

TURBO-LUX® 2 DIGITAL

Fire pump flowmeter for use in test lines of fire protection systems



This modern measuring device is suitable for all nominal diameters and measuring ranges of the Turbo-Lux® 2. With a wide range of 420 ... 18 000 l/min for nominal diameters DN 80 ... DN 250 the Turbo-Lux® 2 Digital offers you maximum flexibility and accuracy.

Existing Turbo-Lux® 2 bypass flowmeters can be converted to the digital version in just a few simple steps. The switch is straightforward via a screw connection without the need for tools.

The 4 ... 20 mA output also allows direct connection to external control systems, such as pump control cabinets.

ADVANTAGES

- » One device for all nominal sizes and measuring ranges of Turbo-Lux® 2
- » Easy switch between analog and digital
- » Digital display for effortless reading of measurements
- » Readable from up to 5 meters (16.4 feet) distance
- » Maintenance-free

The display continuously shows the current flow rate, the measurement range and the nominal diameter, and remains clearly legible even from a distance of up to five metres.

Thanks to its completely maintenance-free design, the Turbo-Lux® 2 Digital offers maximum operational reliability and consistently dependable performance – for flow measurement you can rely on at all times.



TECHNICAL DATA

System

Measuring principle	Orifice plate flowmeter with differential pressure as transducer
Measurement range	± 2.5 % of full scale value
Certificates	VdS G 4060003

Input

Nominal diameter	DN 80 PN 16
	DN 100 PN 16
	DN 150 PN 16
	DN 200 PN 10/16
	DN 250 PN 10/16
Pressure limits	Max. 16 bar (232 psi)
Hydrostatically strength / Pressure strength	64 bar (928 psi) for 10 min.

Operating conditions

Temperature range	4 °C ... 50 °C (39 °F ... 122 °F)
Medium	Water
Analogue output	4 ... 20 mA (version 24 V DC - connection cable 4-pole)
Power supply	12 ... 24 V DC
Power consumption	Max. 1.0 W
Ambient temperature	1 °C ... 60 °C (34 °F ... 140 °F)
Storage temperature	-20 °C ... 60 °C (-4 °F ... 140 °F)
Protection class	IP54
Damping	3 s

Constructive Design

Differential pressure tube	Messing
Gasket	NBR
Measuring transducer	Aluminium
Display	2.4 in illuminated graphical LCD
Connection	M12 x 1 (4-polig)
Weight (inkl. mains adapter)	Approx. 1.3 kg (2.8 lbs)

INSTALLATION INSTRUCTIONS

Before and after the orifice plate a straight calming section is provided as a function of the nominal diameter (D).

An inlet path of at least $10 \times D$ is required before the measuring orifice. The outlet zone after the measuring orifice must be at least $5 \times D$.

The connected pipelines must be the same size as the orifice plate. Important for maintaining the measurement tolerance is the concentric installation between the flanges of the pipeline. The center offset must not exceed 0.5 mm. As an aid for each size, a centering kit is available for the alignment between flanges.

The pipelines must be completely filled at all times. Examples of special installation situations are illustrated in figures 2 to 5.

