

TURBINE FLOW AND TEMPERATURE SENSOR



- ACCURACY $\leq \pm 1.0\%$ LINEAR
- FLOW AND TEMPERATURE ON ONE DISPLAY
- 400 bar · IO-LINK · RS485



IP67

Stainless
Steel

FLOW RANGE AND BODY LENGTH

DN	Process connection G	Flow range (L/min)	Body height H	Body length L standard	Body length L pressure module
6	1/2"	0.7 ... 10	40	80	130
10	1/2"	0.8 ... 20	40	80	130
12	1/2"	1 ... 60	40	80	130
15	1/2"	2 ... 100	45	94	141
20	3/4"	5 ... 130	45	94	141
25	1"	6 ... 160	45	112	157
32	1-1/4"	25 ... 250	55	130	163
40	1-1/2"	30 ... 300	65	150	175
50	2"	60 ... 660	72	182	198

All lengths in mm. The analog output starts at 0 L/min.



MEASUREMENT

Measuring range	DN 6 ... DN 50 · 0.7 ... 660 L/min
Accuracy	$\leq \pm 1.0$ % linear
Switching accuracy	$\leq \pm 0.5$ % of the range
Analog output accuracy	$\leq \pm 0.5$ % of the range
Response time	0.1 ... 5.0 s, settable · factory default 1.0 s
Display	Colour LCD screen, flow and temperature
Calibration standard	Lubricating oil 46# at 25 °C
Measured medium	Oil (factory default) or water, set by order code

MATERIALS AND TEMPERATURE

Display head housing	Engineering plastics
Shell	Stainless steel 304L · alumina by order code
Turbine rotor	Duplex steel
Transmission components	Sliding bearing
Protection class	IP67
Voltage withstand	400 bar, internal thread type
Medium temperature	-20 ... +80 °C · -30 ... +180 °C split high-temperature type
Ambient temperature	-20 ... +75 °C
Storage temperature	-10 ... +60 °C

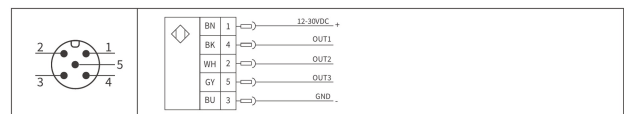
ELECTRICAL PROPERTIES

Supply voltage	16 ... 30 Vdc
Output type	Switch PNP or NPN · IO-Link · RS485
	Analog 4 ... 20 mA · 1 ... 5 V · 0 ... 10 V · pulse · frequency
Switching load	< 200 mA
Wiring protection	Reverse polarity, overload and short circuit
Outlet method	M12x1 connector · 5 poles, 4 poles with RS485

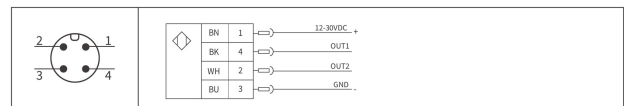
ELECTRICAL CONNECTION

Pin	Wire	Signal
1	BN brown	Power supply + · 16 ... 30 Vdc
4	BK black	OUT1
2	WH white	OUT2
5	GY grey	OUT3 · not present on the RS485 version
3	BU blue	Power supply – · GND

