

DESCRIPTION

The small flow sensors 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...35 l/min.

The flow sensors can be mounted in any position.

MEASURING PRINCIPLE

Flow sensors 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...100° C
Operating Pressure Rate	Max. 25 bar; with push-fit connector 10 bar (+20° C) and 7 bar (+65° C)
Burst Pressure	100 bar

Pickup

Pulse Sensor	Hall sensor
Input Power	5...24V DC
Output Signal	Open collector (NPN sinking) @ max. 20 mA, 1...2.2 kOhm pullup resistor required
Power Consumption	Approximately 8 mA

K-factor

Version	Material	Nominal Size	Flow Range	K-Factor
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	920 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 (66122, 56139)	Grilamid, reinforced fiberglass	8 mm	0.5...7.5 l/min	4700 pulse/liter
VISION 2008 2F66 (66131, 66133)	Grilamid, reinforced fiberglass	8 mm	0.5...7.5 l/min	5100 pulse/liter
VISION 2006 2F66	Trogamid CX7323	6 mm	0.5...5 l/min	6900 pulse/liter

Material

Housing	Trogamid CX7323
	Brass
	Grilamid LV-50H FWA nature, reinforced fiberglass
Rotor	PPS Ferrite bound
Bearings	2 PTFE / Graphite bearings (standard), bearings without added graphite for VE water or Hostaform bearings for contact with foodstuffs

Fluids

Viscosity	0.8 – 16 mm ² /sec (mPas/cST)
Fluid type	Liquids
Filter	20...40 micron recommended

Installation

Nominal Size DN	6 mm, 8 mm
Mounting Position	In any orientation, observe flow direction
Electrical Connection	3 Pin (2.8 × 0.5) for MINI DIN Connector, EN 60529
	Round cable 3 × AWG 24 with free cable ends
	AMP Faston 2.8/6.3 × 0.8
IP Protection Class (DIN Connector)	IP67
Mechanical Connection	Trogamid: G 3/8 in., NPT 3/8 in., O-ring, Hose nipple
	Brass: G 3/8 in., NPT 3/8 in.
	Grilamid, fiberglass:
	G 3/8 in., Hose nipple, integrated push-fit connection for tube 10 mm or 3/8 in.
Tightening Torque for Screwed Connection	Approximately 6 Nm

Weights

Housing	Connector	Weight
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	60 g
Brass	DIN	85 g
Brass	1 m cable	105 g

Approvals

VISION with housing of	Approvals
Trogamid CX7323	KTW-BWGL, NSF/ANSI 61, WRAS, ROHS, CE, UKCA
Brass	ROHS, CE, UKCA
Grilamid LV-50H FWA	KTW-BWGL, ROHS, CE, UKCA

