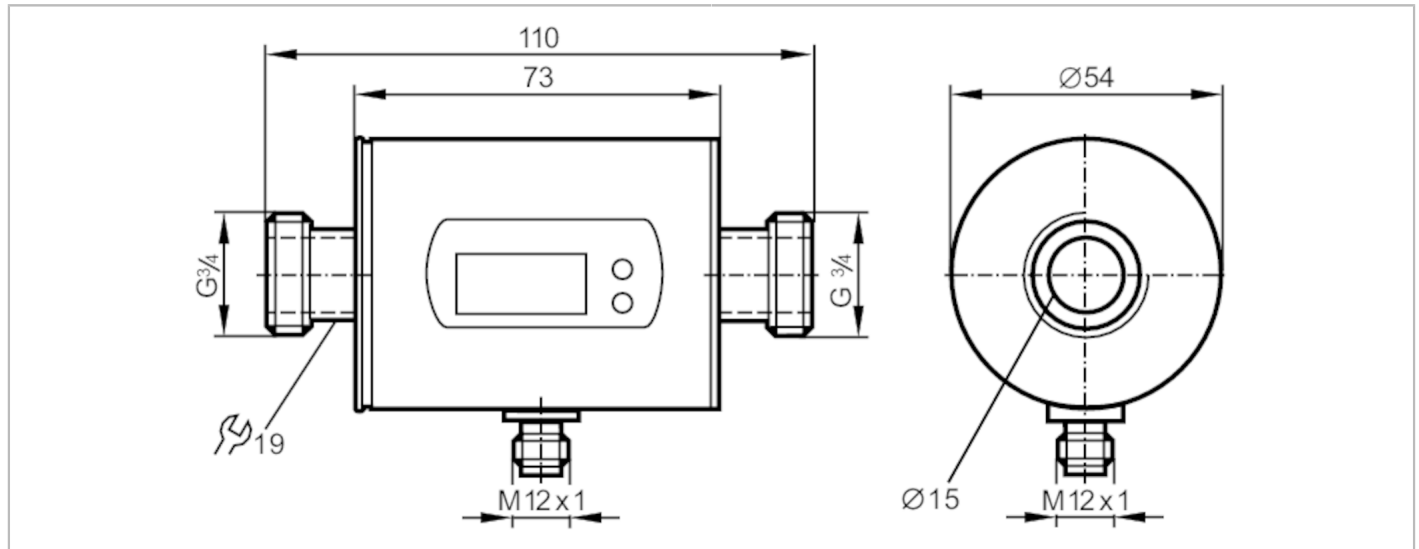


# SM7000



## Magnetic-inductive flow meter

SMR34GGXFRKG/US-100



### Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	0.2...50 l/min	0.01...3 m <sup>3</sup> /h
Process connection	threaded connection G 3/4 DN20 flat seal	

### Application

Special feature	Gold-plated contacts	
Application	totaliser function; for industrial applications	
Installation	connection to pipe by means of an adapter	
Media	conductive liquids; water; hydrous media	
Note on media	conductivity: $\geq 20 \mu\text{S}/\text{cm}$ viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C)	
Medium temperature [°C]	-10...70	
Pressure rating [bar]	16	
Pressure rating [Mpa]	1.6	
MAWP (for applications according to CRN) [bar]	11.2	

### Electrical data

Operating voltage [V]	18...30 DC; (according to EN 50178 SELV/PELV)	
Current consumption [mA]	95; (24 V)	
Protection class	III	
Reverse polarity protection	yes	
Power-on delay time [s]	5	

### Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
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### Inputs

Inputs	counter reset	
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Outputs		
Total number of outputs	2	
Output signal	switching signal; analogue signal; pulse signal; IO-Link; (configurable)	
Electrical design	PNP/NPN	
Number of digital outputs	2	
Output function	normally open / normally closed; (parameterisable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	200	
Number of analogue outputs	1	
Analogue current output [mA]	4...20; (scalable)	
Max. load [Ω]	500	
Analogue voltage output [V]	0...10; (scalable)	
Min. load resistance [Ω]	2000	
Pulse output	flow rate meter	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	
Measuring/setting range		
Measuring range	0.2...50 l/min	0.01...3 m³/h
Display range	-60...60 l/min	-3.6...3.6 m³/h
Resolution	0.1 l/min	0.001 m³/h
Set point SP	0.5...50 l/min	0.027...3 m³/h
Reset point rP	0.2...49.8 l/min	0.012...2.985 m³/h
Analogue start point ASP	0...40 l/min	0...2.4 m³/h
Analogue end point AEP	10...50 l/min	0.6...3 m³/h
In steps of	0.1 l/min	0.001 m³/h
Volumetric flow quantity monitoring		
Pulse value	0.00001...50 000 m³	
Pulse length [s]	0,005...2	
Temperature monitoring		
Measuring range [°C]	-20...80	
Resolution [°C]	0.2	
Set point SP [°C]	-19.2...80	
Reset point rP [°C]	-19.6...79.6	
Analogue start point [°C]	-20...60	
Analogue end point [°C]	0...80	
In steps of [°C]	0.2	
Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	± (0,8 % MW + 0,5 % MEW)	
Repeatability	± 0,2% MEW	

