



# Vision Turbine meter

Turbine Flow Meters

Vision Series 2000

## DESCRIPTION

The small turbine meter VISION measurement technology is ideal for the accurate measurement of low viscous and non-aggressive fluids. The VISION 2000 series is most suited for the measurement of flow rates from 0,5 to 35 l/min. The turbine meters can be mounted in any position.

## MEASURING PRINCIPLE

Turbine meters are indirect volumetric meters. When the fluid passes through, a rotor is activated and the movement is either electronically or mechanically transmitted outside. The rotor is turned by the fluid force, proportional to the flow rate. A Hall effect sensor detects the passage of the rotor and supplies pulses, which can be utilized for digital or analogue signal processing. The generated pulses are specified as the K-factor. The large number of pulses provides high resolution. As the mass of the turbine is very small the response time is very short. It is not necessary to install a straight length of pipeline at the upstream side of the meter.



## SPECIFICATIONS

Type	
	VISION 2006 VISION 2008
Performance	
Flow rate	0.5 – 35 l/min
Accuracy	± 3% of reading
Repeatability	< 0.5% under the same operating conditions
Operating temperature	-20°C to 100°C
Operating pressure rate	max. 25 bar; with push-fit connector 10 bar (+20°C) and 7 bar (+65°C)
Burst pressure	200 bar



Badger Meter

Pick up					
<b>Pulse sensor</b>	Hallsensor				
<b>Input power</b>	5 – 24 VDC				
<b>Output signal</b>	Open collector (NPN sinking) @ max. 20 mA, 1-2.2 kOhm pull up resistor required				
<b>Power consumption</b>	approx. 8 mA				
<b>K-factor</b>	<b>Version</b>	<b>Material</b>	<b>Nominal size</b>	<b>Flow range</b>	<b>K-factor</b>
	VISION 2008 4F17	Trogamid CX7323	8 mm	2 – 35 l/min	750 pulse/liter
	VISION 2008 4F17	Grilamid, reinforced fiberglass	8 mm	2 – 35 l/min	750 pulse/liter
	VISION 2008 4F22	Trogamid CX7323	8 mm	1 – 25 l/min	1000 pulse/liter
	VISION 2008 4F22	Grilamid, reinforced fiberglass	8 mm	1 – 25 l/min	1000 pulse/liter
	VISION 2008 4F22	Brass	8 mm	3 – 25 l/min	1000 pulse/liter
	VISION 2008 4F44	Trogamid CX7323	8 mm	1 – 15 l/min	2200 pulse/liter
	VISION 2008 4F44	Grilamid, reinforced fiberglass	8 mm	1 – 15 l/min	2200 pulse/liter
	VISION 2006 4F44	Trogamid CX7323	6 mm	1 – 10 l/min	3300 pulse/liter
	VISION 2008 2F66	Brass	8 mm	2 – 8 l/min	4200 pulse/liter
	VISION 2008 2F66	Trogamid CX7323	8 mm	0.5 – 7.5 l/min	4700 pulse/liter
	VISION 2008 2F66	Grilamid, reinforced fiberglass	8 mm	0.5 – 7.5 l/min	4700 pulse/liter
	VISION 2006 2F66	Trogamid CX7323	6 mm	0.5 – 5 l/min	6900 pulse/liter

