



Turbine volume flow sensor



Precise and proven measuring turbine with inside thread connection acc. to DIN ISO 228, available with digital (frequency, rectangle signal) or analog (4 ... 20 mA) output signal.

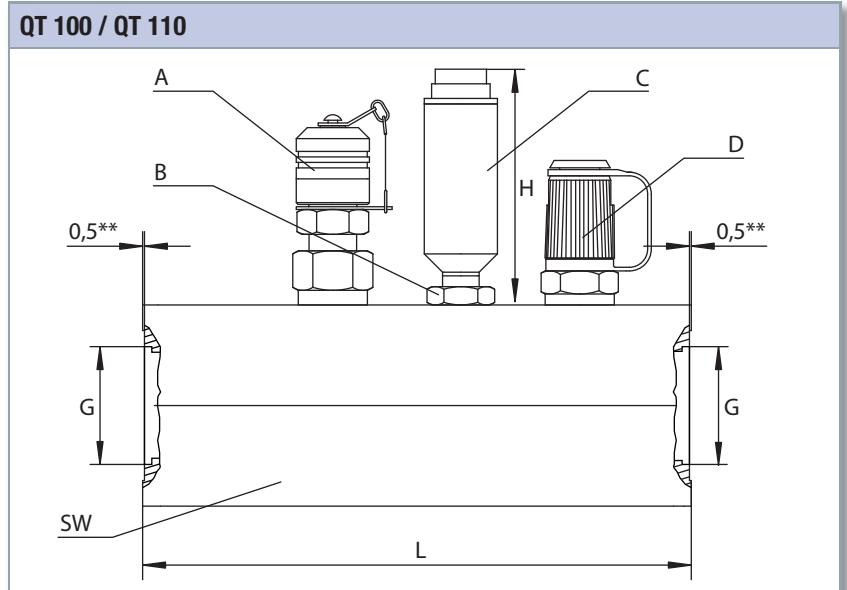
The turbines have a factory calibration for mineral oil at 30 cSt, other calibration viscosities are available. You can also order versions with flow measuring in both directions, but detection of the flow direction is not possible.

Qualities	
Measuring principle	volume flow
Viscosity range	see order data
Medium temperature	max. +120 °C
Environmental temperature	-20 ... +85 °C
Storage temperature	-20 ... +85 °C
Output signal	frequency (rectangle) / 4 ... 20 mA
Supply voltage U_b	12 ... 24 VDC
Electrical measuring connector	5 pole device connector, M16 x 0.75
Protection type (EN 60529 / IEC 529)	IP 40
Tightening torque	10 Nm (\pm 2 Nm)
Calibration viscosity	30 mm ² /s (cSt)
Material turbine casing	Aluminium AlZnMgCu 1,5
Material turbine wheel	1.4122 (for measuring range 1.0 ... 10 l/min) 1.0718 (for all other measuring ranges)
Material sealings	FKM
Material sensor casing	1.4301
Suitable measuring cable	MK 01

Pin assignment	QT 100 (frequency)	QT 110 (4 ... 20 mA)
	Pin 1 = signal +	Pin 1 = signal +
	Pin 2 = - U_b / signal - / GND	Pin 2 = signal - / GND
	Pin 3 = + U_b	Pin 3 = + U_b
	Pin 4 = free	Pin 4 = free
	Pin 5 = free	Pin 5 = free

Measuring range	Allowed working pressure		Viscosity range	Error limit*	Order number / weight			
	l/min	bar			MPa	mm ² /s (cSt)	of current value	QT 100 (frequency)
1.0 ... 10.0	420	42	1 ... 60	\pm 2.5 %	31V7-01-35.030	631	31G7-01-35.030	681
7.5 ... 75.0			1 ... 100	\pm 2.5 %	31V7-70-35.030	785	31G7-70-35.030	869
15 ... 300			1 ... 100	\pm 2.5 %	31V7-71-35.030	1,125	31G7-71-35.030	1,206
25 ... 600	350		1 ... 100	\pm 2.0 %	31V7-72-35.030	1,378	31G7-72-35.030	1,498

*: for QT 100 and factory calibrated viscosity;
for QT 110 additional \pm 0.2 % of final value (error f/l-converter)