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Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 5 l/min)
<b>Response times</b>		
Flow monitoring		
Response time	[s]	0.15; (dAP = 0, T19)
Delay time programmable dS, dr	[s]	0...50
Damping for the switching output dAP	[s]	0...5
Temperature monitoring		
Dynamic response T05 / T09	[s]	T09 = 20 (Q > 5 l/min)
<b>Software / programming</b>		
Parameter setting options	Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / normally closed; switching logic; current/ voltage/pulse output; start-up delay; display can be deactivated; Display unit	
<b>Interfaces</b>		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis	
SIO mode	yes	
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	5
Supported DeviceIDs	Type of operation	DeviceID
	Default	572
<b>Operating conditions</b>		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-25...80
Protection	IP 67	
<b>Tests / approvals</b>		
EMC	DIN EN 60947-5-9	
	model number	001MI
	accuracy class	-
	maximum allowable error	± 1,5 % FS
	Q (min)	0,01 m³/h
	Q (t)	-
CPA approval	Q (max)	3 m³/h
	Shock resistance	
	DIN IEC 68-2-27	
Vibration resistance		DIN IEC 68-2-6
		20 g (11 ms)
MTTF	[years]	145
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

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Mechanical data		
Weight [g]	587	
Materials	stainless steel (1.4404 / 316L); PBT-GF20; PC; FKM; TPE	
Materials (wetted parts)	stainless steel (1.4404 / 316L); PEEK; FKM	
Process connection	threaded connection G 3/4 DN20 flat seal	
Displays / operating elements		
Display	Display unit	6 x LED, green (l/min, m <sup>3</sup> /h, l, m <sup>3</sup> , 10 <sup>3</sup> , °C)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit
Remarks		
Remarks	MW = measured value MEW = Final value of the measuring range	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; Contacts: gold-plated		
		

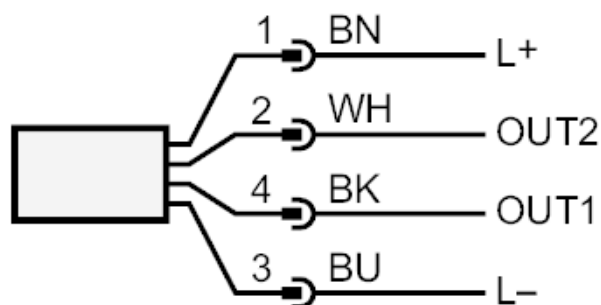
# SM7000



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### Connection



colours to DIN EN 60947-5-2

OUT1: switching output volumetric flow quantity monitoring  
Pulse output quantity meter  
signal output Preset counter  
IO-Link

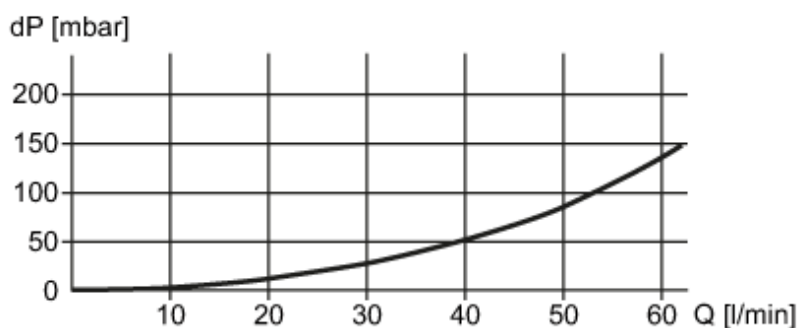
OUT2: switching output volumetric flow quantity monitoring  
switching output Temperature monitoring  
analogue output volumetric flow quantity monitoring  
analogue output Temperature monitoring  
input counter reset

Core colours :

BK = black  
BN = brown  
BU = blue  
WH = white

### Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity