Description

Microcontroller operated Flow Meter to measure and monitor flow velocity, volume flow and temperature of water.

The RS232 interface allows configuration, operation and data logging by means of a PC software.

FC100-LQ

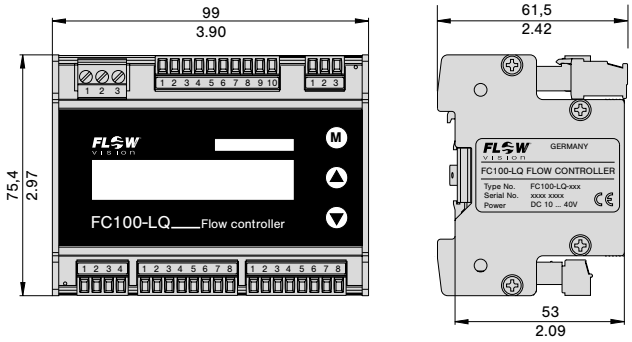
rail mounted housing surface mounted housing

Features

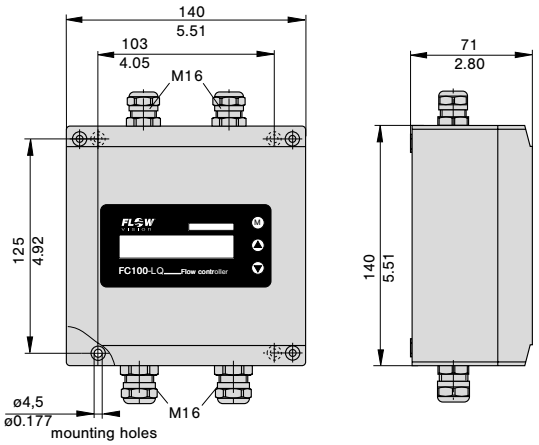
- Menu driven (keypads)
- LC display (2 x 16 digits) can show:
  - actual flow velocity, volume flow rate, temperature
  - directions for parameter assignment, configuration, diagnostics and error correction;
  - peak values indication
- Two scalable analogue outputs
- Minimum/maximum memory of flow velocity, volume flow and temperature
- Two freely selectable limit contacts
- Quantity dependent pulse output
- Totalizer (with external reset), power fail-safe
- display illumination
- RS232 interface allows configuration, operation and data logging by means of a PC software

Dimensions

FC100-LQ (rail mounted housing)



FC100-FH-LQ (surface mounted housing)



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Ordering information

Type					
FC100-LQ	Flow Meter in rail mounted housing				
FC100-FH-LQ	Flow Meter in surface mounted housing				
	Input voltage				
	U1	DC 10 ... 40 V			
		Signal outputs			
		R2	2 relay outputs (2 limit values)		
		T4	4 transistor outputs (2 limit values + 2 status or 2 limit values + 1 status + 1 pulse output)		
			Analogue outputs		
			V1	0/1-5 Volt	
			V2	0/2-10 Volt	
			C1	0/4-20 mA (self-powered, galvanically isolated)	
				Serial interface	
				K1	RS232 (with PC-Software)
FC100-LQ	**- U1**	**R2**	**V1**	**K1**	ordering example

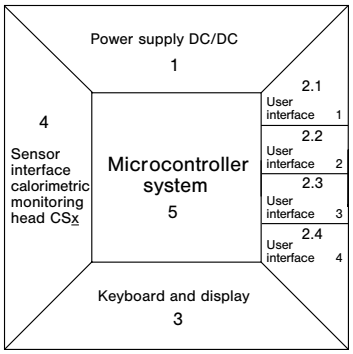
TECHNICAL DATA

Flow Meter FC100-LQ		with monitoring head CSP and sensor adapter TP/ball valve BV	with monitoring head CSF
General data			
Suitable for		water	
Measuring functions		flow velocity, volume flow rate, temperature	
Display		2 x 16-digit LC display (illuminated)	
Configuration by		keypads or PC software	
Serial interface		RS232, PC-Software runs on Windows® XP/Windows Vista®/Windows® 7	
Ambient temperature range (electronic control unit)		+5 °C ... +50 °C/+41 °F ... +122 °F	
Electrical data			
Supply voltage		DC 10 ... 40 V	
Power consumption		DC 10 V: 650 mA; DC 24 V: 240 mA; DC 40 V: 150 mA	
Analogue outputs	flow and temperature	0/4-20 mA or 0/2-10 V or 0/1-5 V	
Signal outputs	2 relay outputs (2 limit values)	2 SPDT contacts AC/DC 50 V/1 A/50 W	
	4 transistor outputs (2 limit values + 2 status, or 2 limits values + 1 status + 1 pulse output)	open collector outputs DC 36 V/150 mA/1,5 W	
MTTF (SN 29500)		54 ... 79 years, depends on device type, for details see MTTF-certificate	
Flow measurement			
Measuring range 0.05 ... 3 m/s / 0.164 ... 9.84 fps (display range 0 ... 4 m/s / 0 ... 13.1 fps)		in TP-01 0,02 - 2,2 (2,9) m^3/h	see table flow measurement range (next page)
		in TP-02 0,04 - 3,4 (4,5) m^3/h	
		in TP-03 0,05 - 5,3 (7,1) m^3/h	
		in TP-04 0,10 - 8,7 (11,6) m^3/h	
		in TP-05 0,14 - 13,6 (18,1) m^3/h	
		in TP-06 0,20 - 21,2 (28,3) m^3/h	
Accuracy [2]		see failure diagram	
Repeatability (5 % MRFV - 100 % MRFV) [1]		±1% of measured value ±0.5 % of measuring range final value	
Temperature drift of electronic control unit		0.05 % of measuring range final value/°C 0.09 % of measuring range final value/°F	
Temperature measurement			
Measuring range		-40 ... +130 °C/-40 ... +266 °F	
Accuracy		±1 % of measuring range	
Mechanical data (electronic control unit)			
Degree of protection	rail mounted	IP20	
	surface mounted	IP66	
Materials	rail mounted	Aluminium, display: polyester foil	
	surface mounted	Aluminium/acrylic	
Housing dimensions (LxWxH)		see dimensions (previous page)	
Weight	rail mounted	365 g/0.805 lb	
	surface mounted	1200 g/2.65 lb	
Cables	voltage supply	3x0,75 mm^2/3x1.16·10^{-3} $in.^2$ (AWG 18)	
	to monitoring head	LifYCY 4x2x0,2 mm^2/4x2x0.31·10^{-3} $in.^2$ (AWG 24)	
	analogue outputs	2 x LifYCY 2x0,25 mm^2/2x0.388·10^{-3} $in.^2$ (AWG 24)	
	limit value outputs	2 x LifYCY 3x0,38 mm^2/3x0.589·10^{-3} $in.^2$ (AWG 22)	
	Max. cable length to monitoring head	200 m/656 ft	

