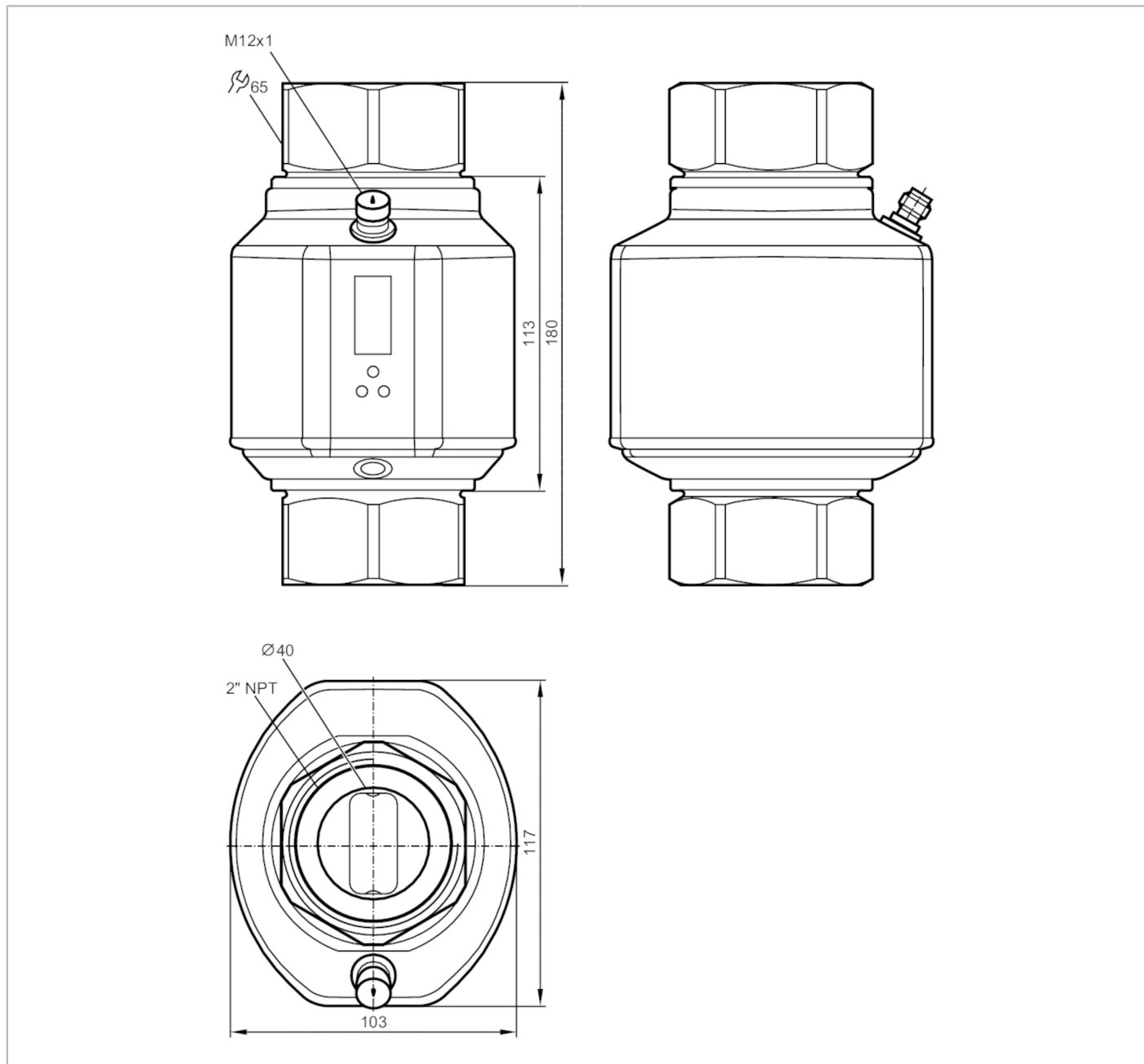


# SM2601



## Magnetic-inductive flow meter

SMN21XGXFRKG/US-100



Product characteristics	
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
Measuring range	80...9600 gph 1.3...160 gpm
Process connection	threaded connection 2" NPT DN50
Application	
Special feature	Gold-plated contacts
Application	totaliser function; empty pipe detection; for industrial applications
Media	conductive liquids; water; hydrous media
Note on media	conductivity: $\geq 20 \mu\text{S/cm}$ viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C)

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Medium temperature	[°F]	14...158
Pressure rating	[bar]	16
Pressure rating	[psi]	232
MAWP (for applications according to CRN)	[bar]	16

### Electrical data

Operating voltage	[V]	18...32 DC; (to SELV/PELV)
Current consumption	[mA]	< 150
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; frequency 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] 250; (per output)
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
Frequency of the output	[Hz] 0.1...10000

### Measuring/setting range

Measuring range	80...9600 gph	1.3...160 gpm
Display range	-11520...11520 gph	-190...190 gpm
Resolution	5 gph	0.1 gpm
Set point SP	130...9600 gph	2.1...160 gpm
Reset point rP	80...9550 gph	1.3...159.2 gpm
Analogue start point ASP	0...7680 gph	0...128 gpm
Analogue end point AEP	1920...9600 gph	32...160 gpm
Low flow cut-off LFC	< 240 gph	< 4 gpm
In steps of	5 gph	0.1 gpm

