

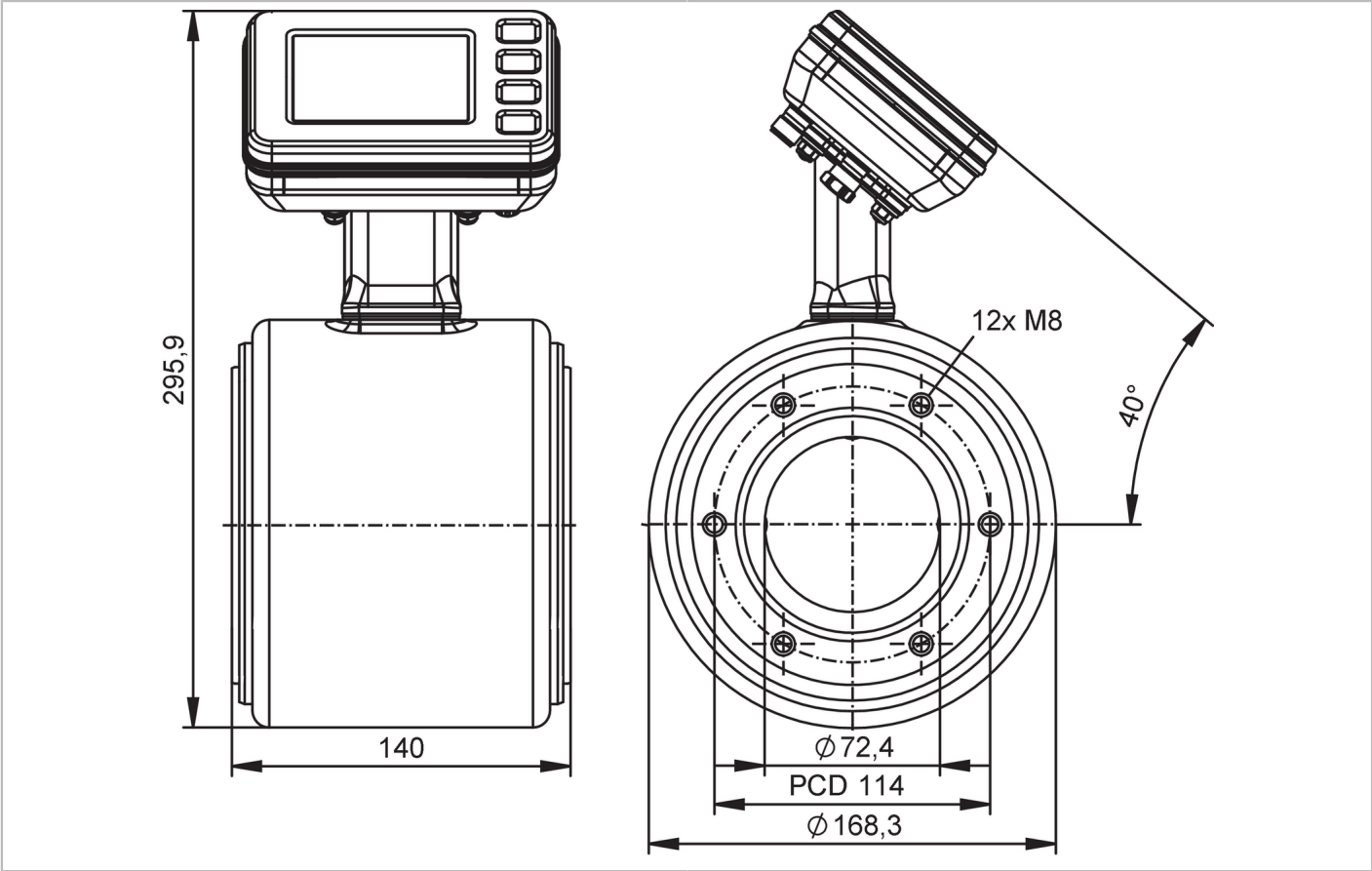
SMF620



Magnetic-inductive flow meter

SMG80KGFFRKG/USD

A suitable process adapter and a seal are also required to set up the sensor.
The right products can be found in the accessories section.



Product characteristics				
Measuring range	30...3000 l/min	1800...180000 l/h	0.1...10 m/s	1.8...180 m³/h
Nominal diameter	DN80 (3")			
Process connection	ifm-specific device flange			
Application				
Special feature	gold-plated contacts			
Application	food and beverage industry			
Media	Conductive liquids; water; water-based media			
Note on media	food products such as beer, milk, fruit juices, soft drinks, ketchup, yogurt, yogurt toppings, ice cream			
	conductivity: ≥ 5 µS/cm			
Medium temperature	[°C]	-20...150		
Min. burst pressure	37.5 bar	3.75 MPa		
Pressure rating	25 bar	2.5 MPa		
Electrical data				
Operating voltage	[V]	18...32 DC		
Current consumption	[mA]	250; (24V)		
Protection class		III		