WIRING · 5 POLES



WIRING · 4 POLES, RS485



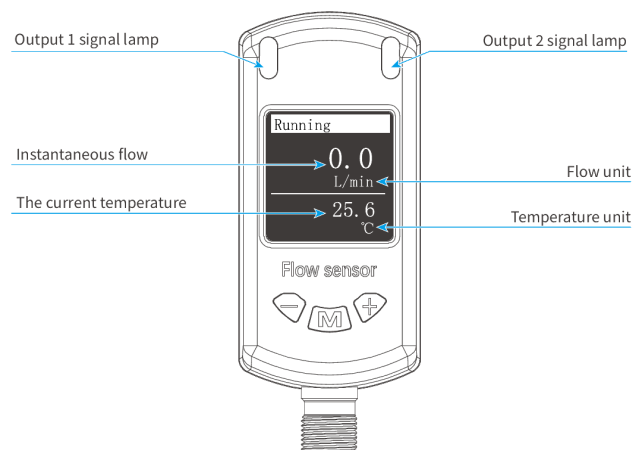
OUTPUT CONFIGURATIONS

Code	OUT1 · pin 4 · BK	OUT2 · pin 2 · WH	OUT3 · pin 5 · GY
SA	Flow switch PNP (factory default) or NPN · temperature switch PNP or NPN · flow linear frequency (full scale 0 ... 100 Hz) · flow original frequency · flow quantitative frequency (full scale 0.5 %L/Hz) · IO-Link	Flow 4 ... 20 mA (factory default) · 20 ... 4 mA · 0 ... 20 mA · 20 ... 0 mA	Temperature 4 ... 20 mA (factory default) · 20 ... 4 mA · 0 ... 20 mA · 20 ... 0 mA
SV1	Flow switch PNP (factory default) or NPN · temperature switch PNP or NPN · flow linear frequency (full scale 0 ... 100 Hz) · flow original frequency · flow quantitative frequency (full scale 0.5 %L/Hz) · IO-Link	Flow 1 ... 5 V (factory default) · 5 ... 1 V · 0 ... 5 V · 5 ... 0 V	Temperature 1 ... 5 V (factory default) · 5 ... 1 V · 0 ... 5 V · 5 ... 0 V
SV2	Flow switch PNP (factory default) or NPN · temperature switch PNP or NPN · flow linear frequency (full scale 0 ... 100 Hz) · flow original frequency · flow quantitative frequency (full scale 0.5 %L/Hz) · IO-Link	Flow 1 ... 10 V (factory default) · 10 ... 1 V · 0 ... 10 V · 10 ... 0 V	Temperature 1 ... 10 V (factory default) · 10 ... 1 V · 0 ... 10 V · 10 ... 0 V
R	RS485 (B)	RS485 (A)	— · four-pole connector, no OUT3

Pin 1 (BN) and pin 3 (BU) carry the supply in every configuration. Codes SA, SV1 and SV2 differ only in the analog signal; the switching, pulse and IO-Link functions of OUT1 are the same for all three.

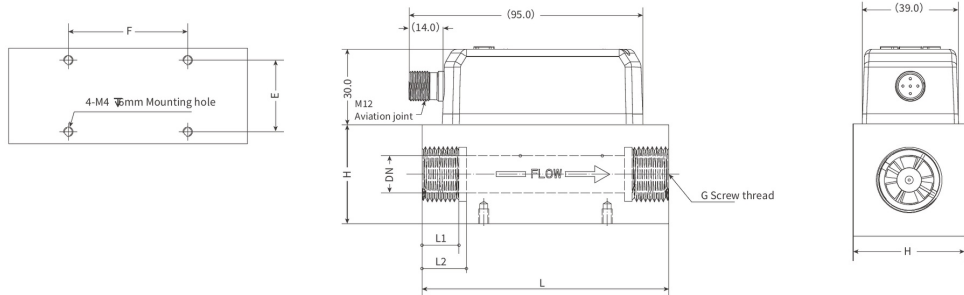
DISPLAY AND KEYS

The colour display carries the instantaneous flow and the current temperature at the same time, each with its unit, and above them the operating state. Two signal lamps show the state of the switching outputs. All parameters — the two alarm limits, the analog assignment, the response time and the zero point of the analog range — are set on the device with the three keys.