[1] At constant temperature and flow conditions and stable thermal conductivity.
[2] The accuracy values were determined under ideal conditions:
- symmetrical complete flow profile
- correct mounting in the pipe
- inlets and outlets according to EN ISO 5167-1

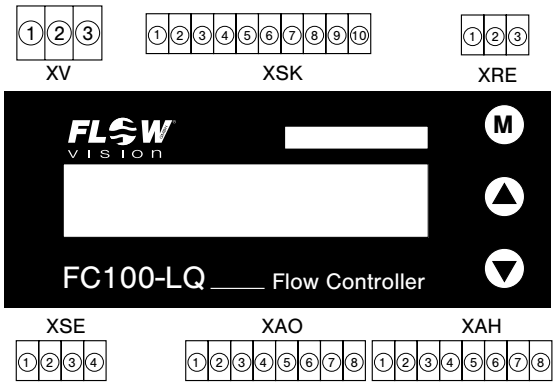
MRFV = measuring range final value

Block diagram



1	Input voltage:	DC 10 ... 40 V	
2.1	User interface 1:	relay outputs: transistor outputs:	2 limit values 2 limit values + 1 error indication + 1 busy signal or pulse output (software selected)
2.2	User interface 2:	analogue outputs:	temperature and flow current or voltage
2.3	User interface 3:	RS232 interface	
2.4	User interface 4:	totalizer reset:	edge controlled potential free, normally open contact or voltage pulse DC10 ... 40 V
3	Keyboard/Display:	keypads LC display 2 x 16 digits backlight (can be switched off)	
4	Sensor interface:	calorimetric monitoring head type CSx	
5	Controller system:	signal processing I/O - controlling monitoring parameter memory communication	

Connection diagram



XV - power supply
XSK - calorimetric monitoring head
XRE - totalizer reset
XSE - RS232 communication interface
XAO - analogue outputs
XAH - signal outputs

Flow measurement range (CSF-11.. monitoring head)

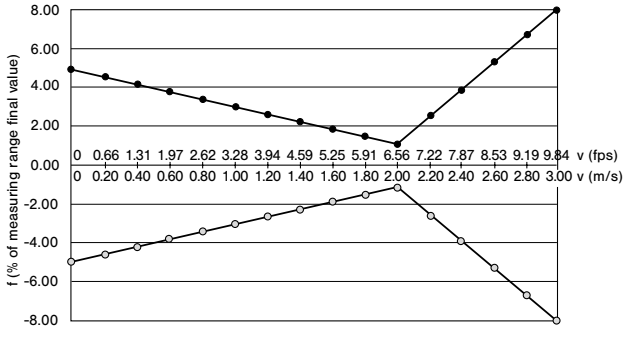
The flow measurement range is determined by the inside pipe diameter (see table). It can be calculated with the following equation:

$Q = V_N \times A_R$
Q (m^3/h) - flow quantity
V_N (m/h) - average velocity
A_R (m^2) - inside pipe diameter

Setting range for inside pipe diameter:
50.0 mm ... 999.9 mm/1.97 in. ... 39.4 in.
velocity measuring range:
0 ... 3 m/s (0 ... 4 m/s)/0 ... 9.84 fps (0 ... 13.1 fps)

inside pipe diameter	measuring range	display range
D in mm	in m^3/h	in m^3/h
50	21	28
80	55	70
100	85	110
150	190	250
200	340	450
250	530	700
350	1040	1380
500	2120	2830