PRESSURE DROP

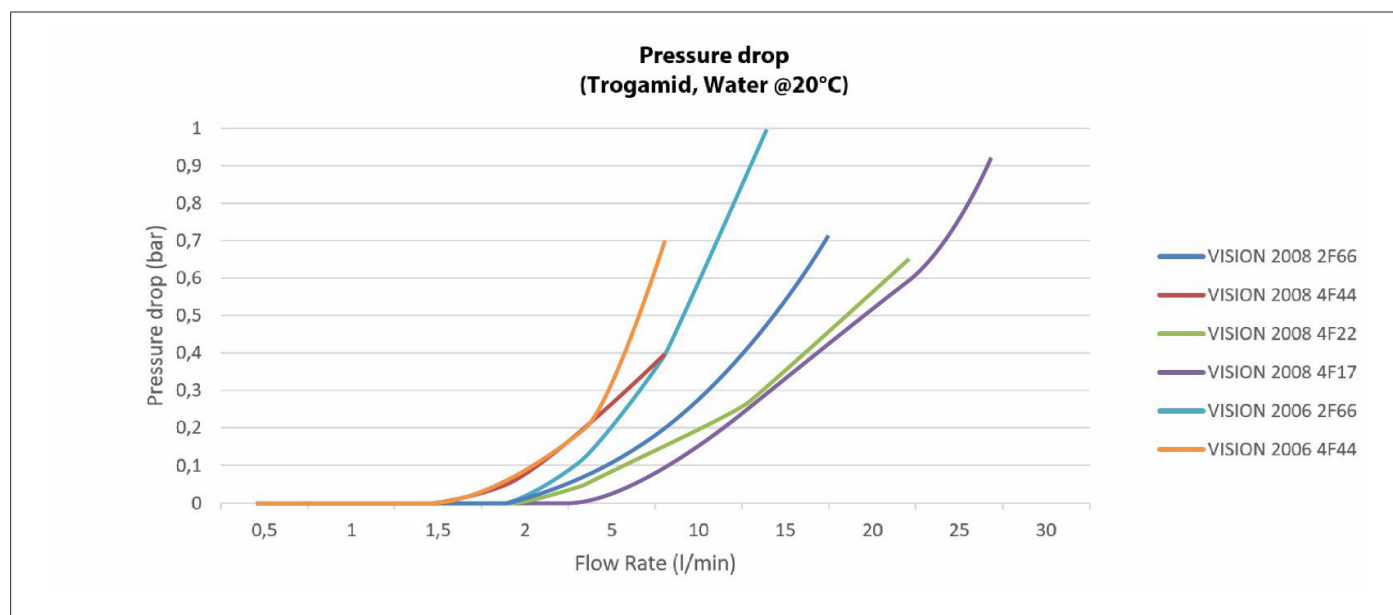


Figure 1: Trogamid, water @ 20°C

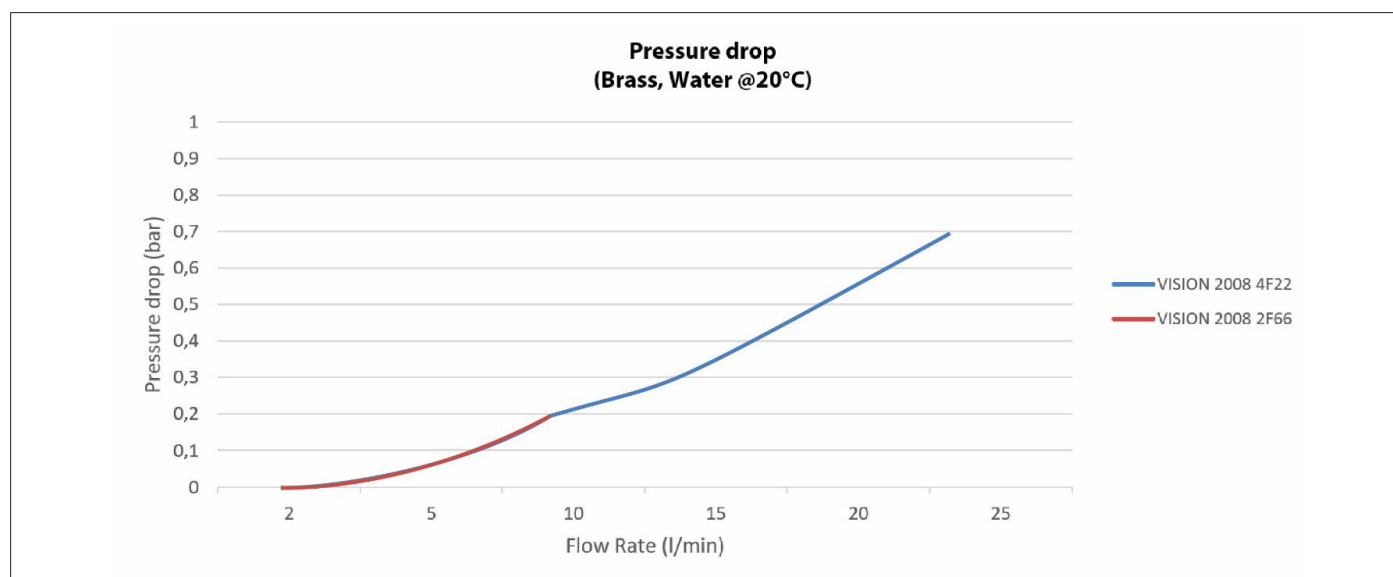