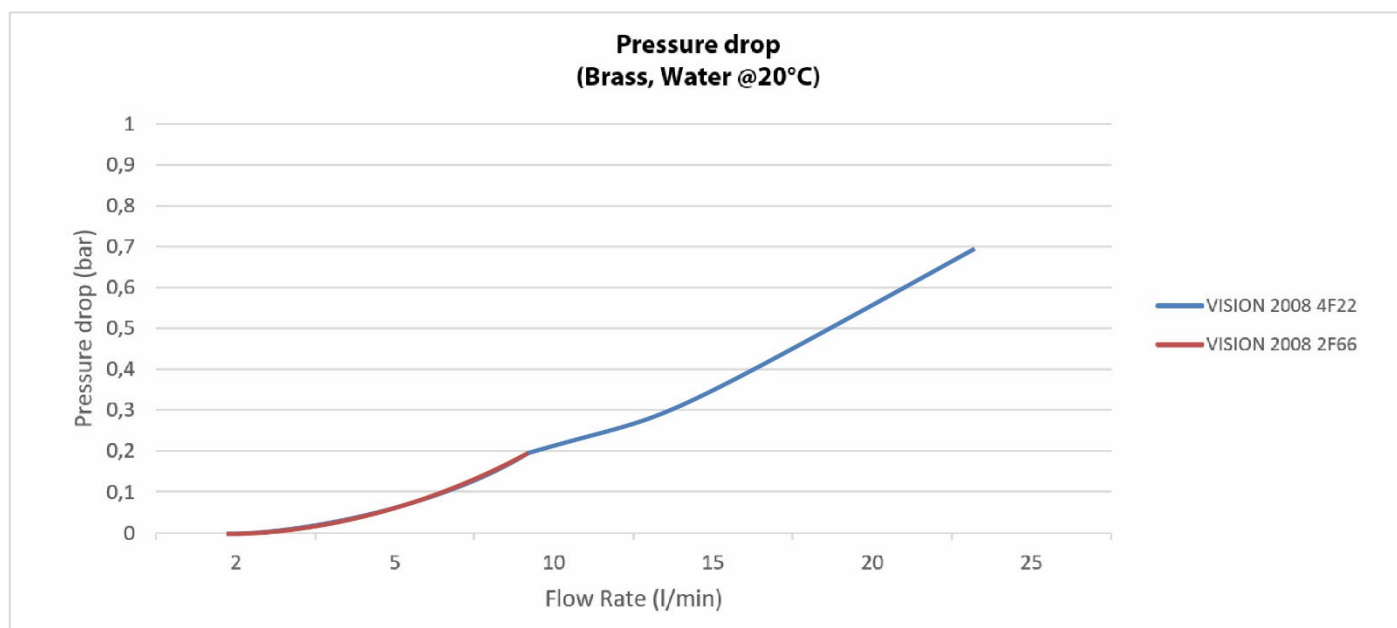
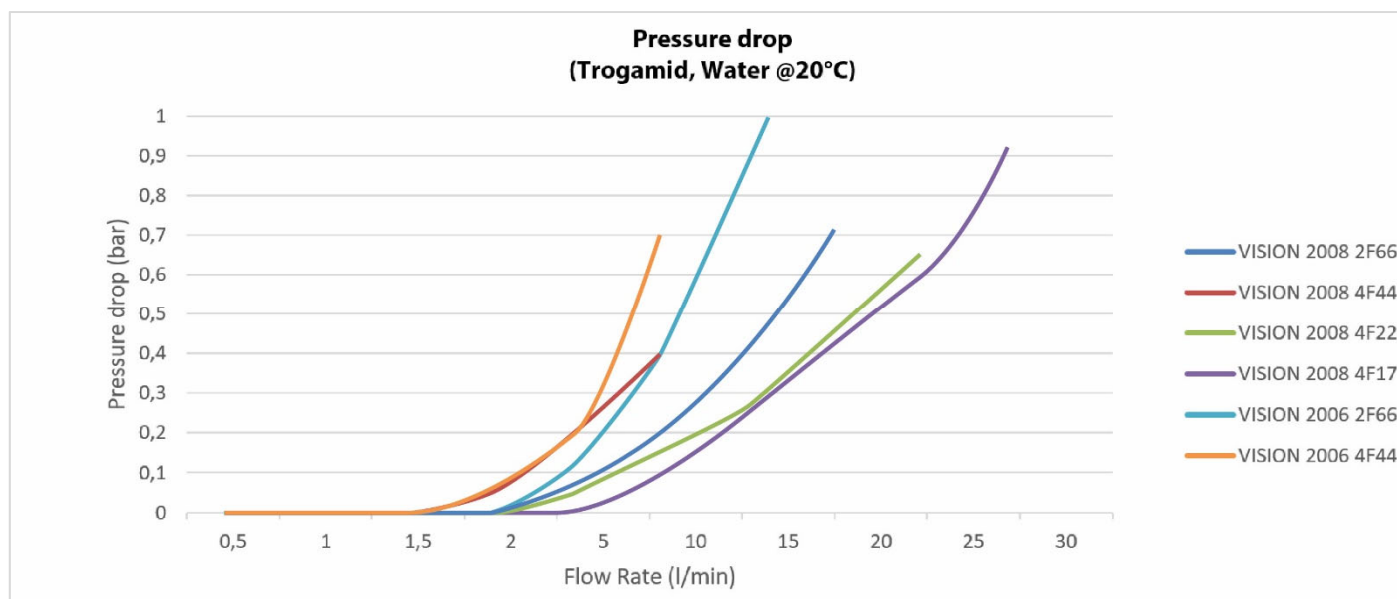
Material	
<b>Housing</b>	Trogamid CX7323 Brass Grilamid LV-50H FWA nature, reinforced fiberglass
<b>Rotor</b>	PPS Ferrite bound
<b>Bearings</b>	2 PTFE / Graphite bearings