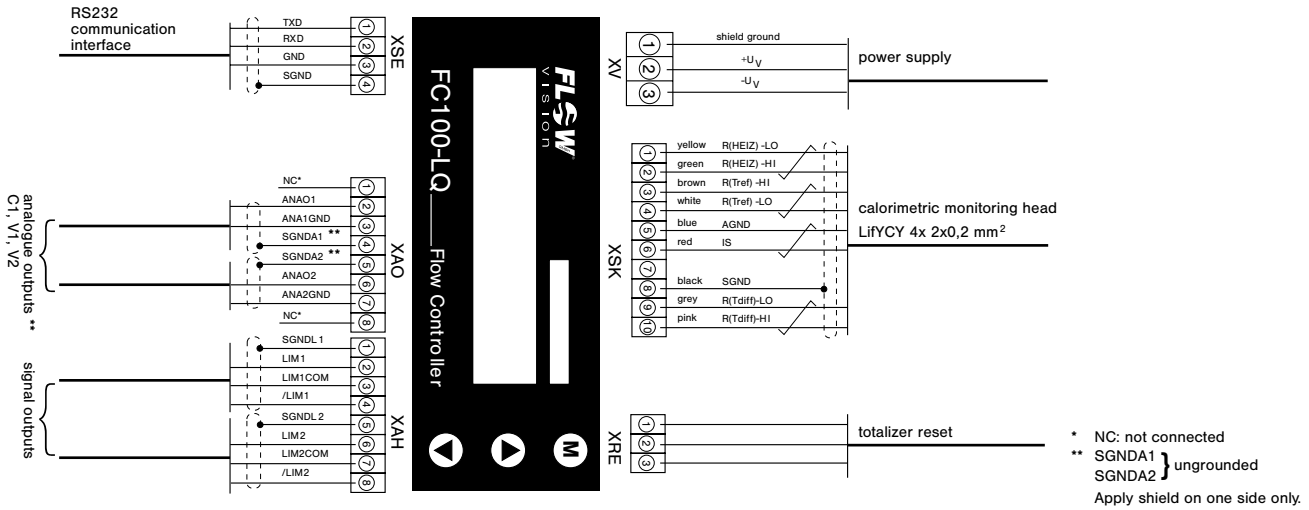
Failure diagram for water



adjustment point at 2 m/s / 6.56 fps:
±1% of measuring range final value.
Other accuracy values or adjustment points upon request (see type FC01-CC).

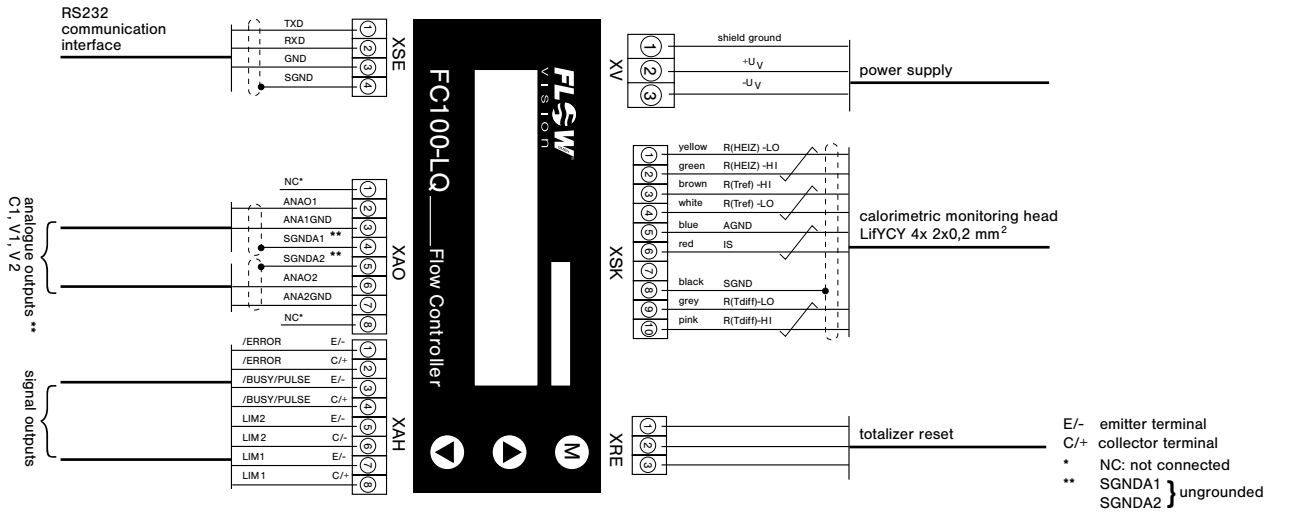
Connection diagrams

FC100-LQ with relay outputs



* NC: not connected
** SGNDA1, SGNDA2 } ungrounded
Apply shield on one side only.

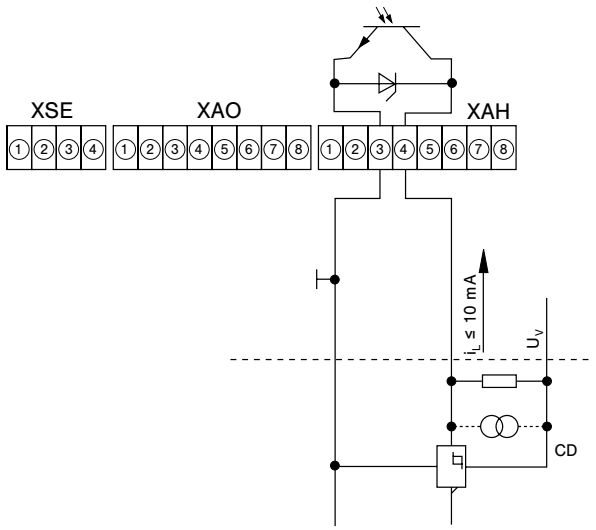
FC100-LQ with transistor outputs



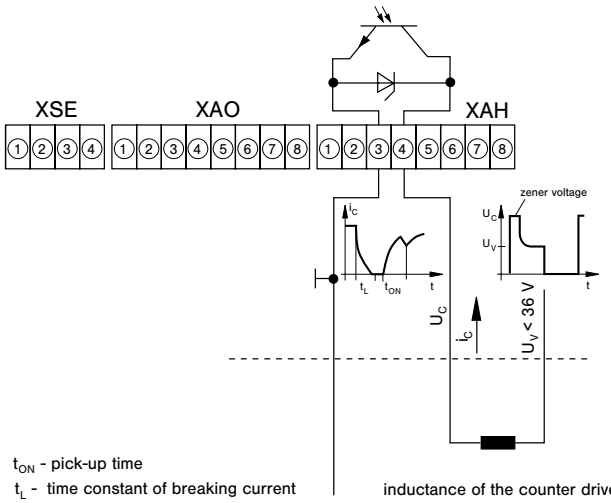
E/- emitter terminal
C/+ collector terminal
* NC: not connected
** SGNDA1, SGNDA2 } ungrounded
Apply shield on one side only.