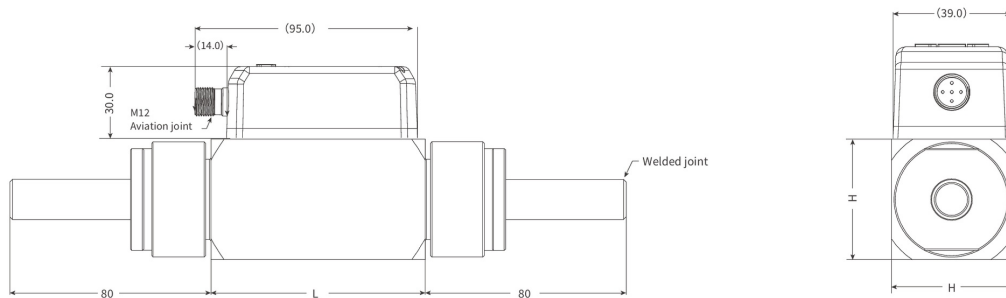


DIMENSIONS (mm)

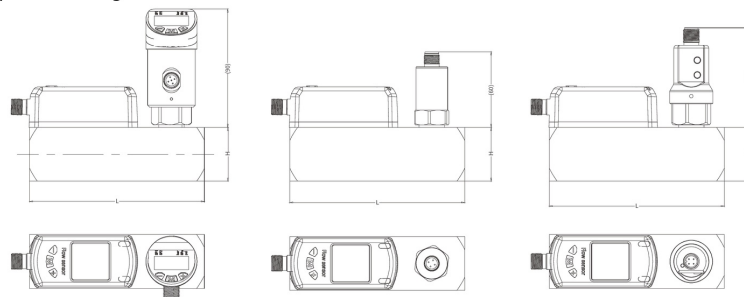
Internal thread type



Welded joint type



Pressure module type · left to right PRKB · PM242 · PSKA



DIMENSIONS PER CALIBER (mm)

DN	Body height H	Effective thread length L1	Thread length L2	Fixed mode E x F
6	40	12	15	30 x 50
10	40	12	15	30 x 50
12	40	12	15	30 x 50
15	45	12	15	35 x 50
20	45	16	19	35 x 50
25	45	18	21	35 x 50
32	55	20	23	45 x 50
40	65	22	25	55 x 50
50	72	24	27	55 x 50

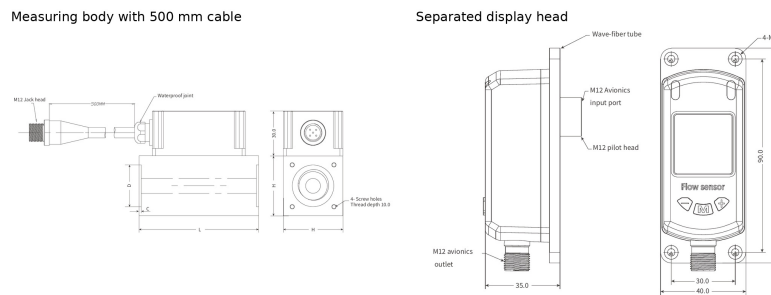
Head 95.0 x 39.0 mm, 30.0 mm from the axis to the M12 connector, mounting 4 x M4, 6 mm



deep. Body lengths L are on page 1.

SPLIT AND PLATE-MOUNTED TYPE

In the split version the display head sits away from the measuring body, connected by a 500 mm cable with an M12 plug at each end — the version for medium temperatures up to 180 °C and for pipes where the head cannot be read in place. The head is 100.0 × 40.0 × 35.0 mm and is screwed to a plate with four M3 screws.



SEALING RINGS (mm)

DN	Sealing ring D × C	DN	Sealing ring D × C
6	Ø 28 × 2 mm wire	25	Ø 38 × 2.4 mm wire
10	Ø 28 × 2 mm wire	32	Ø 50 × 2.4 mm wire
12	Ø 28 × 2 mm wire	40	Ø 55 × 2.4 mm wire
15	Ø 28 × 2 mm wire	50	Ø 68 × 2.4 mm wire
20	Ø 38 × 2.4 mm wire		

MOUNTING PLATES (mm)

