

Архангельск (8182)63-90-72
 Астана (7172)727-132
 Астрахань (8512)99-46-04
 Барнаул (3852)73-04-60
 Белгород (4722)40-23-64
 Брянск (4832)59-03-52
 Владивосток (423)249-28-31
 Волгоград (844)278-03-48
 Вологда (8172)26-41-59
 Воронеж (473)204-51-73
 Екатеринбург (343)384-55-89
 Иваново (4932)77-34-06

Ижевск (3412)26-03-58
 Иркутск (395)279-98-46
 Казань (843)206-01-48
 Калининград (4012)72-03-81
 Калуга (4842)92-23-67
 Кемерово (3842)65-04-62
 Киров (8332)68-02-04
 Краснодар (861)203-40-90
 Красноярск (391)204-63-61
 Курск (4712)77-13-04
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
 Москва (495)268-04-70
 Мурманск (8152)59-64-93
 Набережные Челны (8552)20-53-41
 Нижний Новгород (831)429-08-12
 Новокузнецк (3843)20-46-81
 Новосибирск (383)227-86-73
 Омск (3812)21-46-40
 Орел (4862)44-53-42
 Оренбург (3532)37-68-04
 Пенза (8412)22-31-16

Пермь (342)205-81-47
 Ростов-на-Дону (863)308-18-15
 Рязань (4912)46-61-64
 Самара (846)206-03-16
 Санкт-Петербург (812)309-46-40
 Саратов (845)249-38-78
 Севастополь (8692)22-31-93
 Симферополь (3652)67-13-56
 Смоленск (4812)29-41-54
 Сочи (862)225-72-31
 Ставрополь (8652)20-65-13

Сургут (3462)77-98-35
 Тверь (4822)63-31-35
 Томск (3822)98-41-53
 Тула (4872)74-02-29
 Тюмень (3452)66-21-18
 Ульяновск (8422)24-23-59
 Уфа (347)229-48-12
 Хабаровск (4212)92-98-04
 Челябинск (351)202-03-61
 Череповец (8202)49-02-64
 Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47

Россия (495)268-04-70

Казахстан (772)734-952-31

<https://reliant.nt-rt.ru/> || rtw@nt-rt.ru

RFGR200 Gear Flowmeter

- ▶ High pressure rating
- ▶ Applicable to various viscous media
- ▶ High repeatability and accuracy
- ▶ Pulse / analog output selectable
- ▶ Wide measuring range



RFGR200 positive displacement flow meter measures the flow on the volumetric principle, in which gearwheels is moved proportional to the flow rate. The movement of the gearwheels is measured through the enclosing housing wall by a sensor. No straight tap needed.

RFGR200 flow meters are bi-directional and can be used to measure the cylinder position without damaging internal parts.

Assembled with journal bearings RFGR200 can measure low or non-lubricating fluids, such as paints, glues, resin, sealant etc.

The RFGR200 series of positive displacement flow meters have 8 measuring ranges from 0.006 to 1L/min through 4.0 to 450L/min. Optional pickoffs for pulse output, current analog output and voltage analog output.

Specifications

Applicable Medium	Liquids
Accuracy (at 30cst)	±0.5% of reading (turndown ratio of 1:10); ±1% of reading (measuring range)
Repeatability	±0.1% of reading
Pressure Rating	420bar (stainless steel), 100bar (aluminum)
Ambient Temperature	-40 to 85°C
Medium Temperature	-40 to 100°C (Max. 200°C for high temperature type)
Materials	
Body	316 stainless steel or aluminum
Gear	Stainless steel
Sealing	FPM (NBR, PTFE optional)

Bearing	Stainless steel ball bearing
	Tungsten carbide journal bearing

Applications

- ▶ Printing ink measurement
- ▶ Resin/glue/silica gel measurement
- ▶ Hydraulic oil/lubricating oil/ grease measurement
- ▶ Cooling liquid measurement Solvent measurement
- ▶ Fuel oil measurement
- ▶ Polyurethane measurement
- ▶ Braking fluid measurement
- ▶ Cylinder position measurement

Parameter Table

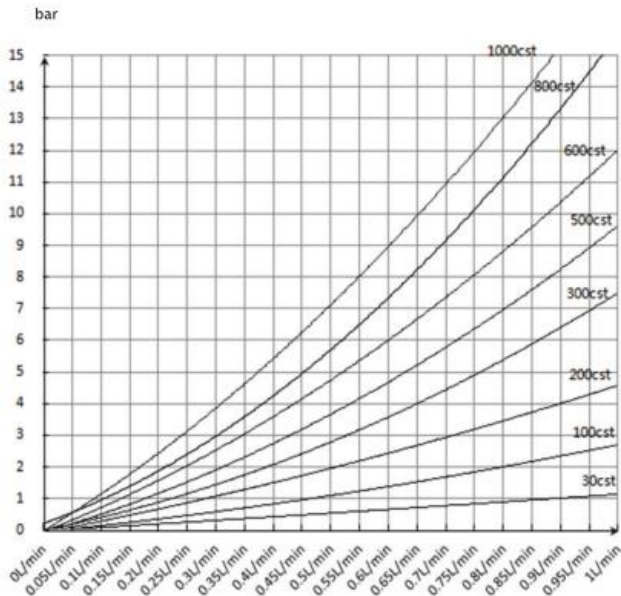
Parameter of Meter	Measuring Range (L/Min)	K Coefficient (Pulse/L)	Max. Pressure Rating (bar)		Connection BSPP/NPT	Max. Filter Diameter (micron)	
			316 Steel	Aluminum		Journal Bearing	Ball Bearing
RFGR200-1L	0.006 to 1.0	40000	420	100	G1/8 or NPT1/8	120	30
RFGR200-3L	0.02 to 3.0	13500	420	100	G1/4 or NPT1/4	120	30
RFGR200-7.5L	0.05 to 7.5	4200	420	100	G1/4 or NPT1/4	120	30
RFGR200-25L	0.2 to 25	1400	420	100	G1/2 or NPT1/2	120	30
RFGR200-75L	0.5 to 75	450	420	100	G3/4 or NPT3/4	175	30
RFGR200-150L	1.5 to 150	190	420	100	G1 or NPT1	300	200
RFGR200-225L	2.0 to 225	110	420	100	G1-1/4 or NPT1-1/4	300	200
RFGR200-450L	4.0 to 450	55	420	100	G1-1/4 or NPT1-1/4	300	200

Pressure Loss

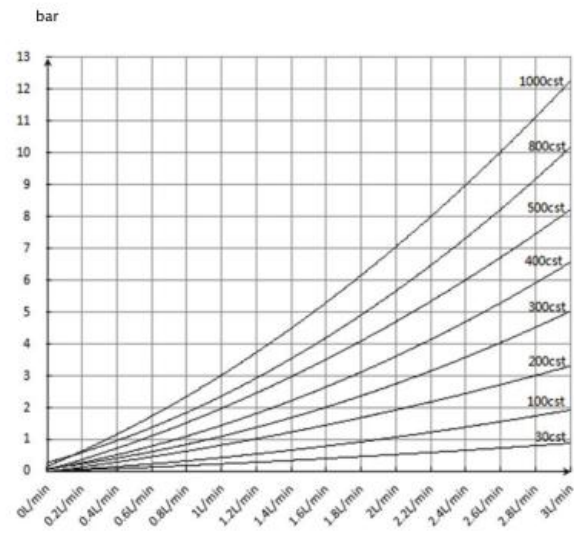
RFGR200 Gear Flowmeter

Rev. RTG1-1.0

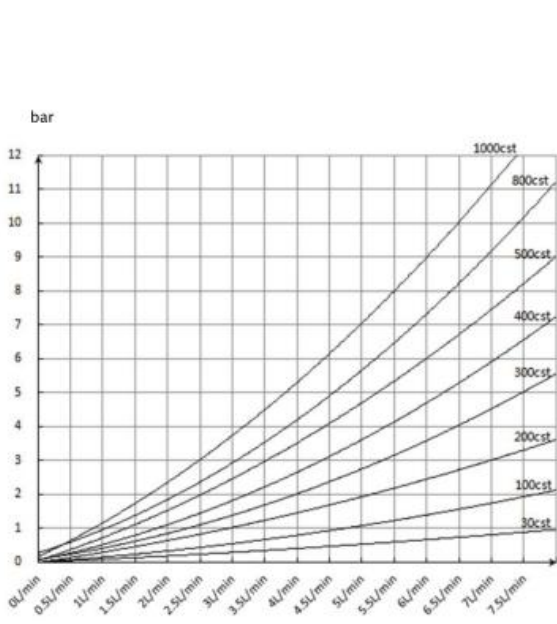
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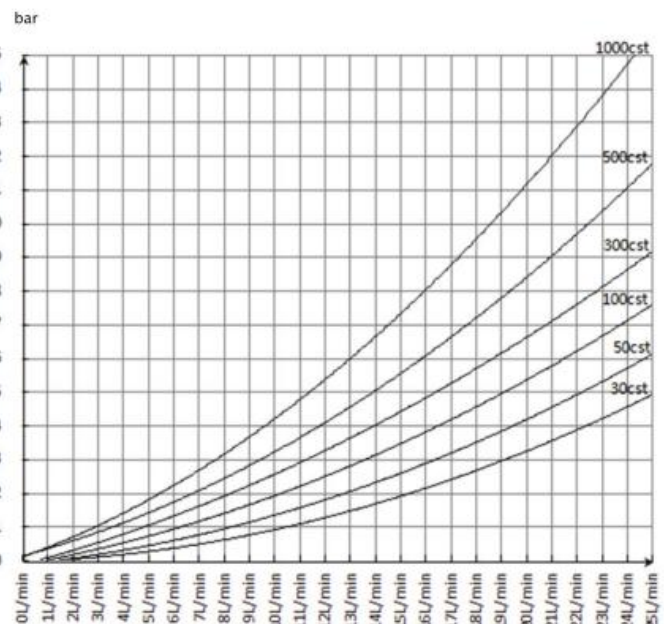
RFGR200-001