FC100-LQ - Recommended connection of pulse output

Electronic signal processing

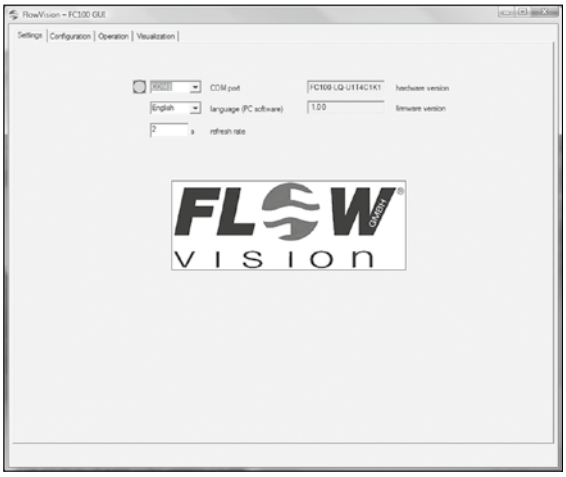


Electromagnetic pulse counter

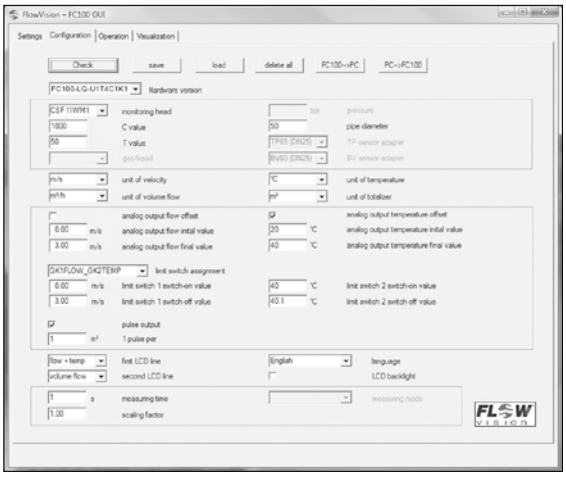


t_{ON} - pick-up time
t_L - time constant of breaking current
inductance of the counter drive

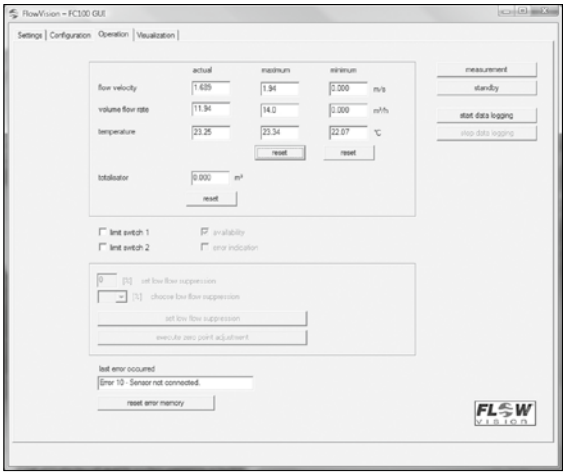
PC-Software



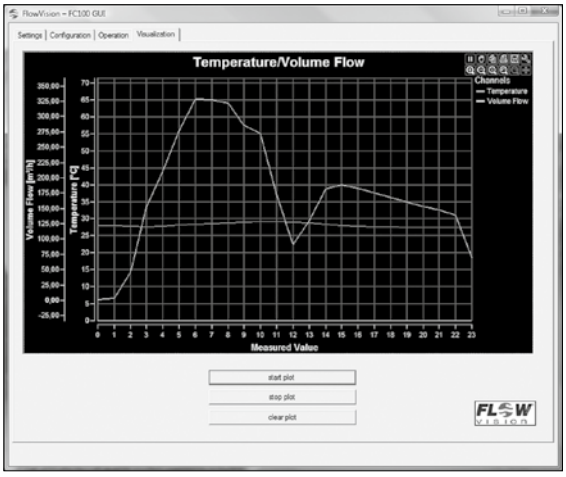
General Settings:
- Selection of the language of the PC software
- Definition how often measuring values are read from the FC100-LQ
- Indication of hardware and firmware version



Configuration of the FC100-LQ:
- Basic settings (e.g. type of measuring head, pipe size)
- Selection of the units of all measured values
- Configuration of the analogue and signal outputs and the pulse output
- Settings of the display and further configuration possibilities



Operation of the FC100-LQ:
- Indication of the actual measured values and saved minimum and maximum values
- Indication of the actual condition of the signal outputs
- Logging of all measured values - export to Microsoft® Excel®



Visualization of the measured values:
- Plot of the measured values (volume flow and temperature)
- Flexible indication of the measured values (e.g. scale, zoom, scroll)

Description

Sensor adapters TP and ball valves BV facilitate correct positioning and exchange of CSP monitoring heads, FC03, FC04 or FS10 in pipes with process connection DN 15 ... DN 50.
Ball valve BV enables pressure-free installation and removal of CSP monitoring heads and Flow Meters FC03, FC04 and Flow Monitor FS10 simply by closing the input and output pipe. The measuring points are suited to temporary measurements; after completion of the measuring cycle they can be closed by means of blanking plugs.

Sensor adapter TP-... / Ball valve BV-...

TP-... BV-...