Figure 2: Brass, water @ 20°C

DRAWINGS

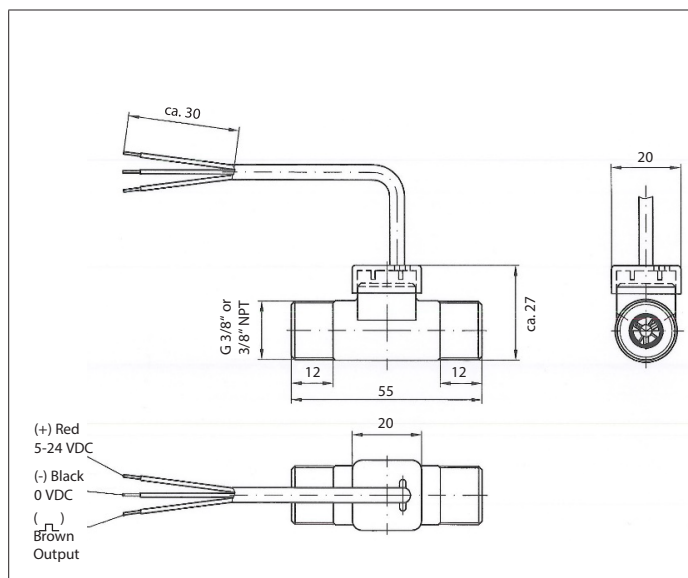


Figure 3: Round cable

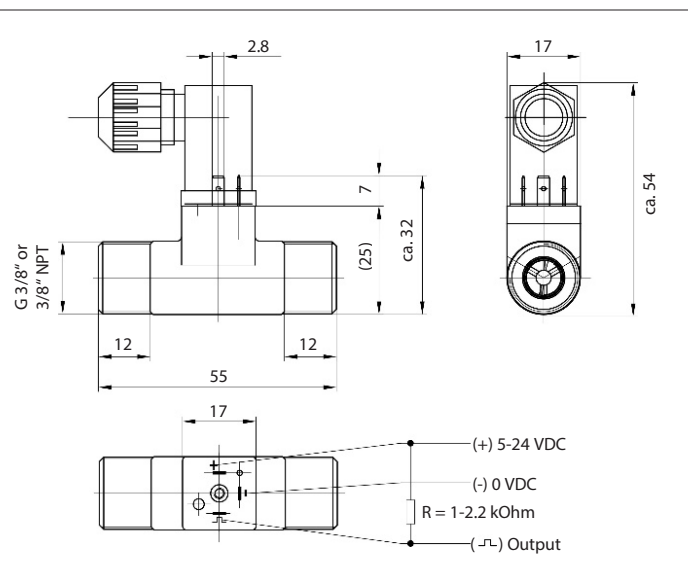