RFGR200-003



RFGR200-007.5

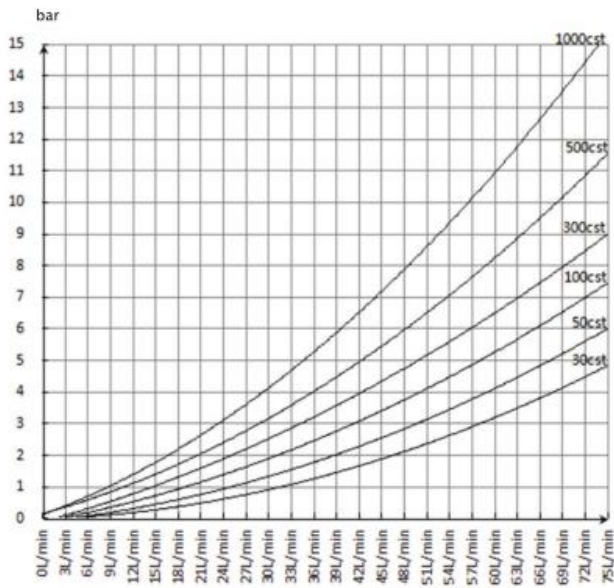


RFGR200-025

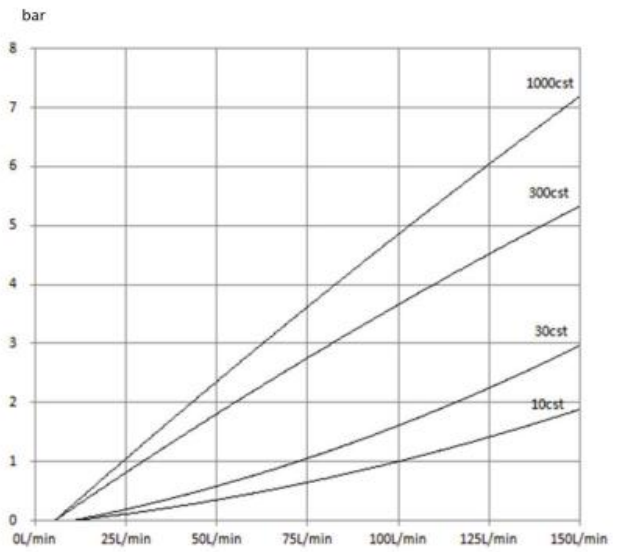
RFGR200 Gear Flowmeter

Rev. RTG1-1.0

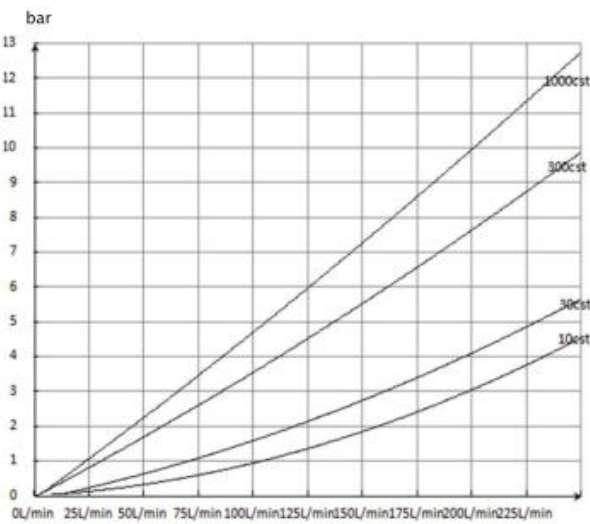
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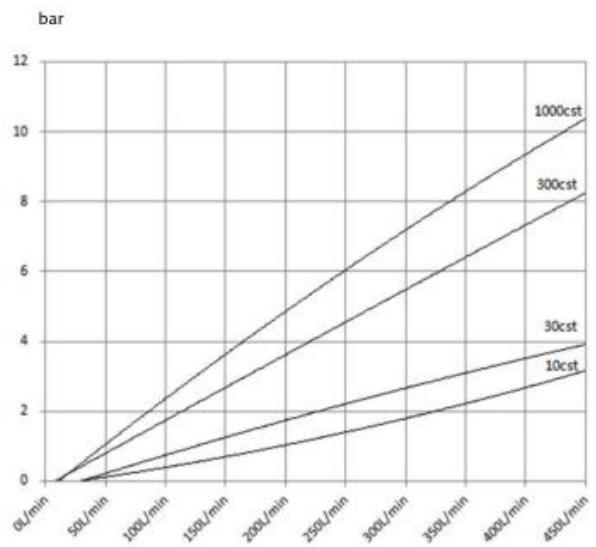
RFGR200-075



RFGR200-150



RFGR200-225



RFGR200-450

Electronics

RFGR200 series assembled with below pickoffs:

GS – Single hall effect pickoff with pulse output amplifier

Power Supply	12 to 30VDC
Current Consumption	8mA
Outputs	NPN OC output; NPN OC output+pull-up resistor
Reverse Polarity Proof	Yes
Short-circuit Proof	Yes
Operating Temperature	-40 to 120°C
Ambient Temperature	-40 to 85°C
Electrical Connection	M12x1 plug
	DIN43650-A plug (solenoid plug)
Protection Class	M12X1 plug: IP67
	DIN43650-A plug: IP65



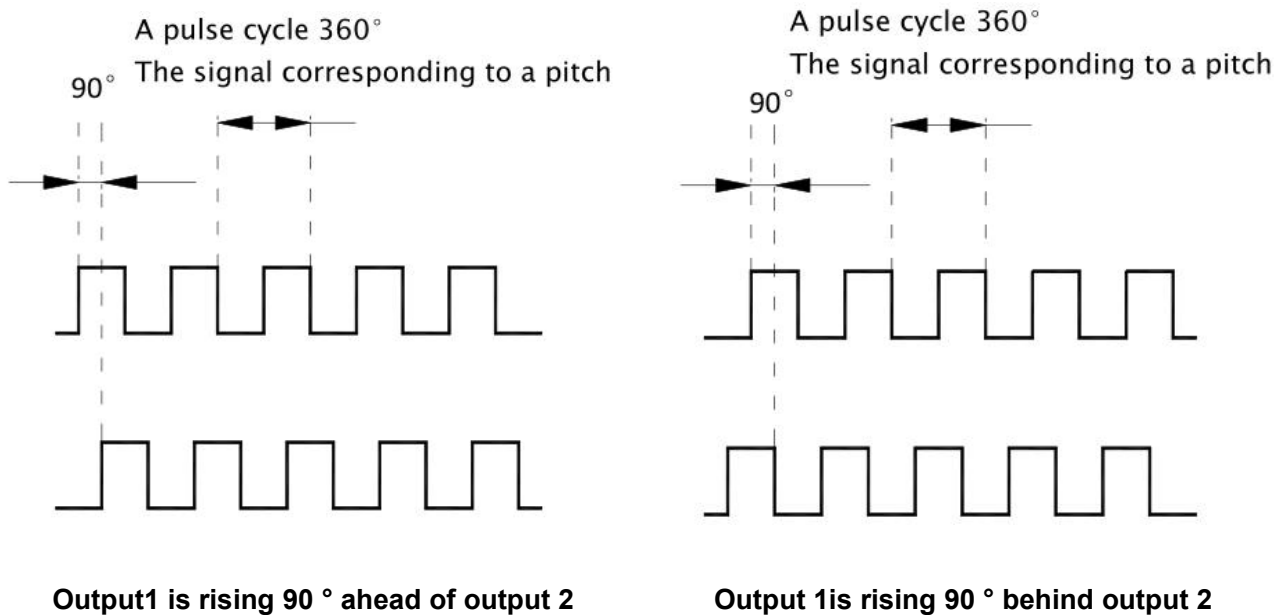
GH - Single high temperature hall effect pickoff with pulse output amplifier