Features

- Correct positioning of sensor
- Ease of sensor replacement
- Measuring point can be closed if not used
- Sensor adapter available as screw-in or welding type
- Ball valve also serves as a shutoff valve (both input and output)

Ordering information

Type					
BV	ball valve with internal thread				
	Process connection/Nominal size				
	03	DN 25	G1	internal thread	length: 88 mm/3.46 in.
	04	DN 32	G1 1/4	internal thread	length: 100 mm/3.94 in.
	05	DN 40	G1 1/2	internal thread	length: 110 mm/4.33 in.
	06	DN 50	G2	internal thread	length: 131 mm/5.16 in.
		Material of the area exposed to medium			
		M3	nickel plated brass, Delrin seal		
BV -	**03**		**M3**	ordering example	

Ordering information

Type				
TP	Sensor adapter with internal thread			
	Process connection/Nominal size			
	01	DN 15 G1/2	internal thread	length: 50 mm/1.97 in.
	02	DN 20 G3/4	internal thread	length: 64 mm/2.52 in.
	03	DN 25 G1	internal thread	length: 78 mm/3.07 in.
	04	DN 32 G1 1/4	internal thread	length: 94 mm/3.70 in.
	05	DN 40 G1 1/2	internal thread	length: 110 mm/4.33 in.
	06	DN 50 G2	internal thread	length: 138 mm/5.43 in.
		Material of the area exposed to medium		
		M1 stainless steel 1.4571/AISI 316Ti		PN 315 bar/4570 psi
		M3 brass (not TP-03..)		PN 25 bar/363 psi
		M5 red brass (only TP-03..)		PN 16 bar/232 psi
TP -	**01**	**M3** ordering example		

Ordering information

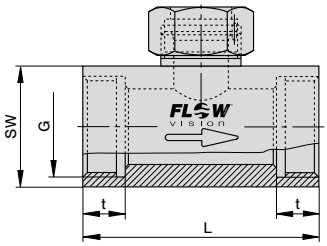
Type					
TP	Sensor adapter with welding nipples				
	Process connection/Nominal size				
	01	DN 15	dia.d: 16 mm/.630 in.		length: 80 mm/3.15 in.
	02	DN 20	dia.d: 20 mm/.787 in.		length: 70 mm/2.76 in.
	03	DN 25	dia.d: 25 mm/.984 in.		length: 80 mm/3.15 in.
	04	DN 32	dia.d: 32 mm/1.26 in.		length: 100 mm/3.94 in.
	05	DN 40	dia.d: 40 mm/1.57 in.		length: 110 mm/4.33 in.
	06	DN 50	dia.d: 50 mm/1.97 in.		length: 140 mm/5.51 in.
		Material of the area exposed to medium			
		M1	stainless steel 1.4571/AISI 316Ti		
			Process connection		
			SA welded connection		
TP -	**01**	**M1 -**	**SA** ordering example		

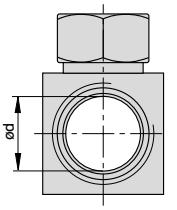
Accessories

Description	Ref. No.
Blanking plug, brass, with O ring	0Z121Z000186
Union nut, brass	Y 306 901 01
Blanking plug, stainless steel 1.4571/AISI 316 Ti, with viton O ring	0Z121Z000187
Union nut, stainless steel	Y 306 901 03

Dimensions

TP-... Sensor adapter with internal thread



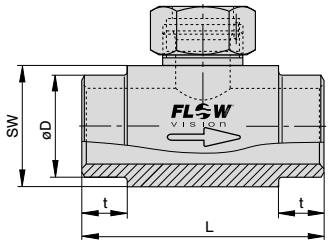


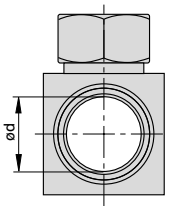
SW = width across flats

Material stainless steel (-M1): PN 315 bar / 4570 psi
Material brass (-M3): PN 25 bar / 363 psi
Material red brass (-M5): PN 16 bar / 232 psi

Type	DN		dia. d		G	t		L		SW	
	mm	in.	mm	in.	in.	mm	in.	mm	in.	mm	in.
TP-01 ...	15	.591	16	.630	1/2"	11	.433	50	1.97	27	1.06
TP-02 ...	20	.787	20	.787	3/4"	12	.472	64	2.52	32	1.26
TP-03 ...	25	.984	25	.984	1"	14	.551	78	3.07	40	1.57
TP-04 ...	32	1.26	32	1.26	1 1/4"	15	.591	94	3.70	50	1.97
TP-05 ...	40	1.57	40	1.57	1 1/2"	15	.591	110	4.33	55	2.16
TP-06 ...	50	1.97	50	1.97	2"	19	.748	138	5.43	70	2.76

TP-..M1-SA Sensor adapter with welding nipples

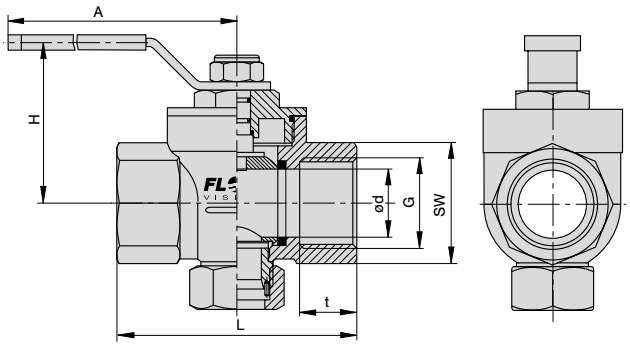




PN 315 bar / 4570 psi

Type	DN		dia. d		dia. D		t		L		SW	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
TP-01M1-S A	15	.591	16	.630	21.3	.839	15	.591	80	3.15	27	1.06
TP-02M1-S A	20	.787	20	.787	26.9	1.06	15	.591	70	2.76	32	1.26
TP-03M1-S A	25	.984	25	.984	33.7	1.33	15	.591	80	3.15	40	1.57
TP-04M1-S A	32	1.26	32	1.26	42.4	1.67	15	.591	100	3.94	50	1.97
TP-05M1-S A	40	1.57	40	1.57	48.3	1.90	15	.591	110	4.33	55	2.16
TP-06M1-S A	50	1.97	50	1.97	60.3	2.37	15	.591	140	5.51	70	2.76

BV-...M3 Ball valve with internal thread



PN 25 bar / 363 psi

Type	DN		dia. d		G	t		L		SW		H		A	
	mm	in.	mm	in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
BV-03M 3	25	.984	25	.984	1"	21	.827	88	3.46	41	1.61	59	2.32	115	4.53
BV-04M 3	32	1.26	32	1.26	1 1/4"	24	.945	100	3.94	50	1.97	65	2.56	115	4.53
BV-05M 3	40	1.57	40	1.57	1 1/2"	24	.945	110	4.33	54	2.13	77	3.03	150	5.91
BV-06M 3	50	1.97	50	1.97	2"	28	1.10	131	5.16	70	2.76	85	3.35	150	5.91

This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Description

Calorimetric plug-in type monitoring head for sensor adapter TP/BV and flow meter FC100-LQ, suitable for use with liquids and pipe sizes up to DN 50.
Calibrated in water.