Figure 4: DIN connector

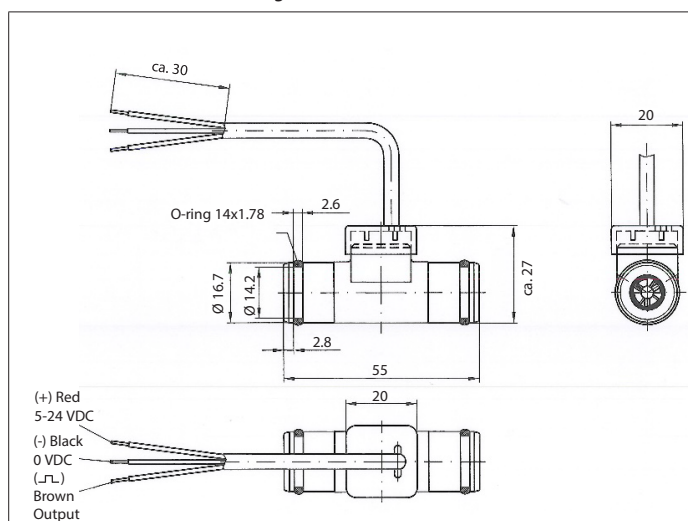


Figure 5: O-ring and round cable

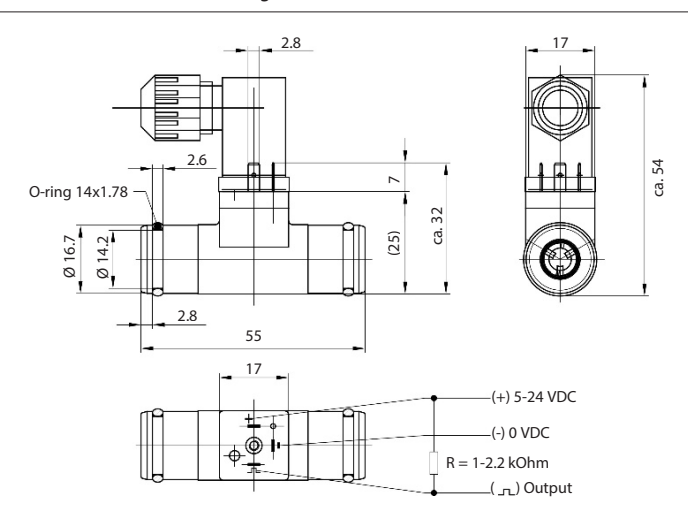