Ambient Temperature	-40 to 85°C
Operating Temperature	-40 to 200°C

◆ Other parameters please refer to the above

GD - Dual hall effect pickoffs with pulse output amplifiers

GDH - Dual high temperature hall effect pickoffs with pulse output amplifiers



RFGR200 Gear Flowmeter

Rev. RTG1-1.0

Doc. ID: RNT20191103



GA - Hall effect pickoff with analog output amplifier

Power Supply	12 to 30VDC
Current Consumption	Voltage analog output: 7mA
	Current analog output: <12mA
Outputs	0 to 10V
	3-wire (0) 4 to 20mA
Reverse Polarity Proof	Yes
Short-circuit Proof	Yes
Operating Temperature	-40 to 120°C
Ambient Temperature	-40 to 85°C
Electrical Connection	M12x1plug
	DIN43650-A plug (solenoid plug)
Protection Class	M12X1plug: IP67
	DIN43650-A plug: IP65



GAH - High temperature hall effect pickoff with analog output amplifier

Ambient Temperature	-40 to 85°C
Operating Temperature	-40 to 200°C

◆ Other parameters please refer to the above

Wiring - Pulse Output

Wiring	PNP output	NPN output												
<p>M12x1 Plug</p> <table border="1"> <thead> <tr> <th>Signal</th> <th>Plug</th> <th>Cable</th> </tr> </thead> <tbody> <tr> <td>U+</td> <td>1</td> <td>Brown</td> </tr> <tr> <td>Pulse</td> <td>4</td> <td>Black</td> </tr> <tr> <td>U-</td> <td>3</td> <td>Blue</td> </tr> </tbody> </table>	Signal	Plug	Cable	U+	1	Brown	Pulse	4	Black	U-	3	Blue	<p>PNP</p> <p>10~25Vdc +</p> <p>1 2 4 3</p> <p>B A</p> <p>S S</p>	<p>NPN</p> <p>10~25Vdc +</p> <p>1 2 4 3</p> <p>B A</p> <p>S S</p>
Signal	Plug	Cable												
U+	1	Brown												
Pulse	4	Black												
U-	3	Blue												
<p>Solenoid Plug</p> <table border="1"> <thead> <tr> <th>Signal</th> <th>Plug</th> </tr> </thead> <tbody> <tr> <td>U+</td> <td>1</td> </tr> <tr> <td>Pulse</td> <td>3</td> </tr> <tr> <td>U-</td> <td>2</td> </tr> </tbody> </table>	Signal	Plug	U+	1	Pulse	3	U-	2	<p>PNP</p> <p>10~25Vdc +</p> <p>1 3 2</p> <p>S</p>	<p>NPN</p> <p>10~25Vdc +</p> <p>1 3 2</p> <p>S</p>				
Signal	Plug													
U+	1													
Pulse	3													
U-	2													

Wiring 2-Analog Output: 3-wiring 4...20mA/ 0 to 10V

Wiring		4...20mA/0...10V (3-wire)											
<p>M12x1 Plug</p> <table border="1"> <thead> <tr> <th>Signal</th> <th>Plug</th> <th>Cable</th> </tr> </thead> <tbody> <tr> <td>U+</td> <td>1</td> <td>Brown</td> </tr> <tr> <td>output</td> <td>2</td> <td>White</td> </tr> <tr> <td>U-</td> <td>3</td> <td>Blue</td> </tr> </tbody> </table>	Signal	Plug	Cable	U+	1	Brown	output	2	White	U-	3	Blue	
Signal	Plug	Cable											
U+	1	Brown											
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<p>Solenoid Plug</p> <table border="1"> <thead> <tr> <th>Signal</th> <th>Plug</th> </tr> </thead> <tbody> <tr> <td>U+</td> <td>1</td> </tr> <tr> <td>output</td> <td>3</td> </tr> <tr> <td>U-</td> <td>2</td> </tr> </tbody> </table>	Signal	Plug	U+	1	output	3	U-	2					
Signal	Plug												
U+	1												
output	3												
U-	2												

DWEG - Smart control unit with hall effect pickoff

Power Supply (Us)	12 to 30VDC
Current Consumption	<20mA
Switching Output	
Output	Push-pull (compatible with PNP / NPN)
Current	500mA (power supply 24VDC)
Current Analog Output	
Output	3/2-wire 4 to 20mA programable
Load RA (Ω)	RA ≤ (Us-10) / 0.02
Linearity	≤±0.5% of reading
Voltage Analog Output	
Output	3-wire 0...5V/1...5V programable
Load RA (Ω)	RA ≥ 5KΩ
Linearity	≤±0.5% of reading
Accuracy	≤±0.5% of reading
Temperature	
Operating Temperature	-40 to 120°C
Ambient/Storage	-40 to 85°C
Display	8mm height, red 4-digit LED
Material	
Display Head	304 stainless steel (316L customized) + PP
Housing	304 stainless steel (316L customized)
Protection Class	IP67
Electrical Connection	M12×1plug



DWEGH - Smart control unit with high temperature hall effect pickoff

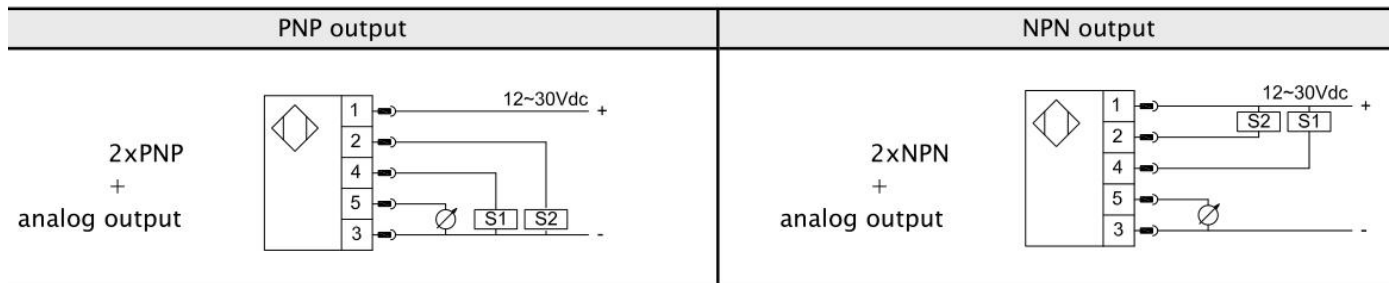
Ambient Temperature	-40 to 85°C
Operating Temperature	-40 to 200°C

◆ Other parameters please refer to the above

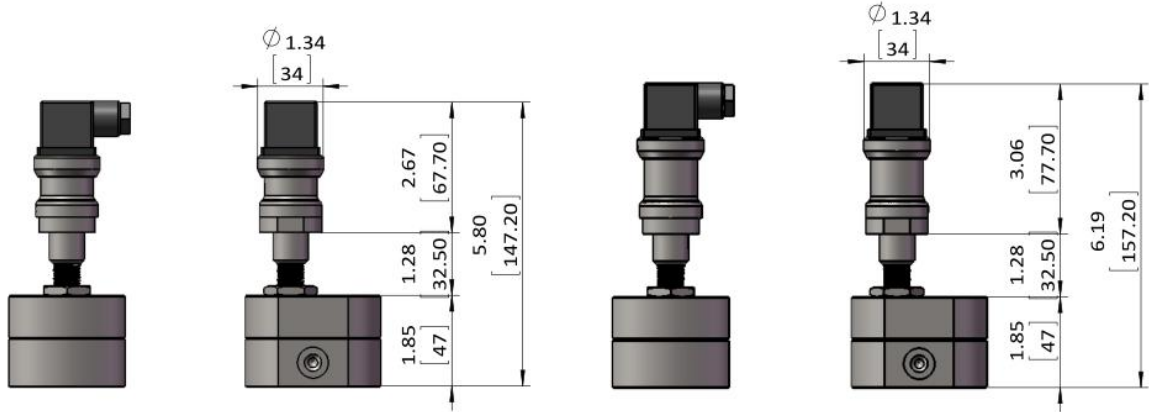
DWEGD - Smart control unit with dual hall effect pickoffs (recognition of flow direction)

DWEGDH - Smart control unit with dual high temperature hall effect pickoffs (recognition of flow direction, for details please refer to GD)