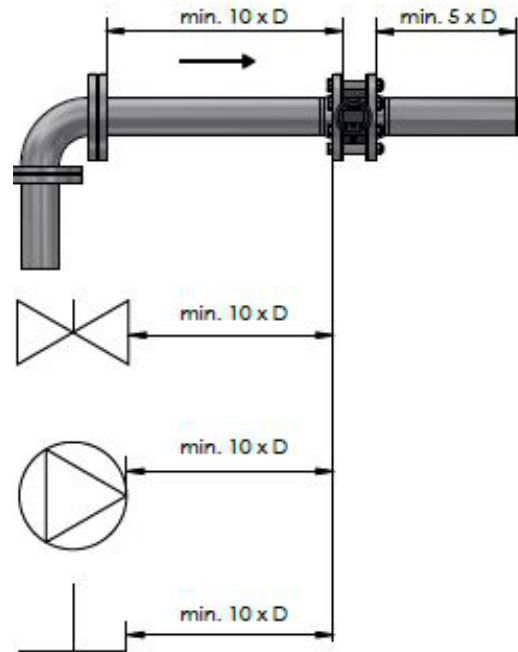


Fig. 1: Inlet path and outflow zone

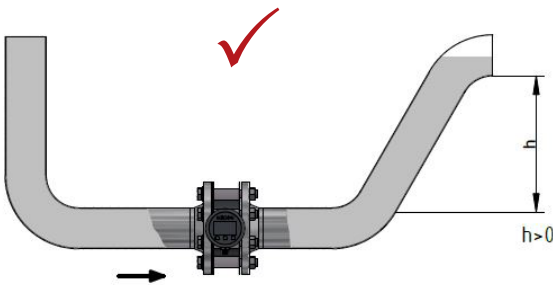


Fig. 2: Turbo-Lux® 2 Digital correct horizontal installation

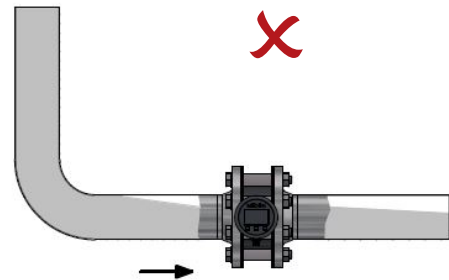


Fig. 3: Turbo-Lux® 2 Digital wrong horizontal installation

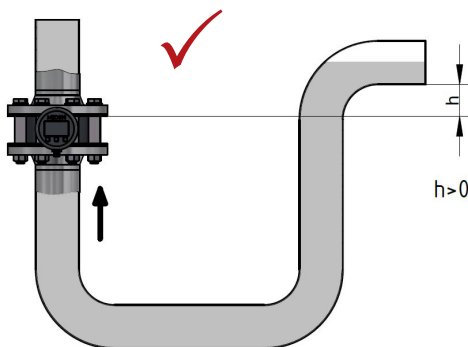


Fig. 4: Turbo-Lux® 2 Digital correct vertical installation

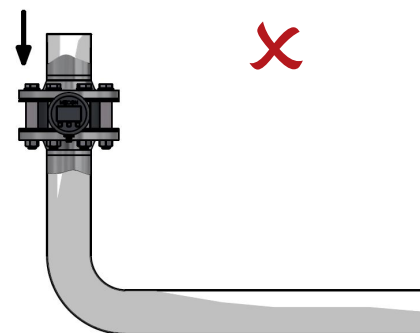


Fig. 5: Turbo-Lux® 2 Digital wrong vertical installation

DIMENSIONS AND WEIGHTS

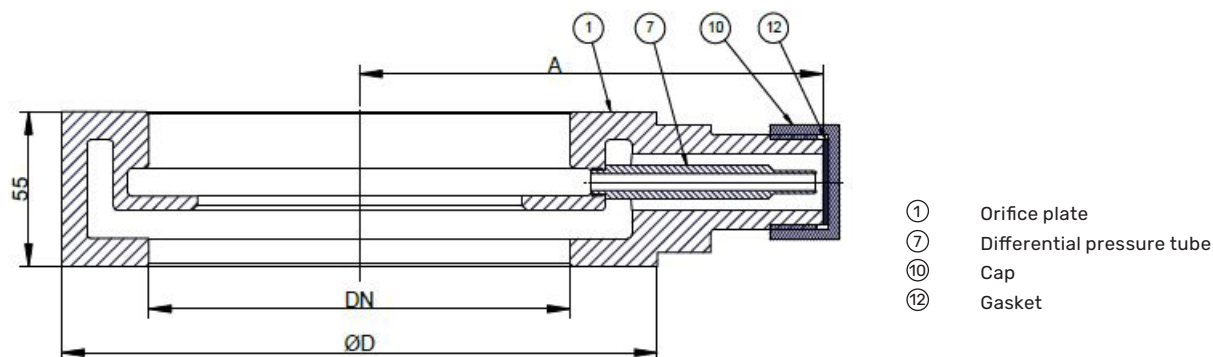


Fig. 6: Turbo-Lux® 2 orifice plate, position drawing and dimensions

Nominal diameter	A (mm / in)	ØD (mm / in)	Weight (kg / lbs)
DN 80 PN 16	130 / 5.1	138 / 5.4	1.3 / 2.9
DN 100 PN 16	140 / 5.5	158 / 6.2	1.6 / 3.5
DN 150 PN 16	165 / 6.5	212 / 8.4	2.1 / 4.6
DN 200 PN 10/16	190 / 7.5	268 / 10.6	3.0 / 6.6
DN 250 PN 10/16	215 / 8.5	320 / 12.6	4.0 / 8.8
Digital bypass flowmeter	-	-	1.2 / 2.7