Figure 6: O-ring and DIN connector

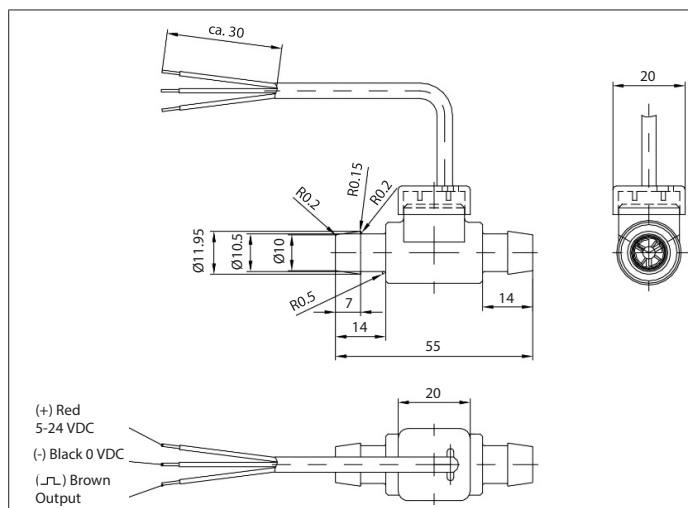
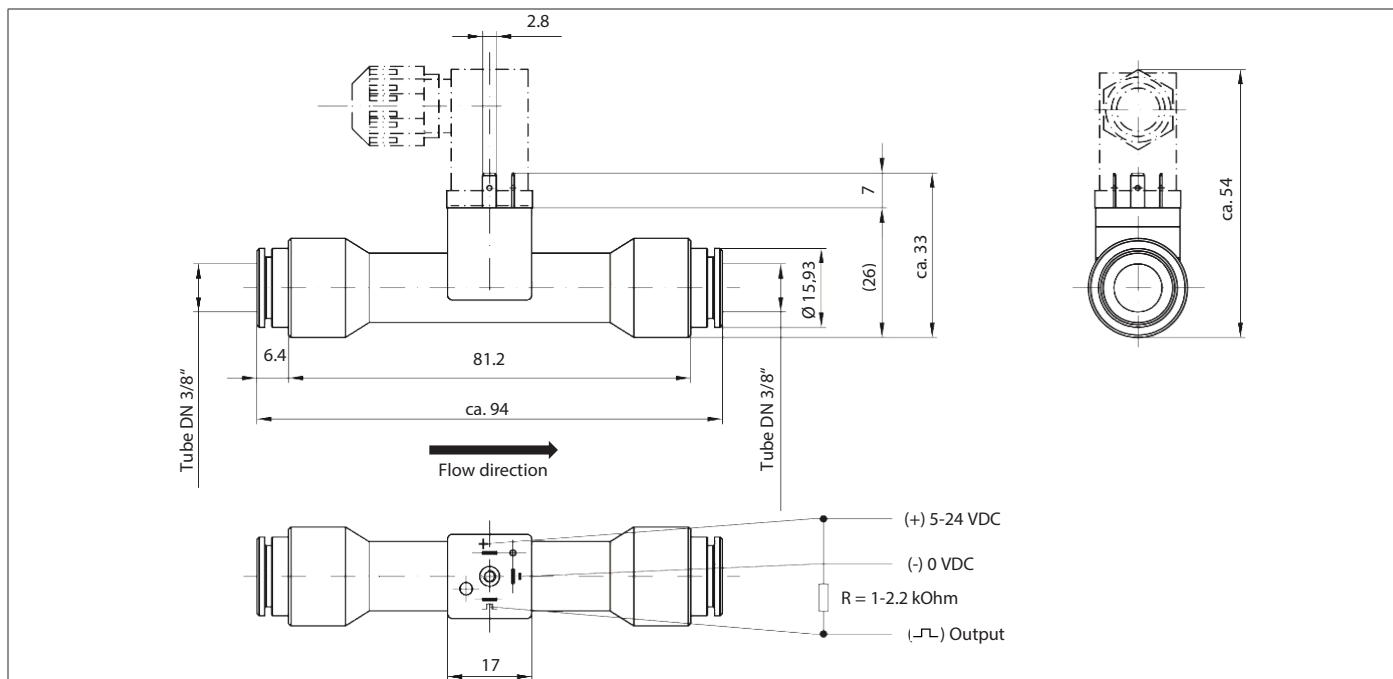
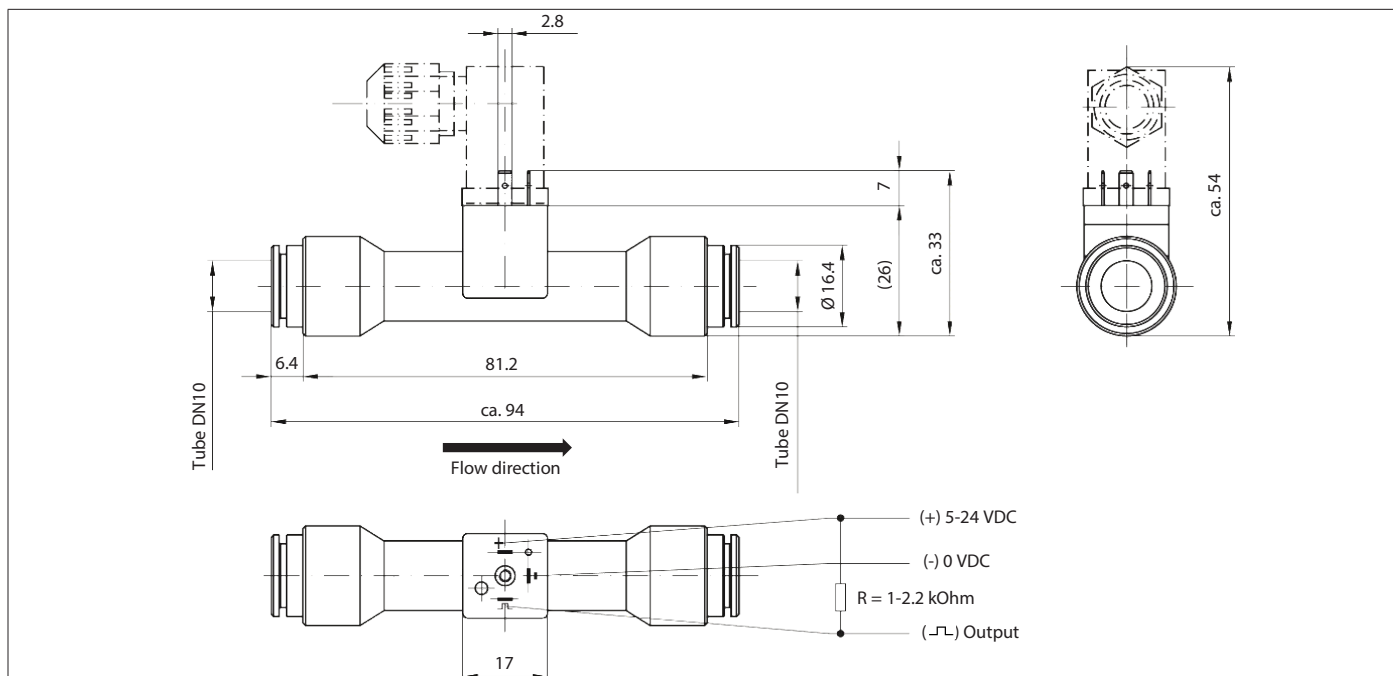