Wiring

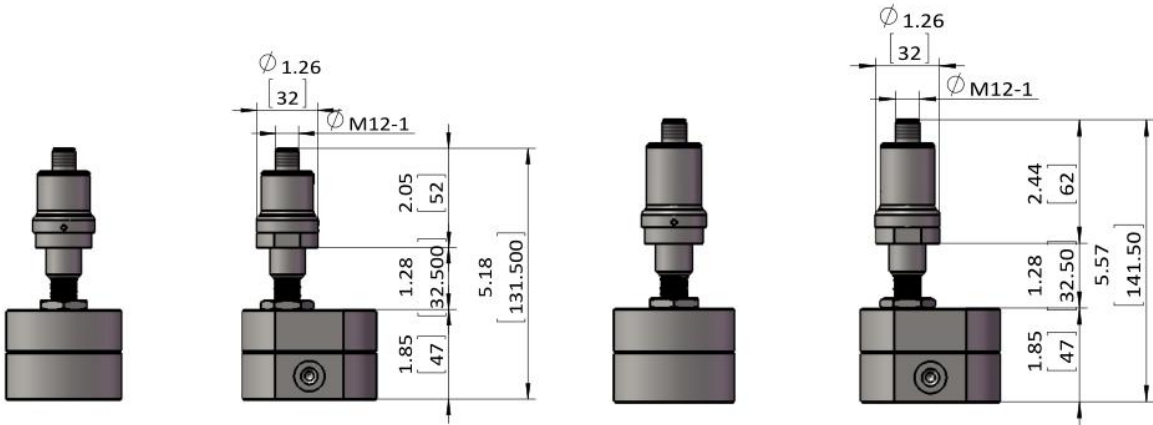


Dimensions in inches (mm) RFGR200-1L



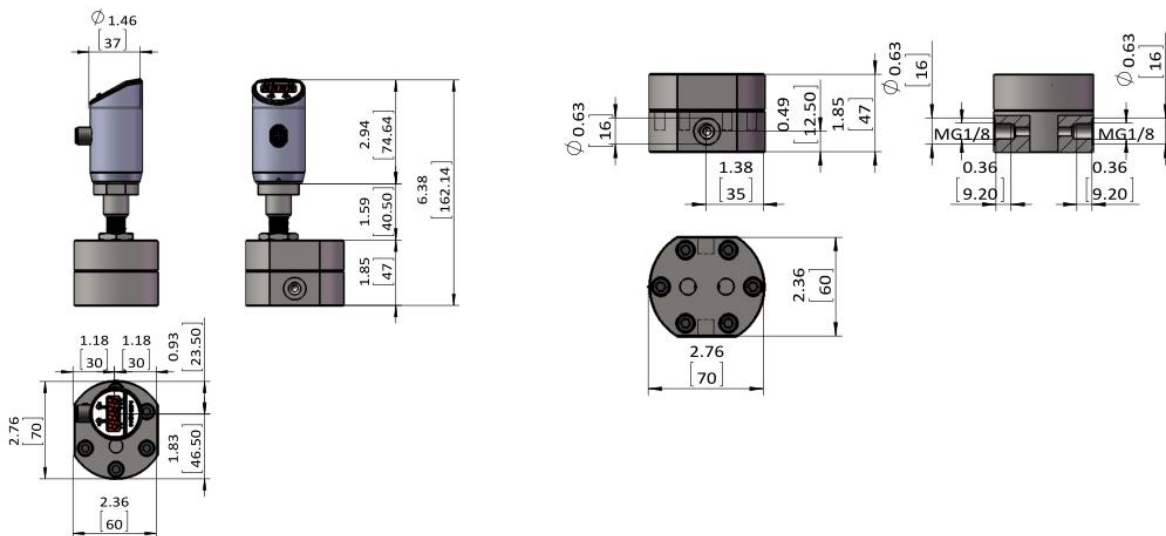
DIN43650-A plug for pulse output

DIN43650-A plug for analog output



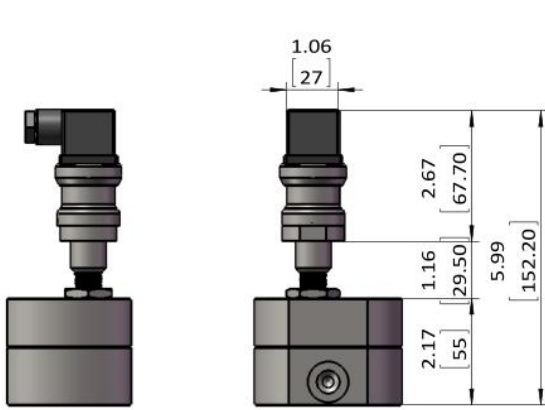
M12X1 plug for pulse output

M12X1 plug for analog output

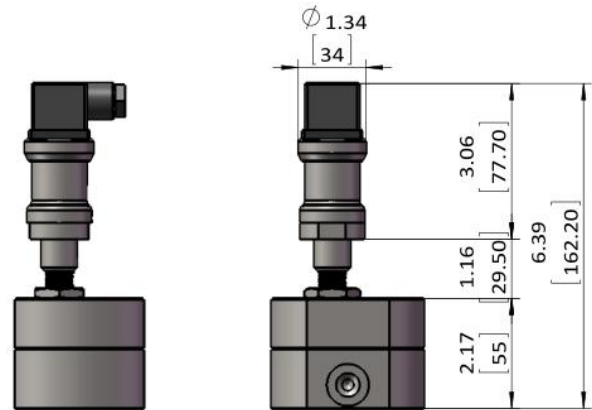


Smart control unit

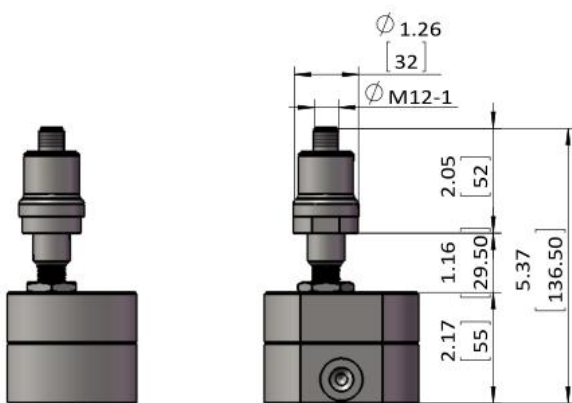
Dimensions in inches (mm) RFGR200-3L



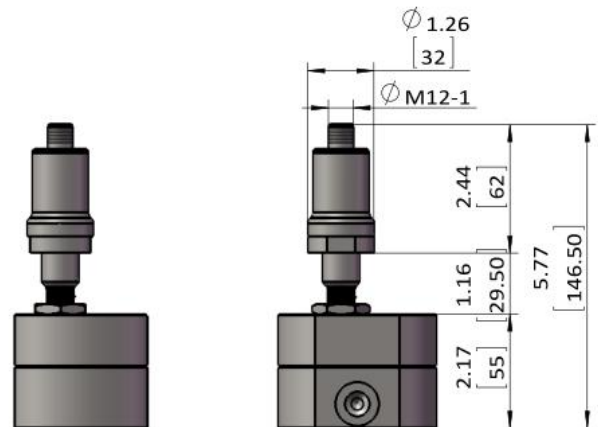
DIN43650-A plug for pulse output



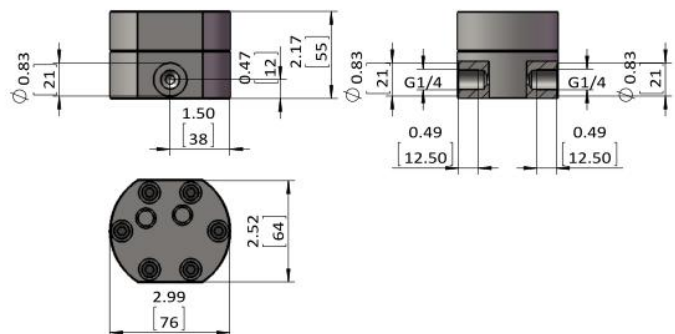
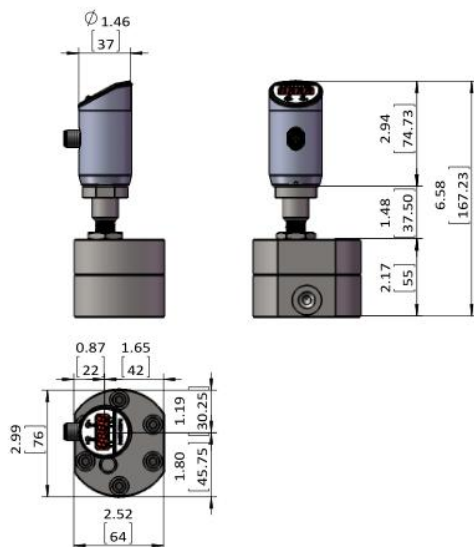
DIN43650-A plug for analog output



