acyclical)	direction of flow detection; totaliser; memory; operating hours counter; internal temperature; simulation function	
Supported DeviceIDs	Type of operation	DeviceID
	default	1806

Operating conditions		
Ambient temperature	-20...65 °C	-4...149 °F
Storage temperature	-20...80 °C	-4...176 °F
Protection	IP 67; IP 69; (to DIN EN 60529)	

Tests / approvals		
EMC	DIN 61326-1	
Shock resistance	DIN IEC 68-2-27	20 g (18ms)
Vibration resistance	DIN IEC 68-2-6	5 g (10...2000Hz)
MTTF [years]		83
UL approval	UL approval no.	I032
	File number UL	E174189
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight [g]		15024
Housing		cylindrical
Inlet pipe length		5 x DN
Outlet pipe length		2 x DN
Dimensions [mm]		Ø 220.1 / L = 200
Materials	housing: stainless steel (316L/1.4404); flange: stainless steel (304/1.4301); electronics fixture: stainless steel (304/1.4301); electronics: stainless steel (316L/1.4404); LED ring: PP	
Materials (wetted parts)	Pipe section: PFA; electrodes: stainless steel (316L/1.4435)	
Nominal diameter		DN125 (5")
Process connection		ifm-specific device flange
Surface characteristics Ra/Rz of the wetted parts		Ra < 0.4 µm

Displays / operating elements		
Display	operating status	LED ring, three-colour
Factory setting	m³/h; °C; µS/cm	

SMF850



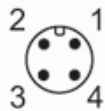
Magnetic-inductive flow meter

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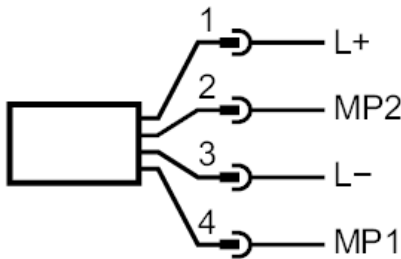
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
	pulse and totaliser signal are only available for one of the two outputs
	reference conditions (1/2): water (free of gas bubbles), 15...35 °C, process connection: DIN32676 series A, pipe standard suitable for process connection
	reference conditions (2/2): inlet pipe length 10xDN, outlet pipe length 5xDN, device settling time: 30 minutes, device orientation: horizontal, display orientation: up
Pack quantity	1 pcs.

Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection



1	L+	
2	MP2	DO2, AO, reset
3	L-	
4	MP1	DO1, IO-Link

AO: analogue output; DO: digital output; MP: multi-function connection