Features

- Ease of installation
- Small physical size
- Medium temperature range -40 ... +130 °C/-40 ... +266 °F
- Material: stainless steel 1.4571/AISI 316 Ti
- Sealing: Viton o-ring

Monitoring head CSP

CSP-11

Ordering information

Type No.								
CSP	plug-in type monitoring head with calorimetric sensors							
	Process connection							
	11	plug-in type						
		Medium						
		W	water (standard)					
			Material of areas exposed to medium					
			M1	stainless steel 1.4571/AISI 316 Ti (standard)				
				Length of shank/thread				
				L05	18.2 mm/.717 in. (standard)			
					Electrical connection			
					E10	round connector with tinned contacts (plug and cable to order separately)		
						Certification		
						T0	without certificate (standard) *)	
							Specification of medium	
							xxx	
CSP	**11**	**W**	**M1**	**L05**	**E10**	**T0**	**...**	ordering example

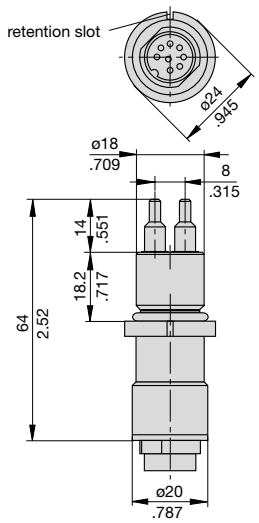
*) for detailed information please see section 0.

Technical data

Type of head	plug-in type
Shank diameter	18 mm/.709 in.
Length of shank	18.2 mm/.717 in.
Length of sensor	14 mm/.551 in.
Suitable for	water (other liquids upon request)
Temperature range *) (of medium)	-40 ... +130 °C/-40 ... +266 °F
Temperature drift of monitoring head	± < 0.05 % of measuring range/°C ± < 0.09 % of measuring range/°F (T = +20 ... +80 °C/+68 ... +176 °F)
Measuring ranges	in TP-01 0.02 - 2.2 (2.9) m³/h in TP-02 0.04 - 3.4 (4.5) m³/h in TP-03 0.05 - 5.3 (7.1) m³/h in TP-04 0.1- 8.7 (11.6) m³/h in TP-05 0.14 - 13.6 (18.1) m³/h in TP-06 0.2 - 21.2 (28.3) m³/h
Pressure resistance (1)	100 bar/1450 psi
Degree of protection (2)	IP67
Material housing: o-ring:	 stainless steel 1.4571/AISI 316 Ti laser welded Viton
Cable to electronic control unit	LifYCY 4x2x0.2 mm² (AWG 24)

(1) Admissible operating pressure DIN 2401, measured at max. temperature (= max. medium temperature)
(2) with mating connector
*) max. +85 °C/+185 °F in the connector area

Dimensions



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Cable types 15/18 with connectors

Do + Ka type 15
Do + Ka type 18

Technical data

Cable type 15
Features: highly flexible, paired, fully shielded, electrical and thermal properties at +20 °C/+68 °F

Conductor resistance:	92 Ω/km
Insulation resistance:	20 MΩ x km
Operating voltage:	250 V
Withstand voltage:	500 V
Max. load:	2 A
Temperature range:	-10 °C ... +80 °C/+14 °F ... +176 °F (processing and operation) -30 °C ... +80 °C/-22 ° F ... +176 °F (transport and storage)

Cable type 18
Features: non-halogenous, highly flexible, cold- and heat resistant, paired, fully shielded, electrical and thermal properties at +20 °C/+68 °F

Conductor resistance:	80 Ω/km
Insulation resistance:	1200 MΩ x km
Operating voltage:	300 V
Withstand voltage:	1500 V
Max. load:	3 A
Temperature range:	-50 °C ... +180 °C/-58 °F ... +356 °F

Ordering information

Type between calorimetric monitoring heads **CSP** and **FC100-LQ, FC100-FH-LQ**	
Do + Ka type 15	**PVC** insulated cable, type LifYCY 4x2x0,2 mm² (AWG 24) 8-pole round connector + 10-pole clamping connector
Do + Ka type 18	**silicone** insulated cable, type 4x2x0,2mm² (AWG 24) 8-pole round connector + 10-pole clamping connector
	Available cable lengths
	...m 2 m, 3 m, 5 m, 8 m, 10 m, 15 m, 20 m, 25 m, 30 m, 40 m, 50 m, 60 m, 70 m, 80 m, 90 m, 100 m, 110 m, 120 m, 130 m, 140 m, 150 m, 160 m, 170 m, 180 m, 190 m, 200 m (up to max 656 ft)
Do + Ka type 15 -	**2 m/6.56 ft** ordering example

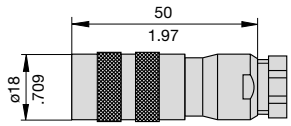
Description

Cable between Flow Meter FC100-xxx and calorimetric monitoring head type CSP.