M12X1 plug for pulse output

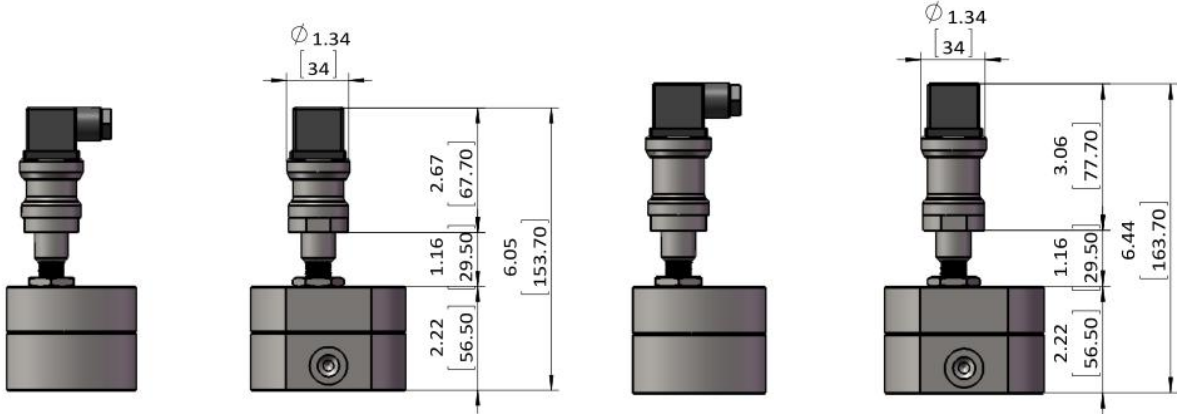


M12X1 plug for analog output



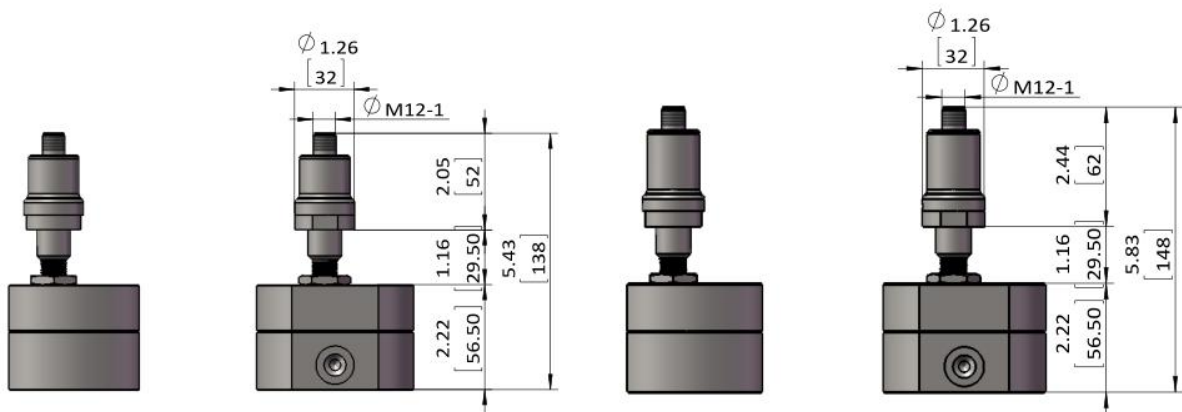
Smart control unit

Dimensions in inches (mm) RFGR200-7.5L



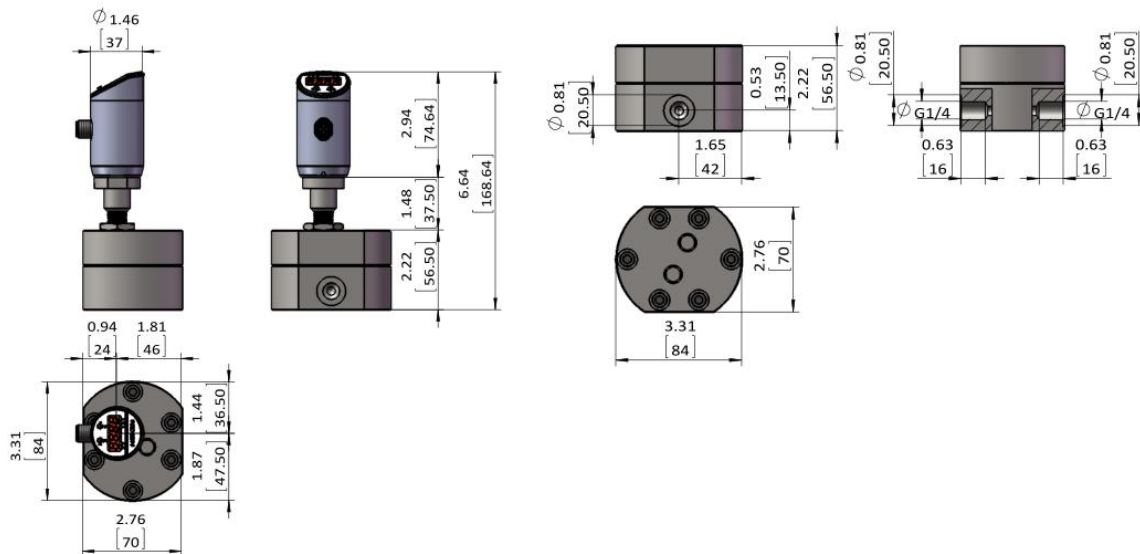
DIN43650-A plug for pulse output

DIN43650-A plug for analog output



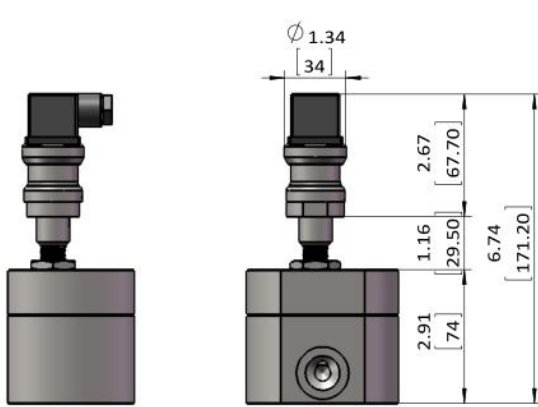
M12X1 plug for pulse output

M12X1 plug for analog output

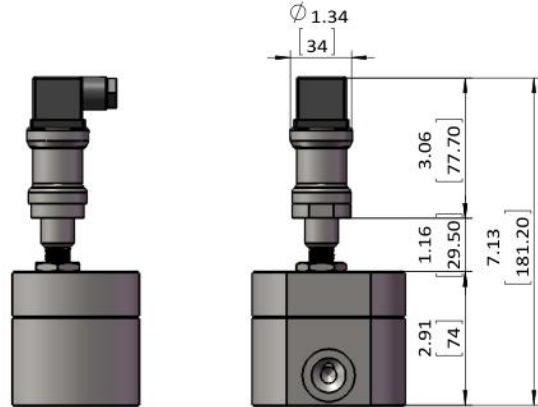


Smart control unit

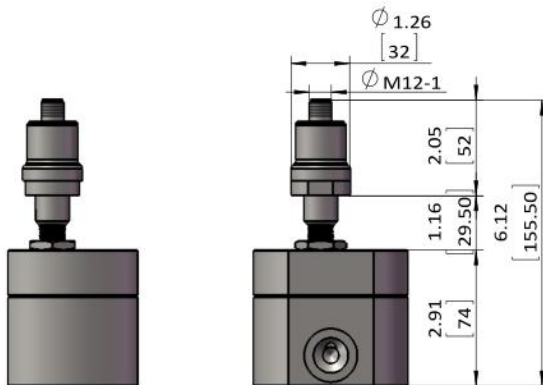
Dimensions in inches (mm) RFGR200-25L



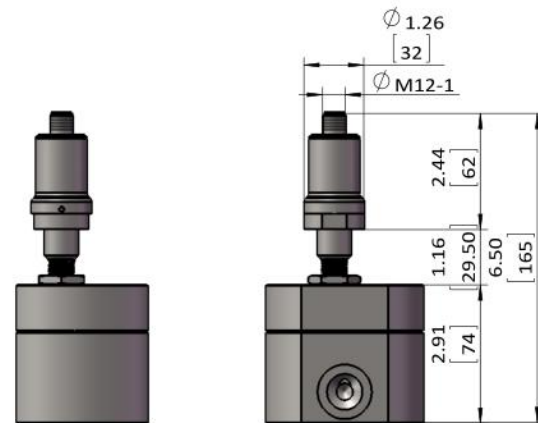
DIN43650-A plug for pulse output



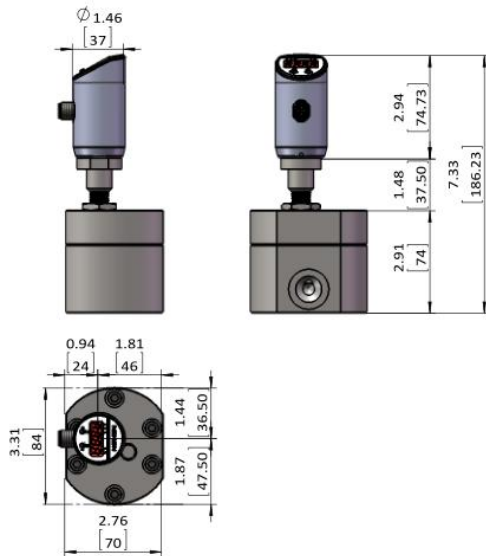
DIN43650-A plug for analog output