Fluids	
<b>Viscosity</b>	0.8 – 16 mm <sup>2</sup> /sec (mPas/cST)
<b>Fluid type</b>	Liquids
<b>Filter</b>	20 to 40 micron recommended

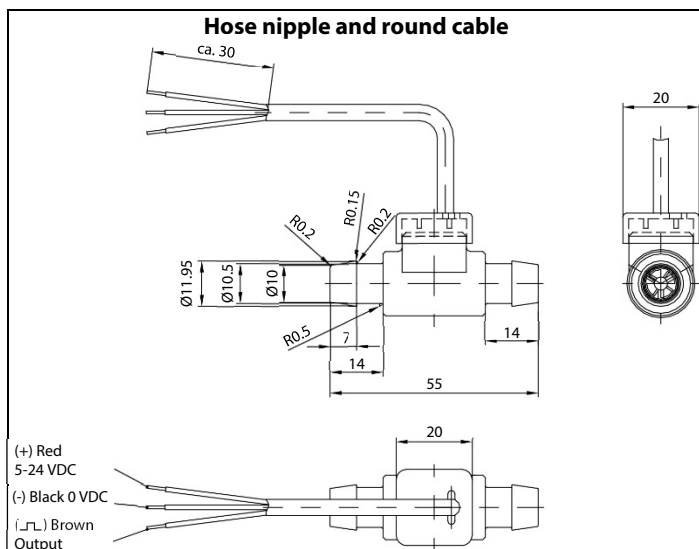
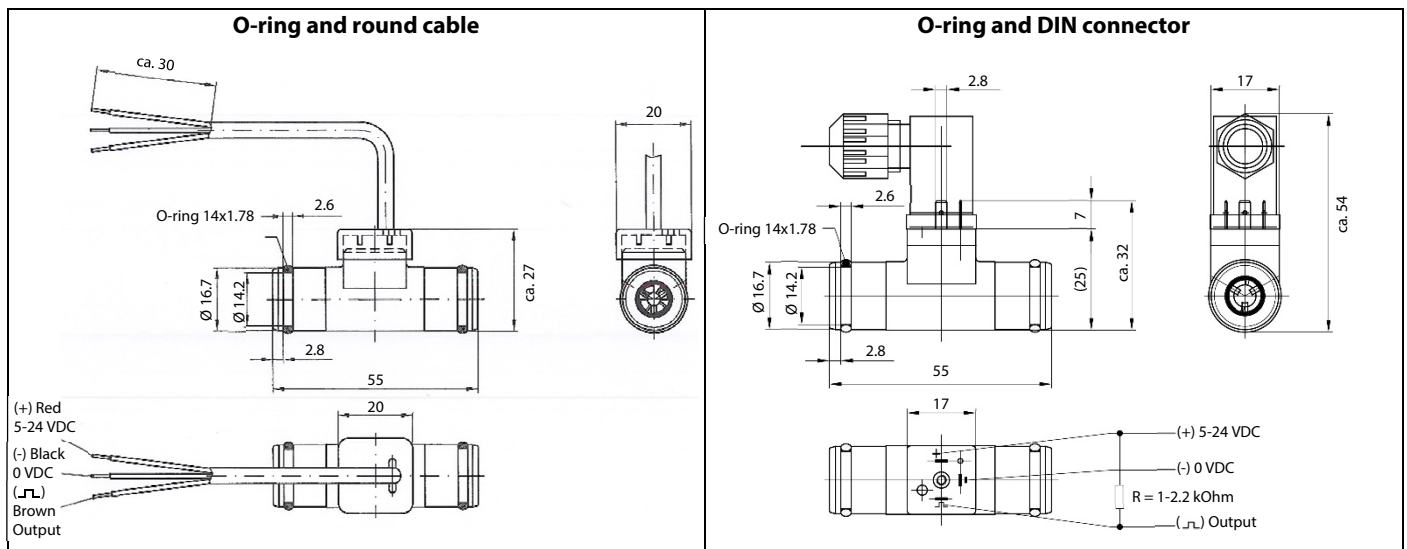
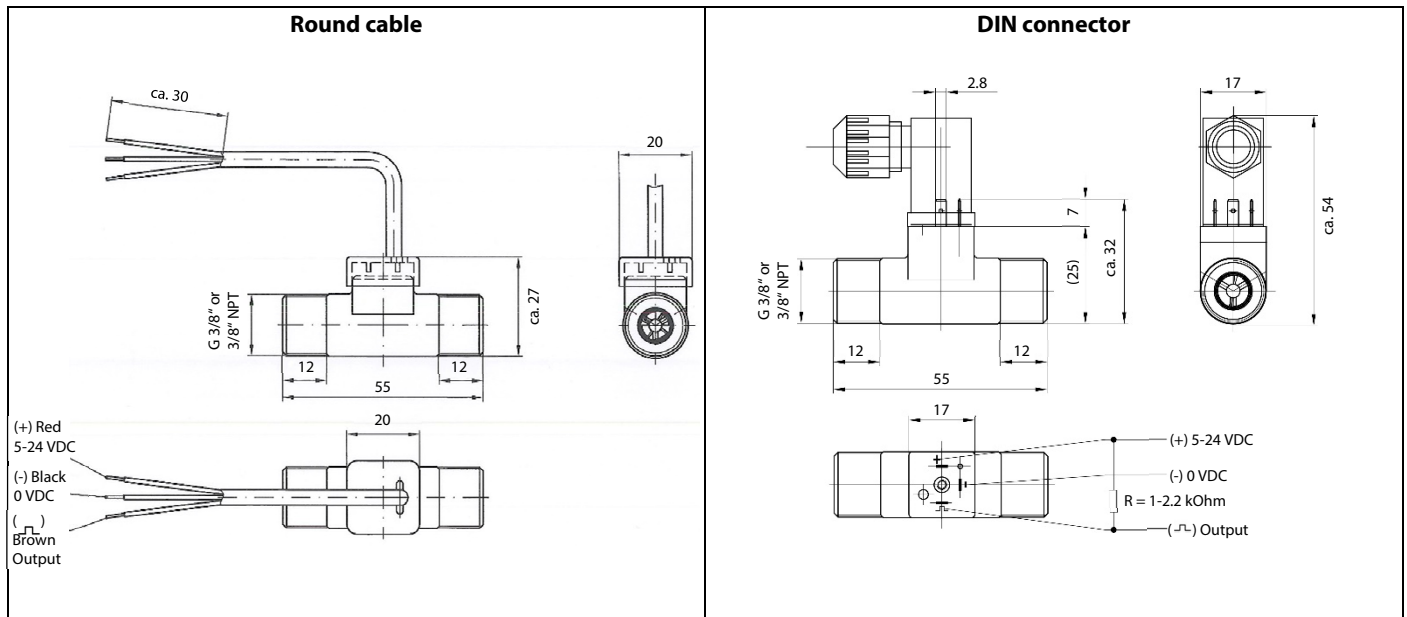
Installation	
<b>Nominal size DN</b>	6 mm, 8 mm
<b>Mounting position</b>	In any orientation
<b>Electrical connection</b>	3 Pin (2.8 x 0.5) for MINI DIN Connector, EN 60529 Round cable 3 x AWG 24 with free cable ends AMP Faston 2.8/6.3x0.8
<b>IP Protection class (DIN Connector)</b>	IP67
<b>Mechanical connection</b>	Trogamid: G 3/8", NPT 3/8", O-ring, Hose nipple Brass: G 3/8", NPT 3/8" Grilamid, fiberglass: G 3/8", Hose nipple, integrated push-fit connection for tube 10mm or 3/8"
<b>Tightening torque for screwed connection</b>	approx. 6 Nm