Measuring range	L	SW	G
l/min	mm		
1.0 ... 10.0	120	41	ISO 228-G $\frac{1}{4}$
7.5 ... 75.0	130	46	ISO 228-G $\frac{3}{4}$
15 ... 300	150	55	ISO 228-G1
25 ... 600	174	60	ISO 228-G1 $\frac{1}{4}$

- A MINIMESS® p/T test point for pressure and temperature, series 1620
- B max. tightening torque $M = 10 \pm 2$ Nm
- C inductive sensor / amplifier
- D MINIMESS® test point, series 1620
- H height is appr. 58 mm (for QT 100) or appr. 108 mm (for QT 110)
- ** depth of the spot face



CAN turbine volume flow sensor



A version has been adapted for the CAN bus based on our precise and proven measuring turbine with inside thread connection according to DIN ISO 228.

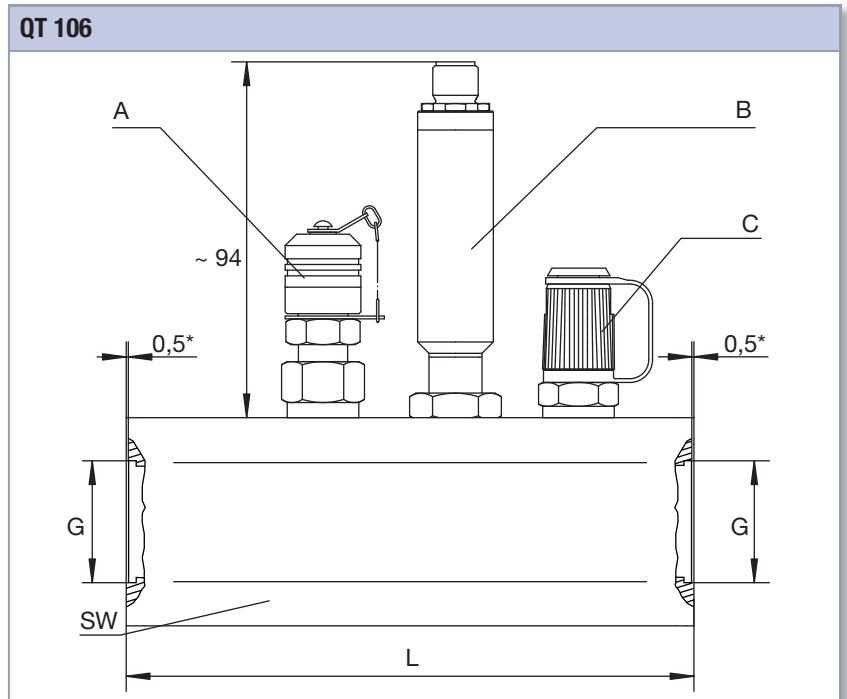
The turbines are factory calibrated for mineral oil at 30 cSt. Other calibration viscosities are available.

Qualities	
Measuring principle	volume flow
Viscosity range	see order data
Medium temperature	max. +120 °C
Environmental temperature	-20 ... +85 °C
Storage temperature	-20 ... +85 °C
Output signal	CANopen
Supply voltage U_b	8.5 ... 30 VDC
Electrical measuring connector	5 pole device connector, M12 x 1
Protection type (EN 60529 / IEC 529)	IP 67 (screwed)
Tightening torque	10 Nm (\pm 2 Nm)
Calibration viscosity	30 mm ² /s (cSt)
Material turbine casing	Aluminium AlZnMgCu 1,5
Material turbine wheel	1.4122 (for measuring range 1,0 ... 10 l/min) 1.0718 (for all other measuring ranges)
Material sealings	FKM
Material sensor casing	3.1645
Current consumption	max. 50 mA @ 24 VDC
Interface	CANopen (CIA-DS-301)
CAN standard	2.0A (opt. 2.0B)
Transmission rate	20 ... 1.000 kBit/s
Measured frequency (Hz)	bytes 0 ... 3
Measured volume flow (l/min)	bytes 4 ... 7
Resolution	three decimal places
Suitable measuring cable	CAN cable