SMF620



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Reverse polarity protection	yes			
Power-on delay time [s]	< 5			
Measuring principle	magnetic-inductive			
Inputs / outputs				
Total number of inputs and outputs	2			
Inputs				
Inputs	OUT2	external totalizer reset		
Outputs				
Total number of outputs	2			
Output signal	OUT1	pulse signal; totalizer switching signal; diagnostic signal; IO-Link		
	OUT2	analog signal; pulse signal; totalizer switching signal; diagnostic signal		
Electrical design	PNP/NPN			
Pulse output	flow rate meter			
Short-circuit protection	yes			
Type of short-circuit protection	yes (non-latching)			
Overload protection	yes			
Analog				
Number of analog outputs	1			
Analog current output [mA]	4...20; (skalierbar)			
Max. load [Ω]	500			
Resolution of analog 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	30...3000 l/min	1800...180000 l/h	0.1...10 m/s	1.8...180 m³/h
Display range	-3600...3600 l/min	-216000...216000 l/h	-12...12 m/s	-216...216 m³/h
Resolution	0.1 l/min	200 l/h	0.01 m/s	0.2 m³/h
Note on factory setting	0...45,0 m³/h			
Analog start point ASP	-3000...2400 l/min	-180000...144000 l/h	-9.95...7.95 m/s	-180...144 m³/h
Analog end point AEP	-2400...3000 l/min	-144000...180000 l/h	-7.95...9.95 m/s	-144...180 m³/h
Low flow cut-off LFC	0...2400 l/min	0...144000 l/h	0...7.95 m/s	0...144 m³/h
Pulse length [s]	0.00005...2			
Pulse value	0.005...99990000 l			
Temperature monitoring				
Measuring range [°C]	-20...150			
Display range [°C]	-20...150			
Resolution [°C]	0.01			

SMF620



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Analog start point	[°C]	-20...116
Analog end point	[°C]	14...150
Conductivity monitoring		
Measuring range	[μS/cm]	100...100000
Display range	[μS/cm]	0...10000000
Resolution	[μS/cm]	1
Analog start point	[μS/cm]	0...80000
Analog end point	[μS/cm]	20000...100000
Accuracy / deviations		
Volumetric flow monitoring		
Accuracy (under reference conditions)	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 (v > 0,5 m/s)
Repeatability	[K]	± 0,5 (v > 0,5 m/s)
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
Reaction times		
Volumetric flow monitoring		
Response time	[s]	< 0.3
Damping process value dAP	[s]	0...5
Temperature monitoring		
Response time	[s]	< 3; (v > 0,5 m/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

SMF620



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Profiles	Smart Sensor - SSP 4.3.4		Measuring and Switching Sensor, floating point, 4 channel
	BLOB		Binary Large Object transfer
	Common - I&D		Identification and Diagnosis
	Extension		Sensor Control Wide
	Extension		Quantity detection, switches when value exceeds the setpoint
	Function		Locator
	Function		ProductURI
SIO mode	yes		
Required master port class	A		
Process data analog	6		
Process data binary	8		
Min. process cycle time [ms]	1.9		
IO-Link process data (cyclical)	Function	bit length	
	totalizer	32	
	flow	32	
	temperature	32	
	conductivity	32	
	status	4	
	binary switching information	8	
IO-Link functions (acyclical)	direction of flow detection; totalizer; memory; operating hours counter; internal temperature; simulation function		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1798	
Operating conditions			
Ambient temperature [°C]	-20...65		
Storage temperature [°C]	-20...80		
Protection	IP 67; IP 69; (to DIN EN 60529)		
Tests / approvals			
EMC	DIN 61326-1		
CPA approval	model number	SMF	
	accuracy class	0,5	
Shock resistance	DIN IEC 68-2-27	20 g (18ms)	
Vibration resistance	DIN IEC 68-2-6	5 g (10...2000Hz)	
MTTF [years]	81		
UL approval	UL approval number	I031	
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request		
Mechanical data			
Weight [g]	7767.4		
Housing	tubular		
Inlet pipe length	5 x DN		
Outlet pipe length	2 x DN		
Dimensions [mm]	Ø 168.3 / L = 140		
Material	housing: stainless steel (1.4404 / 316L); flange: stainless steel (1.4301 / 304); electronics fixture: stainless steel (1.4301 / 304); electronics: stainless steel (1.4404 / 316L); Display: polysulfone; Display-sealing: FKM; LED ring: PP		

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Materials (wetted parts)	Pipe section: PFA; electrodes: stainless steel (1.4435 / 316L)
Nominal diameter	DN80 (3")
Process connection	ifm-specific device flange
Surface characteristics Ra/Rz of the wetted parts	Ra < 0.4 µm

Displays / operating elements

Display	process value	full graphics TFT display, multi-color 3,5" 320 x 240 Pixel
		display layouts: 4
		display rotation: 4 x 90°
	operating status	LED ring, three-color
Display unit	l/min; l/h; hl/min; hl/h; m³/min; m³/h; m/s; °C; µS/cm; S/m; ms/cm	
Factory setting	m³/h; °C; µS/cm	
Language	German; English; Spanish; French; Italian; Japanese; Korean; Portuguese; Chinese	
Operating elements	4	capacitive pushbuttons

Remarks

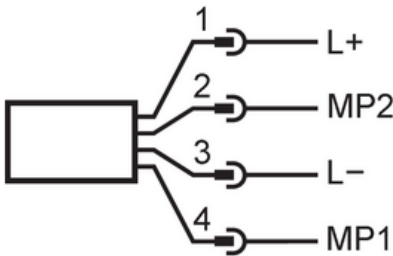
Remarks	MW = Measured value	
	MEW = Final value of the measuring range	
	pulse and totalizer signal are only available for one of the two outputs	
	reference conditions (1/2): water (free of gas bubbles), 15...35 °C, process connection: DIN32676 series A, pipe standard suitable for process connection	
	reference conditions (2/2): inlet pipe length 10xDN, outlet pipe length 5xDN, device settling time: 30 minutes, device orientation: horizontal, display orientation: up	
	accuracy specifications according to factory certificate on delivery	
Notes	A suitable process adapter and a seal are also required to set up the sensor.; The right products can be found in the accessories section.	
Pack quantity	1 pcs.	

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



Connection



Electrical connection - plug

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

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