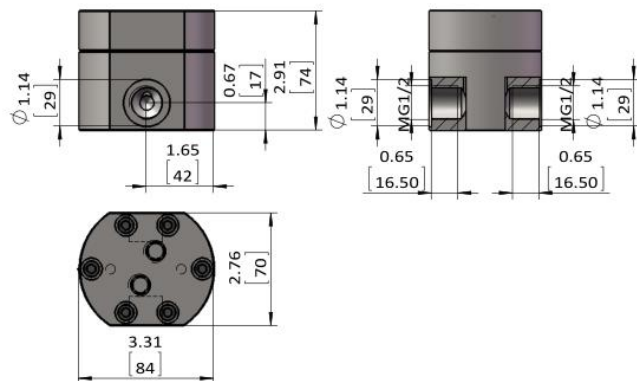
M12X1 plug for pulse output



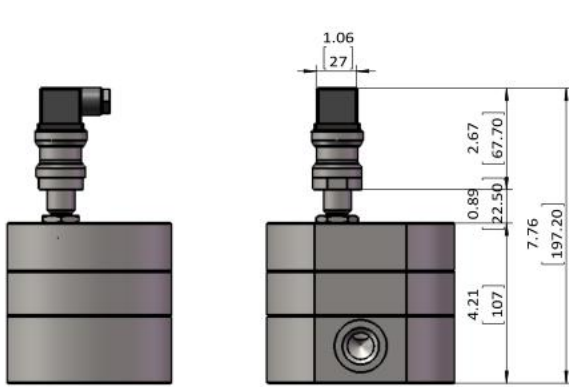
M12X1 plug for analog output



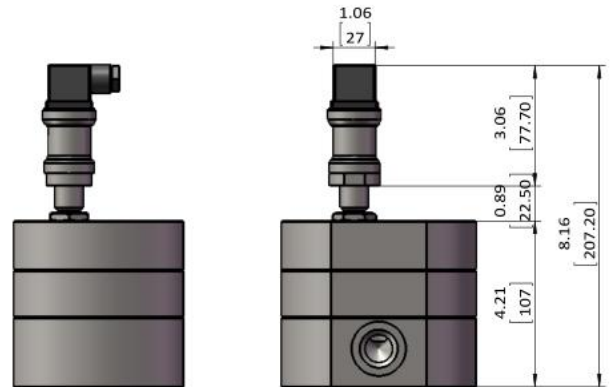
Smart control unit



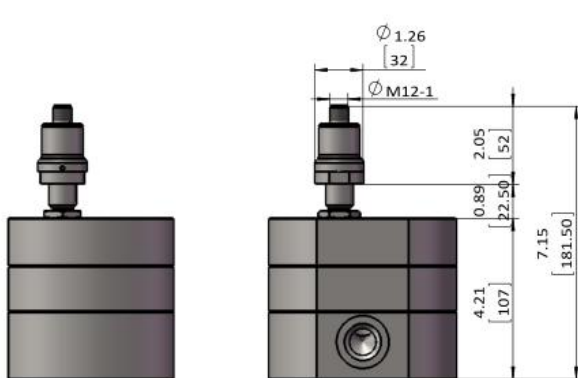
Dimensions in inches (mm) RFGR200-75L



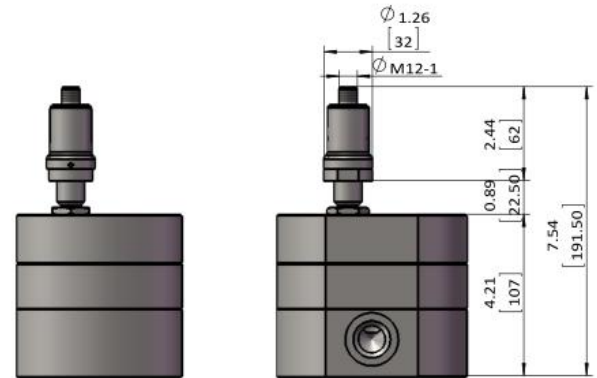
DIN43650-A plug for pulse output



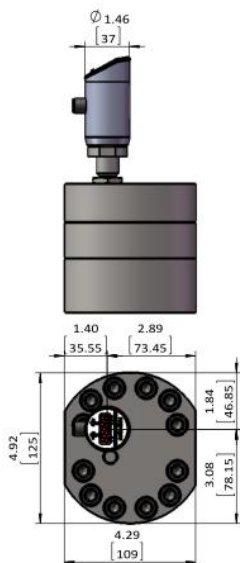
DIN43650-A plug for analog output



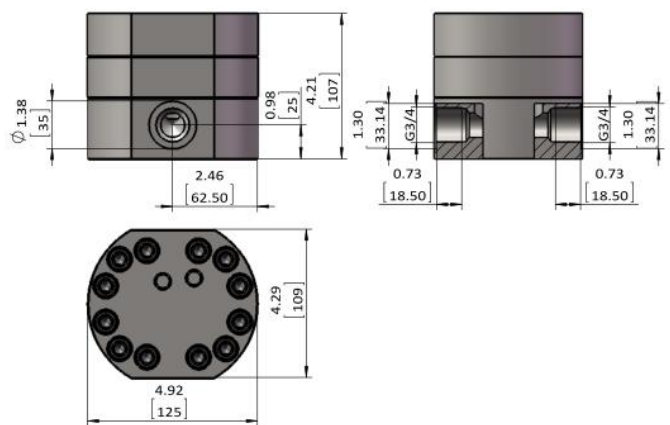
M12X1 plug for pulse output



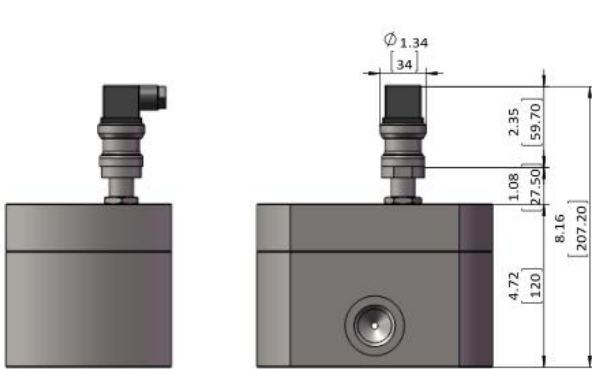
M12X1 plug for analog output



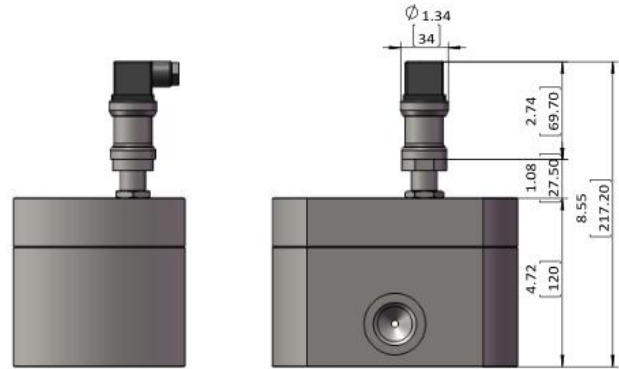
Smart control unit



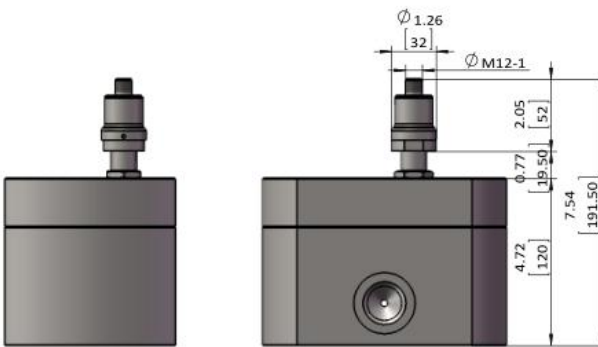
Dimensions in inches (mm) RFGR200-150L