Weight			
	<b>Housing</b>	<b>Connector</b>	<b>Weight</b>
	Trogamid CX7323	DIN	20 g
	Trogamid CX7323	1 m cable	40 g
	Trogamid CX7323	AMP Faston	10 g
	Grilamid LV-50H FWA	DIN	30 g
	Grilamid LV-50H FWA	DIN, push-fit	45 g
	Grilamid LV-50H FWA	1 m cable	/
	Brass	DIN	85 g
	Brass	1 m cable	105 g

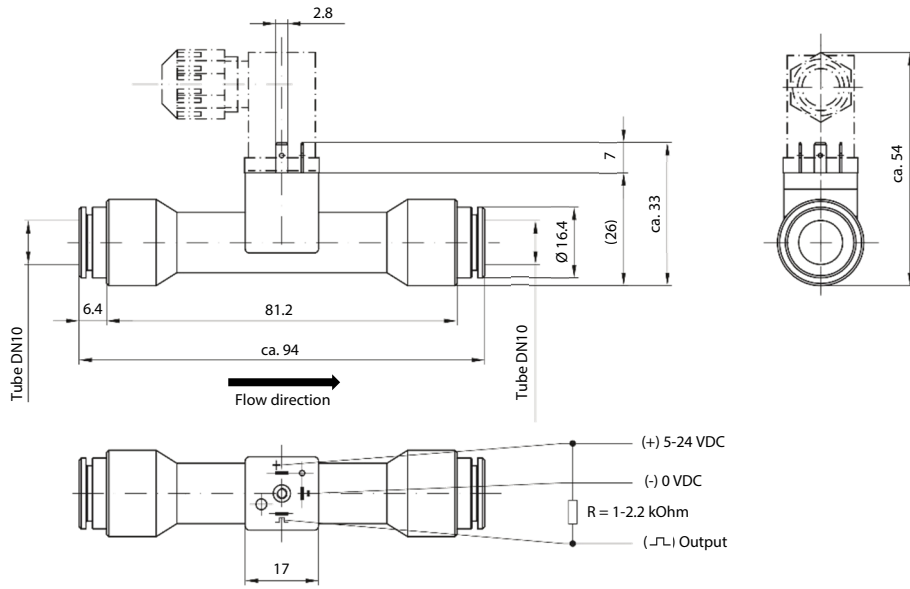
Approvals	
	<b>Approvals</b>
<b>Housing</b>	
Trogamid CX7323	KTW, NSF/ANSI 61, WRAS, ROHS, CE
Brass	KTW, ROHS, CE
Grilamid LV-50H FWA	KTW, ROHS, CE