Figure 7: Hose nipple and round cable



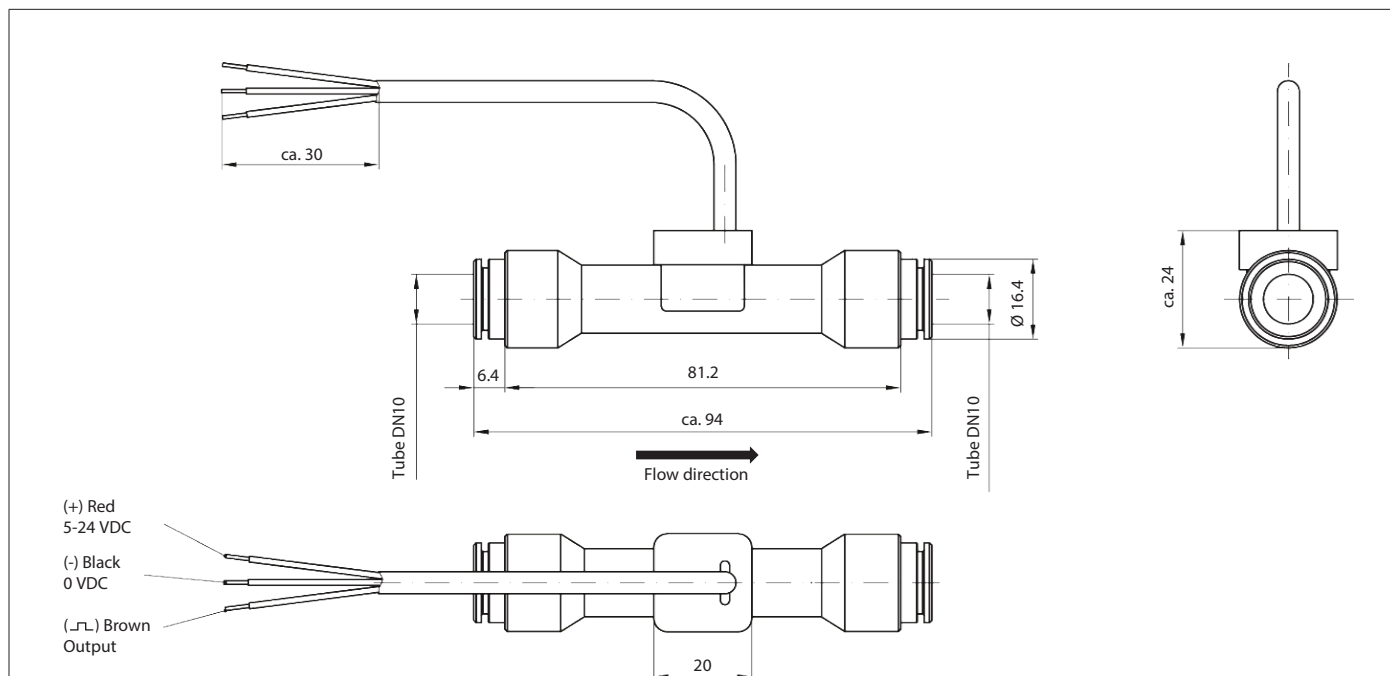


Figure 10: Push-fit (DN10) and round cable

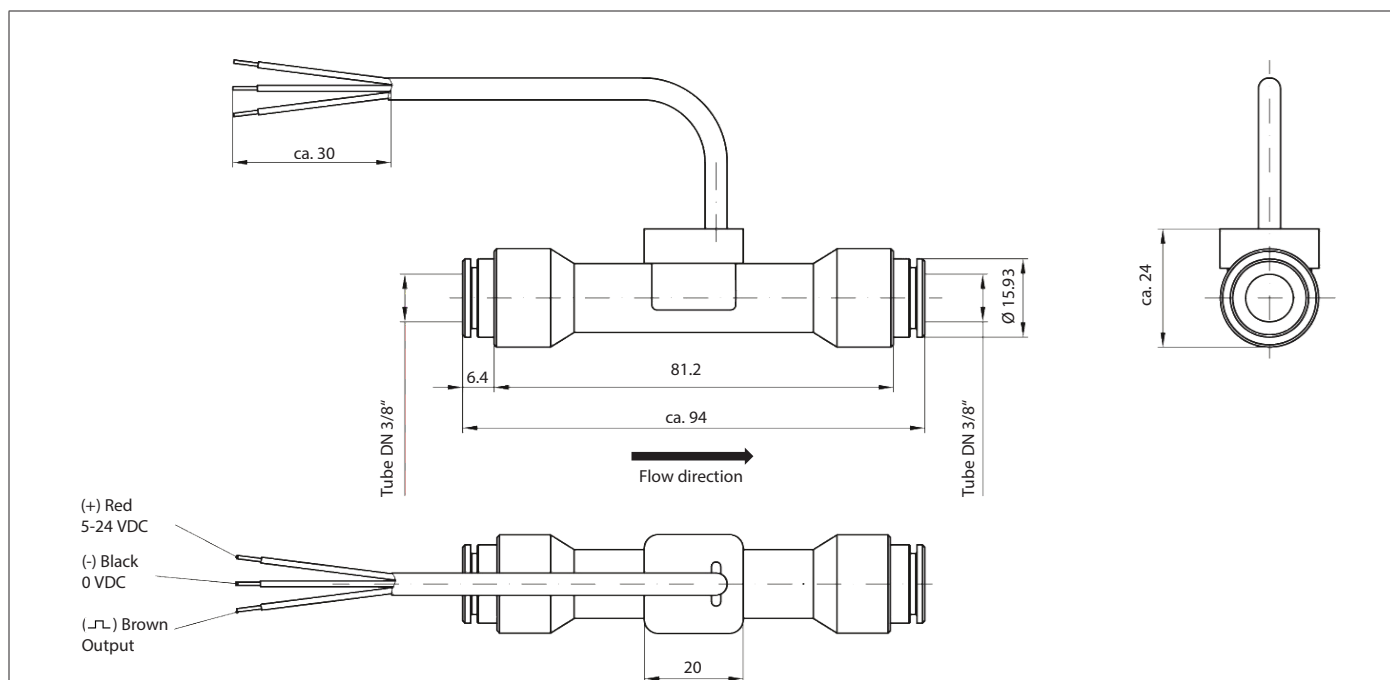


Figure 11: Push-fit (3/8 in.) and round cable

ELECTRICAL WIRING

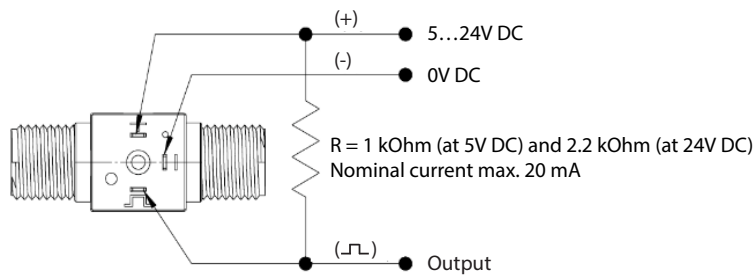


Figure 12: Hall sensor

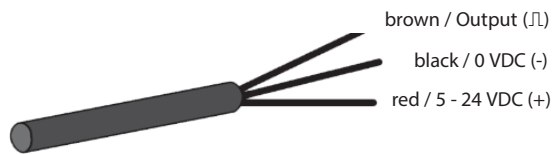
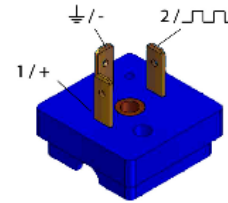


Figure 13: Cable connection



Figure 14: Faston connection

ORDERING MATRIX - VISION 2000 IN TROGAMID

Select process and electrical connection		Code		
Mechanical connector:				
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			
Electrical connection:				
DIN connector	-163			
AMP Faston	-164			
Cable – select cable length, see option	-165			
Turbine model:				
VISION 2008	-4F17			
VISION 2008	-4F22			
VISION 2008	-4F44			
VISION 2008	-2F66			
VISION 2006	-4F44			
VISION 2006	-2F66			
Option cable length:				
1 m (standard)	-1			
2 m	-2			
3 m	-3			
Examples:		Code		
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			
Mechanical connector:				
G 3/8"	66122			
Hose nipple	56139			
Integrated Push-fit connection tube 3/8"	66131			
Integrated Push-fit connection tube nominal 10 mm	66133			
Electrical connection:				
DIN connector		-163		
Cable – select cable length, see option		-165		
Turbine model:				
VISION 2008			-4F17	
VISION 2008			-4F22	
VISION 2008			-4F44	
VISION 2008			-2F66	
Option cable length:				
1 m (standard)				-1
2 m				-2
3 m				-3
Examples:				
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		
Mechanical connector:				
G 3/8"	47000			
NPT 3/8"	47001			
Electrical connection:				
DIN connector		-163		
Cable – select cable length, see option		-165		
Turbine model:				
VISION 2008			-4F22	
VISION 2008			-2F66	
Option cable length:				
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

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