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Measuring dynamics	1:120
<b>Volumetric flow quantity monitoring</b>	
Pulse value	0.02...160 E06 gal
In steps of	0.02 gal
Pulse length [s]	0,008...2
<b>Temperature monitoring</b>	
Measuring range [°F]	-4...176
Display range [°F]	-40...212
Resolution [°F]	0.5
Set point SP [°F]	-2...176
Reset point rP [°F]	-3...175
Analogue start point [°F]	-4...140
Analogue end point [°F]	32...176
In steps of [°F]	0.5
<b>Accuracy / deviations</b>	
<b>Flow monitoring</b>	
Accuracy (in the measuring range)	± (0,8 % MW + 0,5 % MEW)
Repeatability	± 0,2% MEW
<b>Temperature monitoring</b>	
Temperature drift	± 0,0185 °F / K
Accuracy [K]	± 1 (77 °F; Q > 4 gpm)
<b>Response times</b>	
<b>Flow monitoring</b>	
Response time [s]	0.35; (dAP = 0)
Delay time programmable dS, dr [s]	0...50
Damping process value dAP [s]	0...5
<b>Temperature monitoring</b>	
Dynamic response T05 / T09 [s]	T09 = 3 (Q > 4 gpm)
<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/frequency/pulse output; start-up delay; display can be deactivated; Display unit; empty pipe detection
<b>Interfaces</b>	
Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9 CDV
Profiles	Smart Sensor: Process Data Variable; Device Identification
SIO mode	yes
Required master port type	A
Process data analogue	3
Process data binary	2

# SM2601



## Magnetic-inductive flow meter

SMN21XGXFRKG/US-100

Min. process cycle time [ms]	5	
Supported DeviceIDs	Type of operation	DeviceID
	Default	390

Operating conditions		
Ambient temperature [°F]		14...140
Storage temperature [°F]		-13...176
Protection		IP 65; IP 67

Tests / approvals		
EMC	DIN EN 60947-5-9	
Shock resistance	DIN EN 60068-2-27	20 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	5 g (10...2000 Hz)
MTTF [years]		85
UL approval	UL Approval no.	I008
	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]		2643
Materials	stainless steel (1.4404 / 316L); stainless steel (1.4571/316Ti); PEI; FKM; PBT-GF20; TPE-U	
Materials (wetted parts)	stainless steel (1.4404 / 316L); stainless steel (1.4571/316Ti); PEEK; FKM	
Process connection	threaded connection 2" NPT DN50	

Displays / operating elements		
Display	Display unit	6 x LED, green (gpm, gph, gal, °F, 10 <sup>3</sup> , 1000 x 10 <sup>3</sup> )
	switching status	2 x LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit

Accessories		
Items supplied		Label

Remarks		
Remarks	MW = measured value	
	MEW = Final value of the measuring range	
Pack quantity	1 pcs.	

### Electrical connection

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

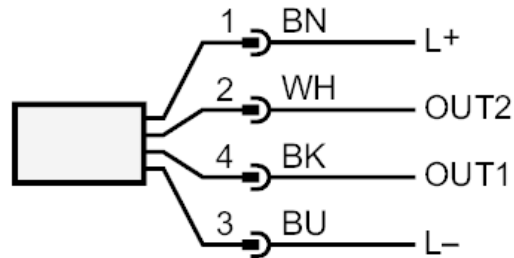




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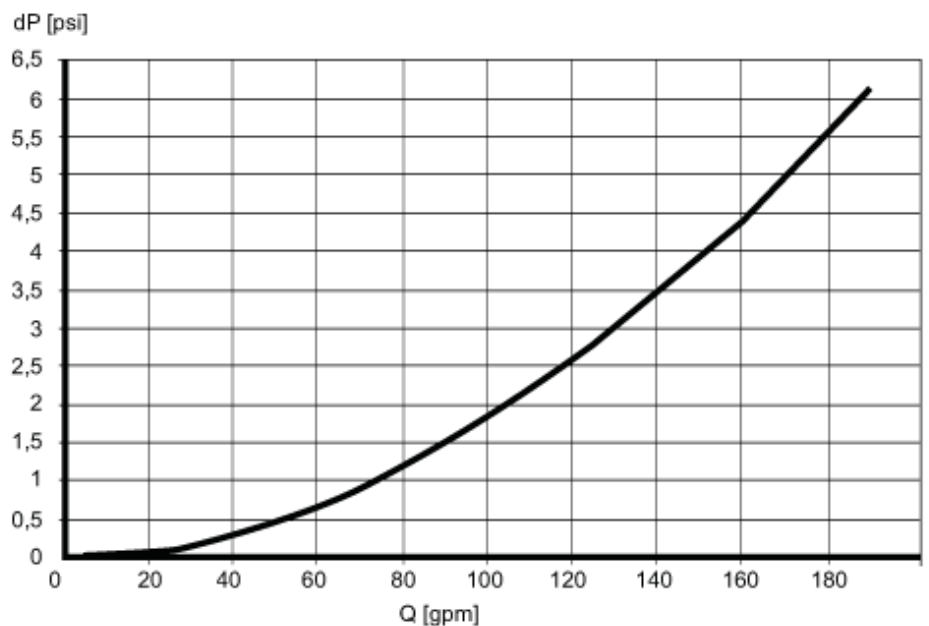
### Connection



- OUT1: colours to DIN EN 60947-5-2  
 switching output empty pipe detection  
 switching output volumetric flow quantity monitoring  
 frequency output volumetric flow quantity monitoring  
 Pulse output quantity meter  
 signal output Preset counter  
 IO-Link
- OUT2:  
 switching output empty pipe detection  
 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