**PRESSURE DROP**

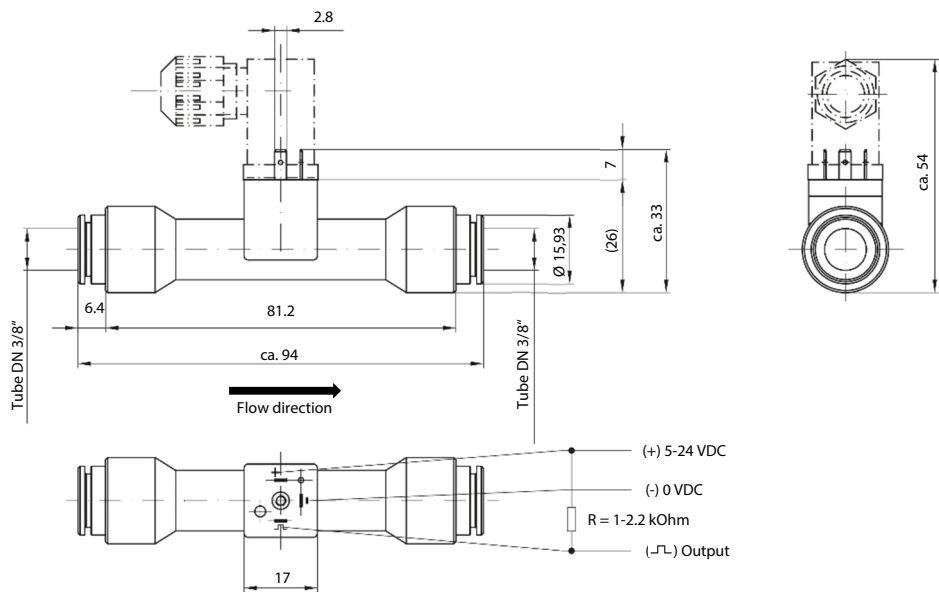
**DRAWINGS**



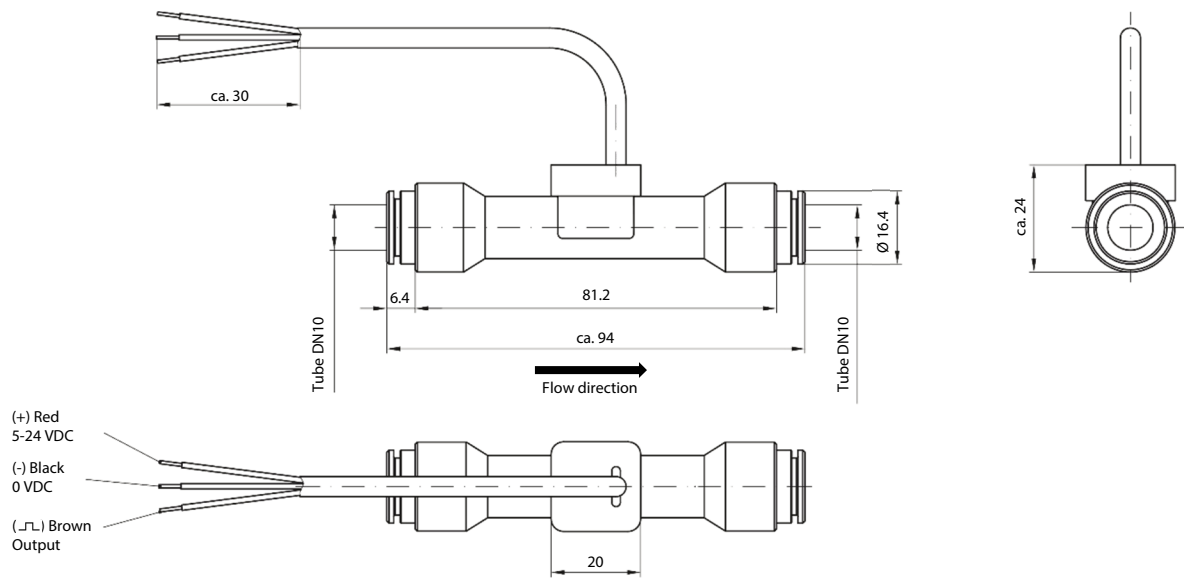
**Push-fit (DN10) and DIN connector**



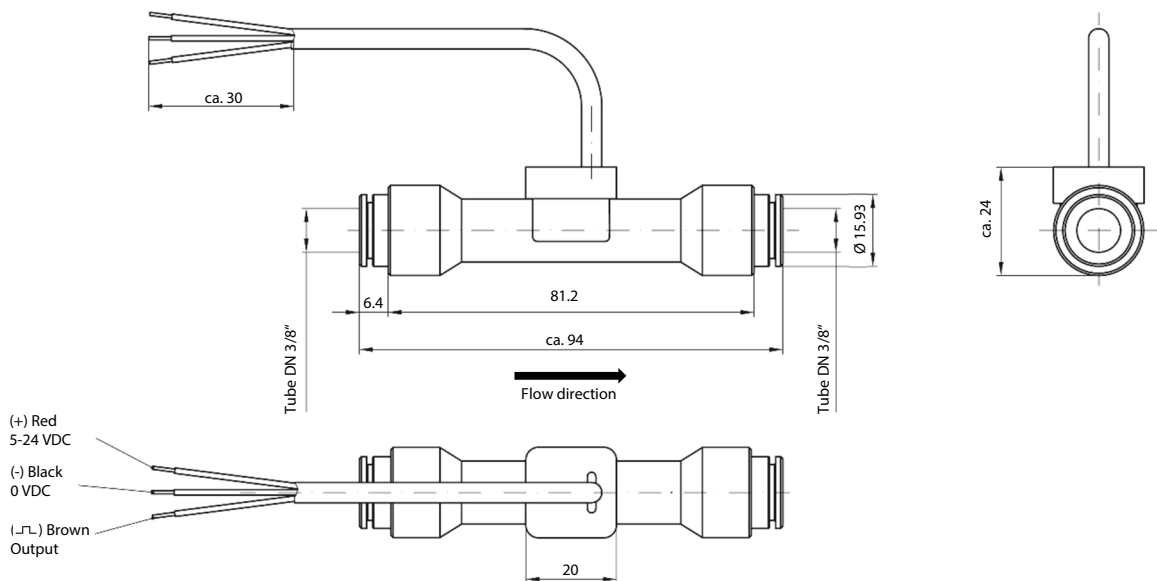
**Push-fit (3/8") and DIN connector**



**Push-fit (DN10) and round cable**



**Push-fit (3/8") and round cable**



## ELECTRICAL WIRING

**Hall sensor**

R = 1-2.2 kOhm

**Cable connection**

brown / Output (Л)  
black / 0 VDC (-)  
red / 5 - 24 VDC (+)

**Faston-Connector**

Output (Л)  
0 VDC (-)  
5 - 24 VDC (+)

## ORDERING MATRIX - VISION 2000 IN TROGAMID

Select process and electrical connection	Code			
<b>Mechanical connector:</b>				
VISION 2008, G 3/8"	56500			
VISION 2008, NPT 3/8"	56502			
VISION 2008, O-Ring	56520			
VISION 2008, Hose nipple	56138			
VISION 2006, G 3/8"	56510			
VISION 2006, NPT 3/8"	56512			
VISION 2006, O-Ring	56521			
VISION 2006, Hose nipple	56138			
<b>Electrical connection:</b>				
DIN connector		-163		
AMP Faston		-164		
Cable – select cable length, see option		-165		
<b>Turbine model:</b>				
VISION 2008			-4F17	
VISION 2008			-4F22	
VISION 2008			-4F44	
VISION 2008			-2F66	
VISION 2006			-4F44	
VISION 2006			-2F66	
<b>Option cable length:</b>				
1 m (standard)				-1
2 m				-2
3 m				-3
<b>Examples:</b>	<b>Code</b>			
VISION 2008 2F66 G3/8" + DIN connector	56500	-163	-2F66	
VISION 2008 4F17 G3/8" + AMP Faston	56500	-164	-4F17	
VISION 2008 4F22 O-Ring + 1m cable	56520	-165	-4F22	-1