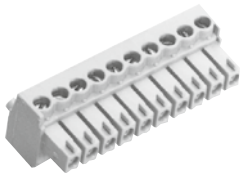
- Connection to monitoring head by means of 8-pole round connector
- Connection to FC100-xxx by means of 10-pole clamping connector (XSK)

Accessories

8-pole round connector
(without cable, for individual wiring by customer)
0Z112Z003124



10-pole clamping connector for cable types 15 and 18
(without cable, for individual wiring by customer)
0Z112Z000167



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Standard warranty cover will be invalidated if the correct FlowVision monitoring head/control unit connecting cable is not used.

Description

Extended calorimetric monitoring head with variable immersion depth for Flow Meter FC100-LQ, suitable for use in pipelines with process connections DN 50 plus.

Caution: Fix with locking set 01 (see accessories).

Features

- Medium temperature range: -40 °C ... +130 °C/-40 °F ... +266 °F
- Material: stainless steel 1.4571/AISI 316 Ti

Monitoring head CSF

CSF-11
variable immersion depth

Ordering information

Type									
CSF	Extended monitoring head with calorimetric sensors								
	Monitoring head design								
	11	Monitoring head with variable immersion depth							
		Medium							
		W	water						
			Material of areas exposed to medium						
			M1	stainless steel 1.4571/AISI 316 Ti					
				Process connection					
				00	without flange; see accessories for connections				
					Length of shank/thread				
					L43	188 mm/7.40 in. (standard) other lengths upon request			
						Electrical connection			
						E10	round connector with tinned contacts (plug and cable to order separately)		
							Certification		
							T0	without certificate (standard) *)	
								Specification of medium	
								xxx	
CSF	**-**	**11**	**W**	**M1**	**00**	**L43**	**E10**	**T0**	**-** **...** ordering example

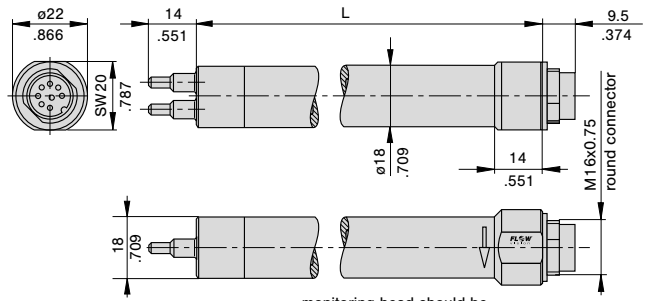
*) for detailed information please see section 0

Technical data

Type of head	push-in
Shank diameter	18 mm/.709 in.
Length of shank	188 mm/7.40 in.
Length of sensor	14 mm/.551 in.
Suitable for	water
Temperature range*) (of water)	-40 °C ... +130 °C/-40 °F ... +266 °F
Temperature drift of sensor	± < 0.05 % of measuring range/°C ± < 0.09 % of measuring range/°F (T = +20 °C ... +80 °C/+68 °F ... +176 °F)
Measuring range	0 ... 3 m/s / 0 ... 9.84 fps
Pressure resistance (1) (sensor)	100 bar/1450 psi
Pressure resistance (installation)	depending on connection (see accessories)
Degree of protection (2)	IP67
Material	stainless steel 1.4571/AISI 316 Ti
Cable to electronic unit	LifYCY 4x2x0.2 mm^2/4x2x0.31·10^{-3} $in.^2$ (AWG 24)

(1) Admissible operating pressure DIN 2401, measured at max. temperature (= max. medium temperature)
(2) with mating connector
*) max. +85 °C/+185 °F in the connector area

Dimensions



Type	L	
	mm	inch
CSF-...L43...	188	7.40
CSF-...L30...	300	11.81
CSF-...L40...	400	15.75

monitoring head should be aligned in direction of flow (see arrow)

Only CSF-...L30... and CSF-...L40...: Additional wetted o-ring (FKM)

This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Cable types 15/18 with connectors

Do + Ka type 15
Do + Ka type 18

Description

Cable between Flow Meter FC100-LQ-xxx and calorimetric monitoring head type CSF.

- Connection to monitoring head by means of 8-pole round connector
- Connection to FC100-LQ-xxx by means of 10-pole clamping connector (XSK)

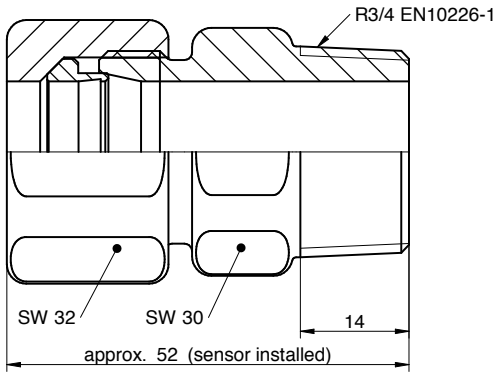
Technical data

Cable type 15	
Features:	highly flexible, paired, fully shielded, electrical and thermal properties at +20 °C/+68 °F
Conductor resistance:	92 Ω/km
Insulation resistance:	20 MΩ x km
Operating voltage:	250 V
Withstand voltage:	500 V
Max. load:	2 A
Temperature range:	-10 °C ... +80 °C/+14 ° F ... +176 °F (processing and operation) -30 °C ... +80 °C/-22 ° F ... +176 °F (transport and storage)
Cable type 18	
Features:	non-halogenous, highly flexible, cold- and heat resistant, paired, fully shielded, electrical and thermal properties at +20 °C/+68 °F
Conductor resistance:	80 Ω/km
Insulation resistance:	1200 MΩ x km
Operating voltage:	300 V
Withstand voltage:	1500 V
Max. load:	3 A
Temperature range:	-50 °C ... +180 °C/-58 °F ... +356 °F