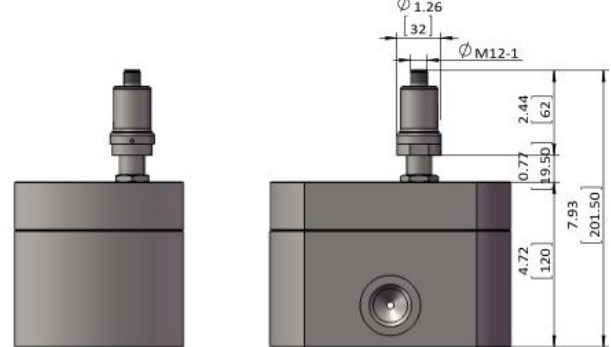
DIN43650-A plug for pulse output



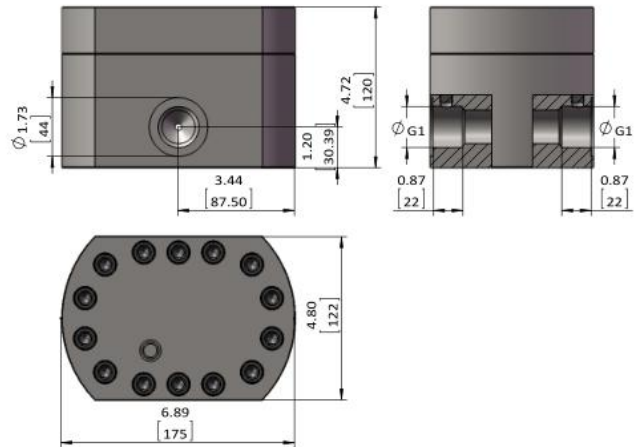
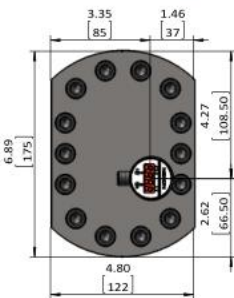
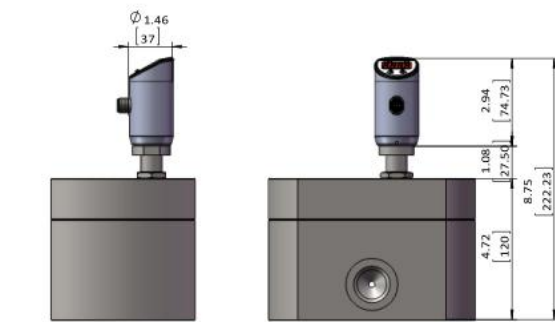
DIN43650-A plug for analog output



M12X1 plug for pulse output

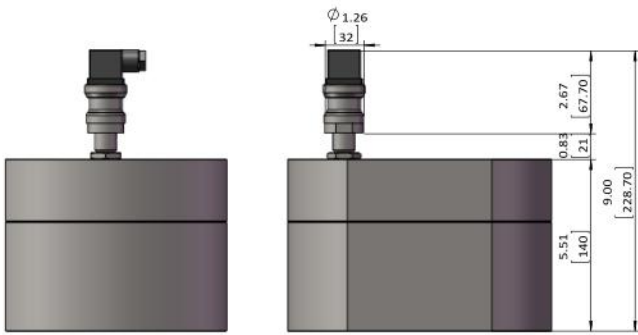


M12X1 plug for analog output

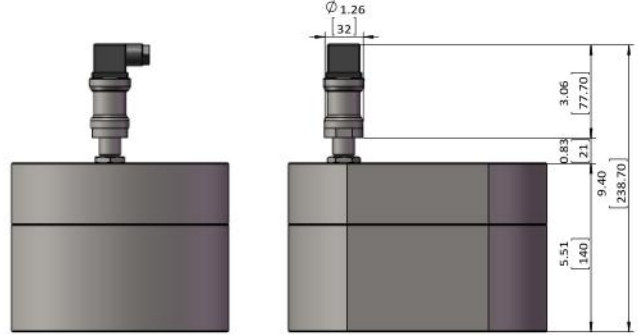


Smart control unit

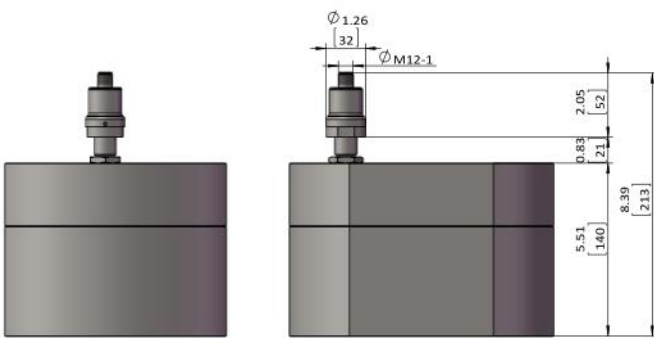
Dimensions in inches (mm) RFGR200-225L



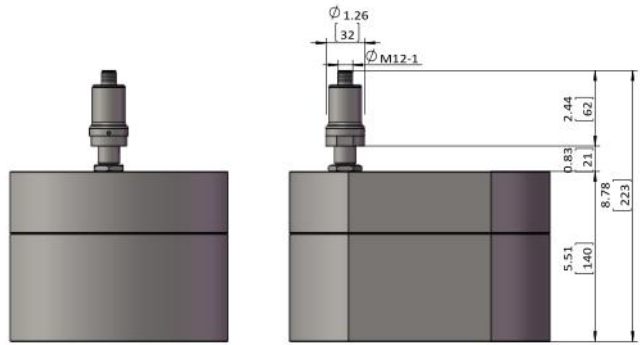
DIN43650-A plug for pulse output



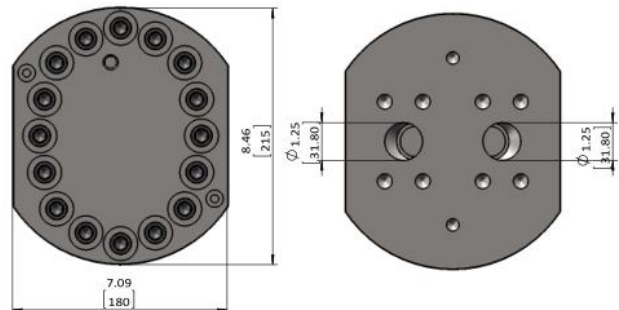
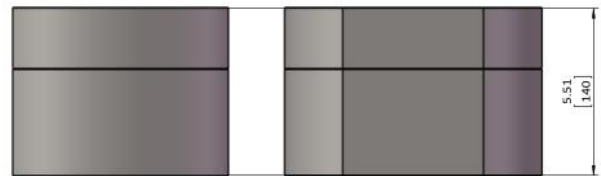
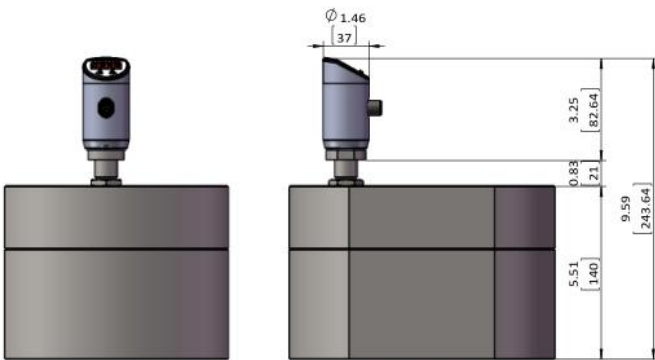
DIN43650-A plug for analog output