DN	Plate H × H	Hole pitch J × K	Locking screw	Thread P	Joint length G	Thread depth U	Order number
6	40 × 40	28 × 28	M3 × 20	3/8"	20	15	KTYLLC29339
10	40 × 40	28 × 28	M3 × 20	1/2"	20	15	KTYLLC29340
12	40 × 40	28 × 28	M3 × 20	1/2"	20	15	KTYLLC29340
15	40 × 40	28 × 28	M3 × 20	1/2"	20	15	KTYLLC29340
20	45 × 45	32 × 32	M3 × 20	3/4"	20	17	KTBCP15948
25	45 × 45	32 × 32	M3 × 20	1"	20	17	KTBCP15354
32	55 × 55	45 × 45	M5 × 25	1-1/4"	20	20	KTYLLC29341
40	65 × 65	50 × 50	M5 × 25	1-1/2"	25	20	KTYLLC29342
50	75 × 75	55 × 55	M5 × 25	2"	25	20	KTYLLC29343

Mounting plates for the plate-mounted version, order code BS.



COMPLIANCE AND CERTIFICATION

Protection class	IP67
Wetted materials	Stainless steel 304L or alumina · turbine rotor duplex steel · sliding bearing
Voltage withstand	400 bar for the internal thread type
Calibration	Adjusted with lubricating oil 46# at 25 °C

ORDER CODE AND ACCESSORIES

M12 cable socket

- The sensor is connected with an M12x1 cable socket. The versions SA, SV1 and SV2 use five poles, the RS485 version R uses four. Moulded sockets are available in PUR or PVC with 2 m, 5 m or 10 m of cable; sockets to be wired on site are available with four or five poles and a Pg7 (Pg9) cable gland.

Thread
M12x1Poles
5 or 4

ORDER CODE

Field	Code	Meaning
1 Series	QTKD	QTKD electronic turbine flow and temperature sensor
2 Caliber	006 · 010 · 012 · 015 · 020 · 025 · 032 · 040 · 050	Measuring caliber DN6 ... DN50
3 Process	GK	Internal thread connection, G thread
	GM	External thread connection, G thread
	RM	External thread connection, R thread
	LM	Customised hydraulic joint
	BS	Plate mounting — see the mounting plates on the dimensions page
	HS	Welded joint type
4 Output	SA	Switch / pulse / IO-Link + analog 0/4 ... 20 mA
	SV1	Switch / pulse / IO-Link + analog 0/1 ... 5 V
	SV2	Switch / pulse / IO-Link + analog 0/1 ... 10 V
	R	RS485 output
5 Body	—	Stainless steel 304L
	L	Alumina



ORDER CODE · CONTINUED

Field	Code	Meaning
6 Form	—	Normal form
	H	Split high-temperature type · -30 ... +180 °C · stainless steel only
7 Medium	—	Oil (factory default)
	S	Water
8 Pressure	—	No pressure detection hole
	P	With pressure detection hole, G1/4 — for the pressure modules PRKB, PM242 and PSKA

Example: QTKD-015 GK SA - - - -. Fields 5 to 8 are written as a dash when the default applies.

ACCESSORIES

Item	Order code	Data
Cable socket, 5 poles, PUR	ZL05-PU02G · ZL05-PU05G · ZL05-PU010G	M12x1 · 2 m, 5 m, 10 m cable · length 50 mm, Ø 15 mm
Cable socket, 5 poles, PVC	ZL05-PC02G · ZL05-PC05G · ZL05-PC010G	M12x1 · ZL05-PC02G is the factory default
Cable socket, 4 poles, PUR	ZL04-PU02G · ZL04-PU05G · ZL04-PU010G	M12x1 · for the RS485 version · 2 m, 5 m, 10 m cable
Cable socket, 4 poles, PVC	ZL04-PC02G · ZL04-PC05G · ZL04-PC010G	M12x1 · ZL04-PC02G is the factory default for the RS485 version
Self-wiring socket	GL04 · GL05	M12x1 · GL04 four poles, GL05 five poles · cable gland Pg7 (Pg9)
Mounting plate	KTYLLC... · KTBCP...	For the plate-mounted version, order code BS — table on the dimensions page
Pressure module	PRKB · PM242 · PSKA	Screwed into the pressure detection hole, order code P. Body length increases — see the table on page 1

The pressure modules are separate products and are not described further here.