Ordering information

Type between calorimetric monitoring heads **CSF** and **FC100-LQ, FC100-FH-LQ**		
Do + Ka type 15	**PVC** insulated cable, type LifYCY 4x2x0.2 mm² (AWG 24) 8-pole round connector + 10-pole clamping connector	
Do + Ka type 18	**silicone** insulated cable, type 4x2x0.2 mm² (AWG 24) 8-pole round connector + 10-pole clamping connector	
	Available cable lengths	
	...m	2 m, 3 m, 5 m, 8 m, 10 m, 15 m, 20 m, 25 m, 30 m, 40 m, 50 m, 60 m, 70 m, 80 m, 90 m, 100 m, 110 m, 120 m, 130 m, 140 m, 150 m, 160 m, 170 m, 180 m, 190 m, 200 m/656 ft (up to max 656 ft)
Do + Ka type 15 -	**2 m**	ordering example

Compression fitting

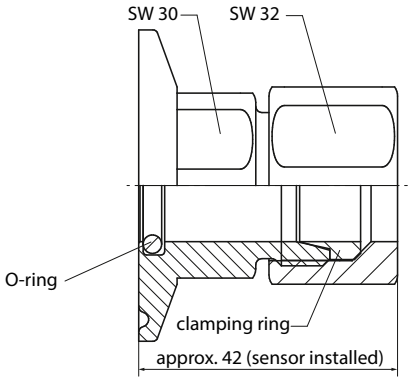


Description and ordering information

Compression fitting for push-in sensors with R3/4 thread

Compression fitting for push-in sensors			
EEF	Compression fitting		
	Process connection		
	04	Thread R3/4	
		Material double nipple and cap nut	
		M1	Stainless steel 1.4571
		M2	Hastelloy C4 2.4610
			Material clamping ring
			CR1 Stainless steel 1.4571 PN 25 bar abs.
			CR2 PTFE PN 5 bar abs.
			CR3 Hastelloy C4 2.4610 PN 25 bar abs.
EEF -	**04 -**	**M1 -**	**CR1** ordering example

Hygiene flange

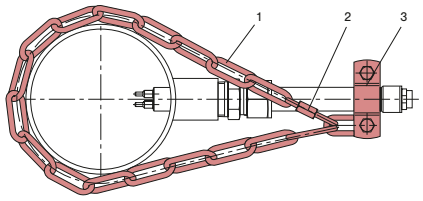


Description and ordering information

Hygiene flange for push-in sensors with front-flush o-ring with FDA approval

Hygiene flange for push-in sensors				
HEF	Hygiene flange			
	Process connection			
	TF1	Triclamp DIN 32676		
		Material flange and cap nut		
		M1	Stainless steel 1.4571	
		M2	Hastelloy C4 2.4610	
			O-ring	
			R1	VMQ (Silicone) blue FDA (standard)
			R2	VMQ (Silicone) white FDA
				Material clamping ring
				CR1 Stainless steel 1.4571 PN 25 bar abs.
				CR2 PTFE PN 5 bar abs.
				CR3 Hastelloy C4 2.4610 PN 25 bar abs.
HEF -	**TF1 -**	**M1 -**	**R1 -**	**CR1** ordering example

Locking set



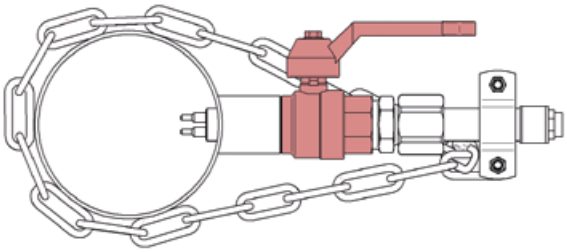
Description and ordering information

Locking set for push-in sensors.

1 Chain 4 x 32 DIN 5685 (approx. 1 m)
2 Catch for chain NG 5
3 Clip with screw and nuts DN15 to DIN 11850

Ordering no.: 0Z122Z000204

Ball valve for installation under pressure



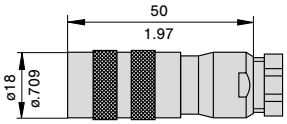
Description and ordering information

Material (body, ball):
Brass nickel plated
Material (ball seal): PTFE
Length: 65 mm
Outside thread: G3/4“, L = 13 mm
Inside thread: G3/4“, L = 15 mm
Fluid temperature: -20...120 °C
Ambient temperature: 0...80 °C
Pressure: PN 25 bar (up to 80 °C)
Ordering number: BV-02M3-PI

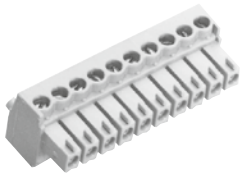
Material (body, ball):
Stainless steel 1.4408, 1.4401
Material (ball seal): PTFE
Length: 78 mm
Outside thread: R3/4“, L = 17 mm
Inside thread: Rp3/4“, L = 13 mm
Fluid temperature: -30...180 °C
Ambient temperature: 0...80 °C
Pressure: PN 64 bar (up to 80 °C)
Ordering number: BV-02M15-PI

Further accessories

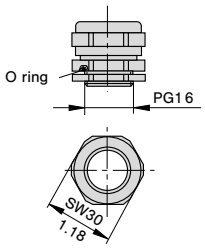
8-pole round connector
(without cable, for individual wiring by customer)
0Z112Z003124



10-pole clamping connector for cable types 15 and 18
(without cable, for individual wiring by customer)
Z00020

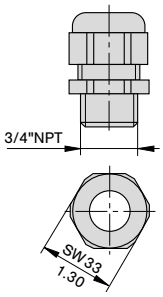


PG16 nickel-plated brass
(standard)
0Z122Z000128



pressure resistant up to 2 bar/29.0 psi

NPT3/4" moulded, black
0Z122Z000131



pressure resistant up to 2 bar/29.0 psi

This is a metric design and millimeter dimensions take precedence (mm / inch)

Caution: Standard warranty cover will be invalidated if the correct FlowVision monitoring head/control unit connecting cable is not used.