M12X1 plug for pulse output

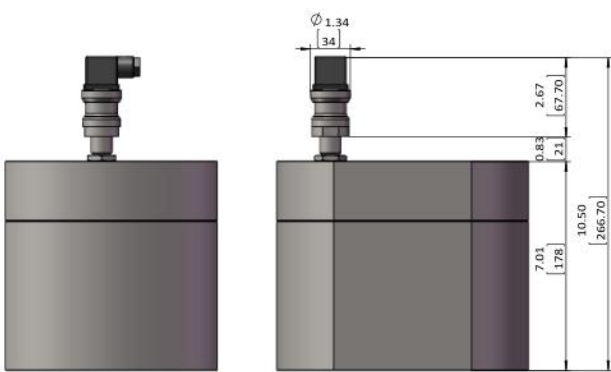


M12X1 plug for analog output

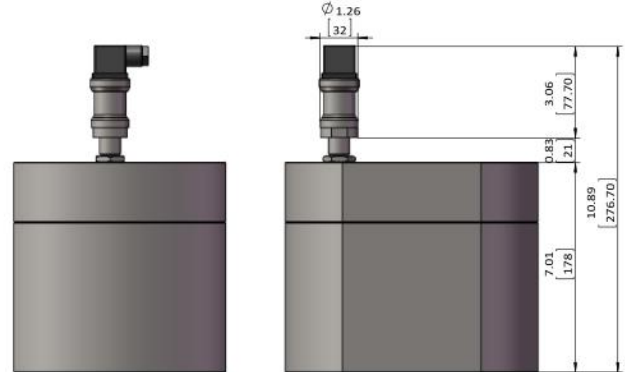


Smart control unit

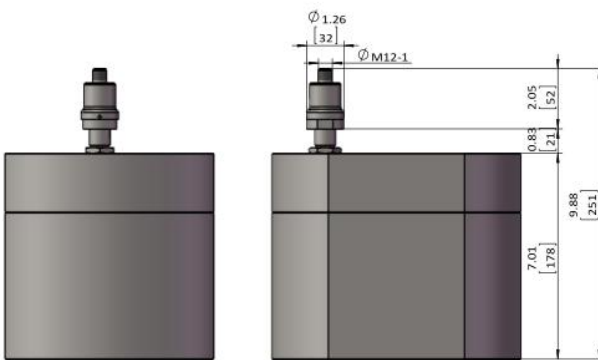
Dimensions in inches (mm) RFGR200-450L



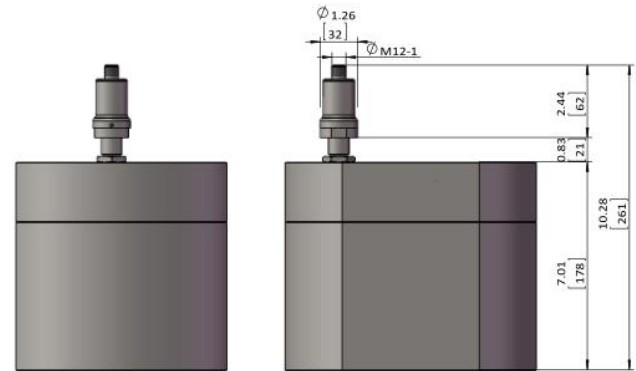
DIN43650-A plug for pulse output



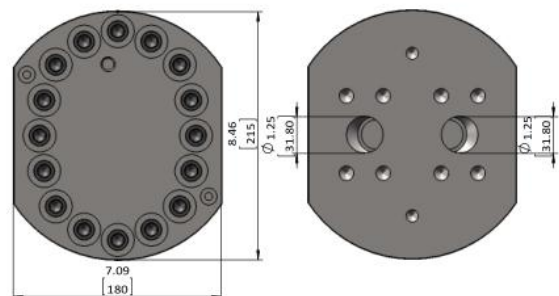
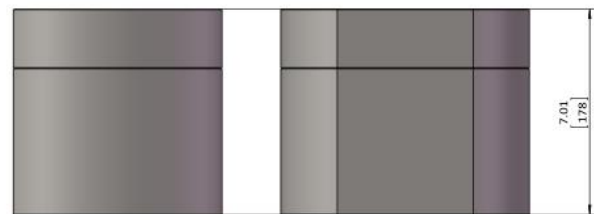
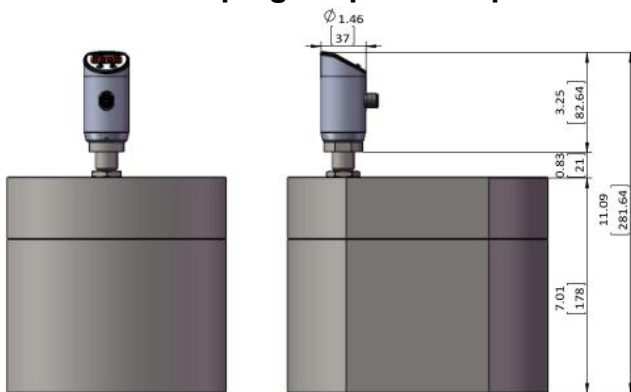
DIN43650-A plug for analog output



M12X1 plug for pulse output



M12X1 plug for analog output





Smart control unit


Order Code

SN	Code and Description	Note								
1.	RFGR200 : Positive displacement flow meter (Gear flow meter)									
2.	<p>Process connection</p> <p>G1/4 : Thread size G1/4 (corresponding measuring range 1L/ 3L/7.5L)</p> <p>G1/2 :Thread size G1/2 (corresponding measuring range 25L)</p> <p>G3/4 : Thread size G3/4 (corresponding measuring range 75L)</p> <p>G1 :Thread size G1 (corresponding measuring range 150L)</p> <p>G1-1/4 : Thread size G1-1/4 (corresponding measuring range 225L/450L)</p> <p>NPT1/4 : Thread size NPT1/4 (corresponding measuring range 1L/ 3L/7.5L)</p> <p>NPT1/2 : Thread size NPT1/2 (corresponding measuring range 25L)</p> <p>NPT3/4 :Thread size NPT3/4 (corresponding measuring range 75L)</p> <p>NPT1 :Thread size NPT1 (corresponding measuring range 150L)</p> <p>NPT1-1/4 :Thread size NPT1-1/4 (corresponding measuring range 225L/450L)</p>									
3.	<p>Body material</p> <p>A :Aluminum</p> <p>S04:304 stainless steel</p> <p>S16 :316 stainless steel</p>									
4.	<p>Bearing</p> <p>BB :Stainless steel ball bearing</p> <p>TC :Tungsten carbide journal bearing</p>									
5.	<p>Sealing material</p> <p>F: FPM</p> <p>N : NBR</p> <p>T : PTFE</p>									
6.	<p>Measuring range (see technical data for details)</p> <table border="0"> <tr> <td>1L :0.006—1L/min</td> <td>75L :0.5—75.0L/min</td> </tr> <tr> <td>3L :0.02—3.0L/min</td> <td>150L : 1.5—150L/min</td> </tr> <tr> <td>7.5L :0.05—7.5L/min</td> <td>225L : 2.0—225.0L/min</td> </tr> <tr> <td>25L :0.2—25L/min</td> <td>450L : 4.0—450.0L/min</td> </tr> </table>	1L :0.006—1L/min	75L :0.5—75.0L/min	3L :0.02—3.0L/min	150L : 1.5—150L/min	7.5L :0.05—7.5L/min	225L : 2.0—225.0L/min	25L :0.2—25L/min	450L : 4.0—450.0L/min	
1L :0.006—1L/min	75L :0.5—75.0L/min									
3L :0.02—3.0L/min	150L : 1.5—150L/min									
7.5L :0.05—7.5L/min	225L : 2.0—225.0L/min									
25L :0.2—25L/min	450L : 4.0—450.0L/min									
7.	<p>Pickoffs type(see technical data for details)</p> <p>GS :Single hall effect pickoff with pulse output amplifier</p> <p>GH :Single high temperature hall effect pickoff with pulse output amplifier</p> <p>GD :Dual hall effect pickoffs with pulse output amplifiers(recognition of flow direction)</p> <p>GDH:Dual high temperature hall effect pickoffs with pulse output amplifiers (recognition of flow direction)</p> <p>AS :Hall effect pickoff with analog output amplifier</p> <p>AH: High temperature hall effect pickoff with analog output amplifier</p> <p>DWEG :Smart control unit with hall effect pickoff</p>									

	<p>DWEGH :Smart control unit with high temperature hall effect pickoff</p> <p>DWEGD :Smart control unit with dual hall effect pickoffs (recognition of flow direction)</p> <p>DWEGDH : Smart control unit with dual high temperature hall effect pickoffs (recognition of flow direction)</p>	
8.	<p>Outputs</p> <p>A000: Pulse V005 : 0...5V</p> <p>A020 :0...20mA V105 :1...5V</p> <p>A420 :4...20mA V010 :0...10V</p>	
9.	<p>Electrical connection</p> <p>H : DIN43650-A plug (unavailable for DWE series)</p> <p>S : M12X1 plug</p>	

Electronic Evaluation Units

MST300 - Ratemeter, totalizer	MST200 - Ratemeter, batcher, totalizer
	
Case dimensions 72 x 36 x 97 mm	Case dimensions 96 x 48 x 100 mm
6-digit LED display	6-digit LED display
Flow meter/totalizer	Flow meter/totalizer/batcher
Flow rate/total flow display	Flow rate/total flow display
1 pulse input	1 pulse counting input + 3 control inputs
1 relay (or OC) output	0/2 or 4 Relay / OC outputs
Power supply output 24V DC	Analog output optional
RS-485 / Modbus RTU	Power supply output 24V DC
	RS-485 / Modbus RTU

MST300 - Ratemeter, totalizer	MST200 - Ratemeter, batcher, totalizer
	
Protection class IP67	Max. 72 inputs with the flow/temperature/pressure/level
Case dimensions 110 x 80 x 67mm	Optional outputs with 24 analog outputs/72 SSR outputs
6-digit LED display	Data recording and display
Flow meter/totalizer/batcher	Case dimensions 144X144X100
Flow rate/total flow display	Communication interfaces: RS-485/Modbus RTU, USB, Earthnet 10MB , enhanced ACM version
1 pulse counting input + 3 control inputs	
0/2 or 4 REL / OC outputs	5.7", TFT color graphic display with Touch-panel, 320X240 pixels
Analog output optional	Recording speed: from 0.1s up to 24h, resolution 0.1s
Power supply output 24V DC	Memory capacity: 1.5 GB
RS-485 / Modbus RTU	Free configuration software

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
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Вологда (8172)26-41-59
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Екатеринбург (343)384-55-89
Иваново (4932)77-34-06

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Иркутск (395)279-98-46
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Красноярск (391)204-63-61
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Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16

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Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
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Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13

Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47

Россия (495)268-04-70

Казахстан (772)734-952-31

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