Pin assignment	CANopen 2.0A
	Pin 1 = CAN_SHLD
	Pin 2 = CAN_V+
	Pin 3 = CAN_GND
	Pin 4 = CAN_H
	Pin 5 = CAN_L

Measuring range	Max. working pressure		Viscosity range	Error limit	Weight	Order number
	l/min	bar				
1 ... 10	420	42	1 ... 60	± 1.0 %	671	31C7-01-35.030
2 ... 75	420	42	1 ... 100	± 0.5 %	859	31C7-70-35.030
9 ... 300	420	42	1 ... 100	± 0.5 %	1,190	31C7-71-35.030
16 ... 600	350	35	1 ... 100	± 0.5 %	1,488	31C7-72-35.030

QT 106



- A MINIMESS® p/T test point for pressure and temperature, series 1620
- B inductive sensor / amplifier
- C MINIMESS® test point, series 1620
- * depth of spot face

Measuring range	SW	L	G
l/min		mm	
1 ... 10	41	120	ISO 228-G¼
2 ... 75	46	130	ISO 228-G¾
9 ... 300	55	150	ISO 228-G1
16 ... 600	60	174	ISO 228-G1¼

HySense QT 118

Turbine volume flow sensor with increased IP protection

NEW



The turbines are factory calibrated for mineral oil at 30 cSt. Other calibration viscosities are available on request.

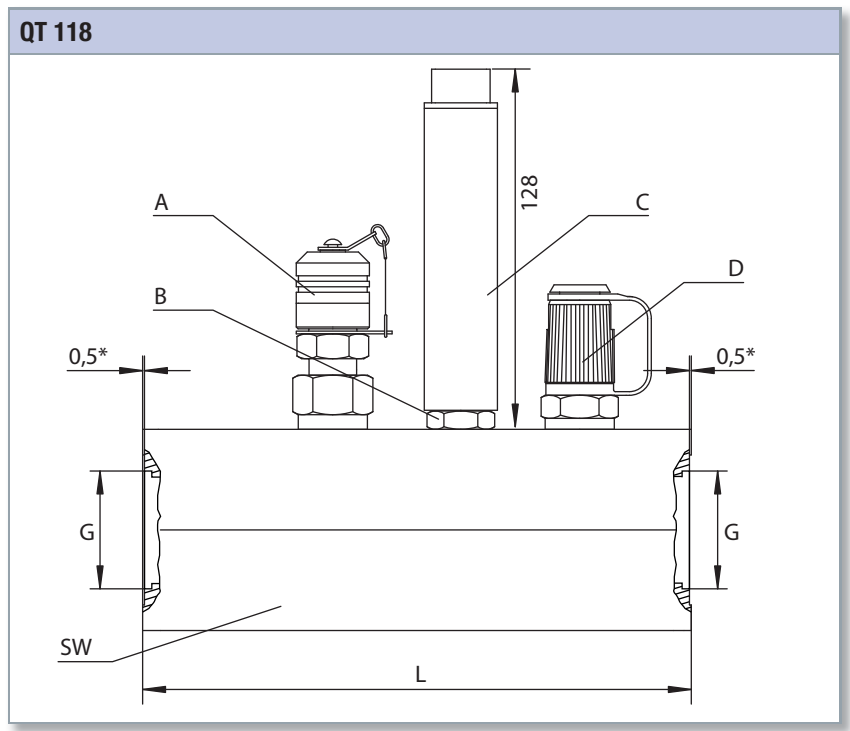
Qualities

Measuring principle	volume flow
Viscosity range	see order data
Medium temperature	max. +120 °C
Environmental temperature	-20 ... +85 °C
Storage temperature	-20 ... +85 °C
Output signal	4 ... 20 mA
Supply voltage U_b	12 ... 24 VDC
Electrical measuring connector	device connector 3 pole AMP, acc. to DIN 72585
Protection type (EN 60529 / IEC 529)	IP 69
Tightening torque	10 Nm (\pm 2 Nm)
Calibration viscosity	30 mm ² /s (cSt)
Material turbine casing	Aluminium AlZnMgCu 1,5
Material turbine wheel	1.4122 (for measuring range 1.0 ... 10 l/min) 1.0718 (for all other measuring ranges)
Material sealings	FKM
Material sensor casing	1.4571
Suitable measuring cable	customer-specific