VISION 2006 2F66 O-Ring + DIN connector	56521	-163	-2F66	
VISION 2006 2F66 G3/8" + AMP Faston	56510	-164	-2F66	
VISION 2006 4F44 G3/8" + 1m cable	56510	-165	-4F44	-1

### ORDERING MATRIX - VISION 2000 IN FIBERGLASS

Select process and electrical connection	Code			
<b>Mechanical connector:</b>				
G 3/8"	66122			
Hose nipple	56139			
Integrated Push-fit connection tube 3/8"	66131			
Integrated Push-fit connection tube nominal 10 mm	66133			
<b>Electrical connection:</b>				
DIN connector		-163		
Cable – select cable length, see option		-165		
<b>Turbine model:</b>				
VISION 2008			-4F17	
VISION 2008			-4F22	
VISION 2008			-4F44	
VISION 2008			-2F66	
<b>Option cable length:</b>				
1 m (standard)				-1
2 m				-2
3 m				-3

Examples:	Code			
VISION 2008 2F66 fiberglass G3/8" + DIN connector	66122	-163	-2F66	
VISION 2008 4F22 fiberglass hose nipple 1m cable	56139	-165	-4F22	-1

### ORDERING MATRIX - VISION 2000 IN BRASS

Select process and electrical connection	Code			
<b>Mechanical connector:</b>				
G 3/8"	47000			
NPT 3/8"	47001			
<b>Electrical connection:</b>				
DIN connector		-163		
Cable – select cable length, see option		-165		
<b>Turbine model:</b>				
VISION 2008			-4F22	
VISION 2008			-2F66	
<b>Option cable length:</b>				
1 m (standard)				-1
2 m				-2
3 m				-3

Examples:	Code			
VISION 2008 2F66 Brass G3/8" + DIN connector	47000	-163	-2F66	
VISION 2008 4F22 Brass G3/8" + 1m cable	47000	-165	-4F22	-1