Pin assignment

	4 ... 20 mA
	Pin 1 = signal +
	Pin 2 = signal - / GND
	Pin 3 = + U_b

Measuring range	Max. working pressure		Viscosity range	Error limit	Weight	Order number
	l/min	bar				
1.0 ... 10.0	420	42	1 ... 60	\pm 2.5 % of current value	681	31N7-01-35.030
7.5 ... 75.0	420	42	1 ... 100	\pm 2.5 %	869	31N7-70-35.030
15 ... 300	420	42	1 ... 100	\pm 2.5 %	1,206	31N7-71-35.030
25 ... 600	350	35	1 ... 100	\pm 2.0 %	1,498	31N7-72-35.030



Measuring range	L	SW	G	Error limit*
l/min	mm			%
1.0 ... 10.0	120	41	ISO 228-G $\frac{1}{4}$	± 2.5
7.5 ... 75.0	130	46	ISO 228-G $\frac{3}{4}$	
15 ... 300	150	55	ISO 228-G1	± 2.0
25 ... 600	174	60	ISO 228-G1 $\frac{1}{4}$	

- A MINIMESS® p/T test point for pressure and temperature, series 1620
- B max. tightening torque M = 10 ± 2 Nm
- C inductive sensor / amplifier
- D MINIMESS® test point, series 1620
- * depth of spot face

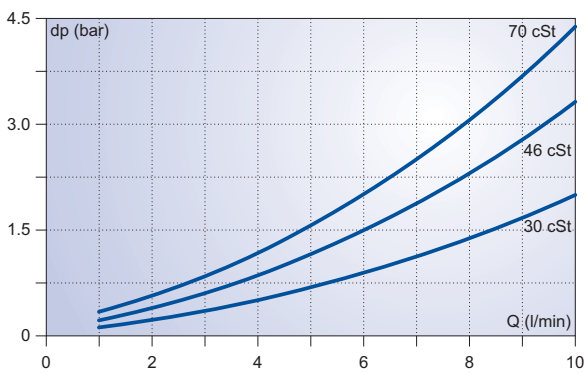
HySense QT 1xx

delta-P curves

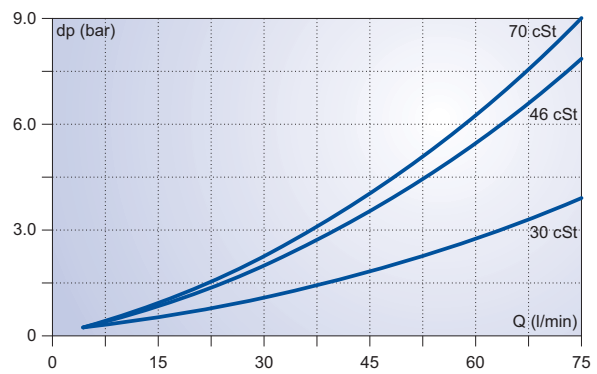
The delta-P curves shown here are valid for the volume flow sensors of the HySense® QT 1xx range, shown on the previous pages:

- QT 100
- QT 106
- QT 110
- QT 118

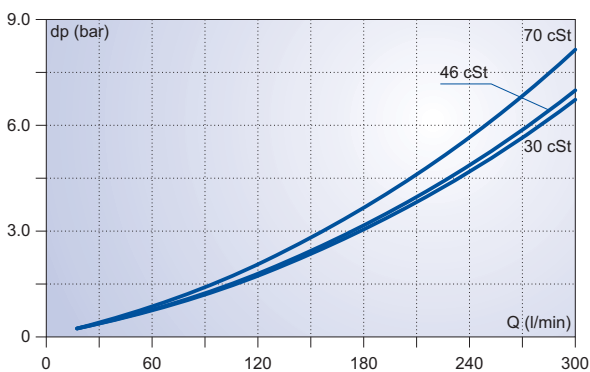
Q = 1.0 ... 10 l/min



Q = 7.5 ... 75 l/min



Q = 15 ... 300 l/min



Q = 25 ... 600 l/min