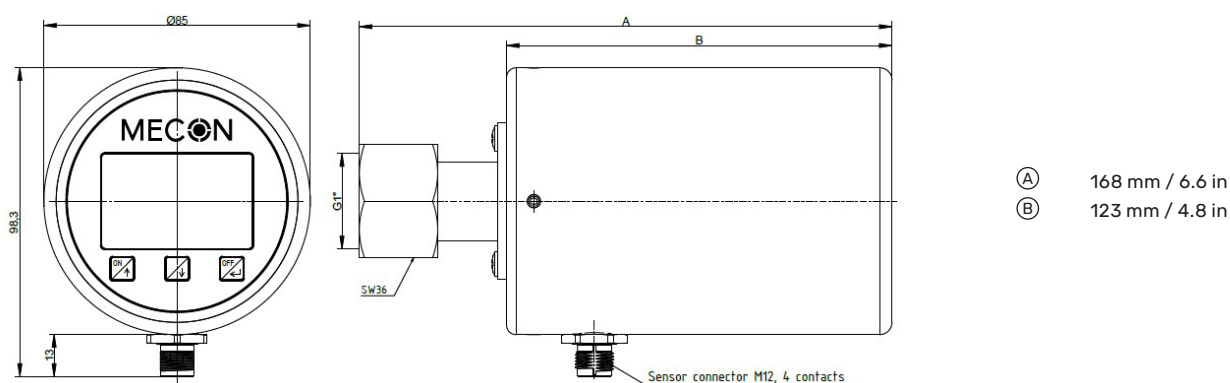


Fig. 7: Turbo-Lux® 2 Digital (Plug M12 x 1 in 12 ... 24 V DC version)

PRODUCT AND ACCESSORIES

Order code	Description
TL3D0	Turbo-Lux® 2 Digital
ZB-TL3D0-001	5 m (16.4 ft) connection cable with PUR sheathing, open end, with plug M 12, 4-pole, 90° socket, IP68
ZB-TL3D0-002	Plug-in power supply unit, Input 100 ... 240 V AC, 50 ... 60 Hz, Output 12 V DC, cable length 1.5 m (4.9 ft) universal plugs for Australia, Europe, UK and US
ZB-TL2D0-003	Set calibration (indicator and orifice)
ZB-TL3D0-004	Round connector M12 socket for cable mounting, 4-pole

ORIFICE PLATES

Order code	Description	Connection / Measurement range
7ME5834-1AA00-0AA0	Orifice plate ²	DN 80 PN 16 Qv: 0,42 - 2,1 m³/min
7ME5834-2AA00-0AA0	Orifice plate ²	DN 100 PN 16 Qv: 0,6 - 3,0 m³/min
7ME5834-3AA00-0AA0	Orifice plate ²	DN 150 PN 16 Qv: 1,2 - 6,0 m³/min
7ME5834-4AA00-0AA0	Orifice plate ²	DN 200 PN 10/16 Qv: 2,4 - 12,0 m³/min
7ME5834-5AA00-0AA0	Orifice plate ²	DN 250 PN 10/16 Qv: 3,6 - 18,0 m³/min
7ME5834-0BA00-0AA0	Centering kit orifice plate ²	DN 80 PN 16
7ME5834-0CA00-0AA0	Centering kit orifice plate ²	DN 100 PN 16
7ME5834-0EA00-0AA0	Centering kit orifice plate ²	DN 150 PN 16
7ME5834-0FA00-0AA0	Centering kit orifice plate ²	DN 200 PN 10
7ME5834-0KA00-0AA0	Centering kit orifice plate ²	DN 200 PN 16
7ME5834-0GA00-0AA0	Centering kit orifice plate ²	DN 250 PN 10/16

² For installation between flanges

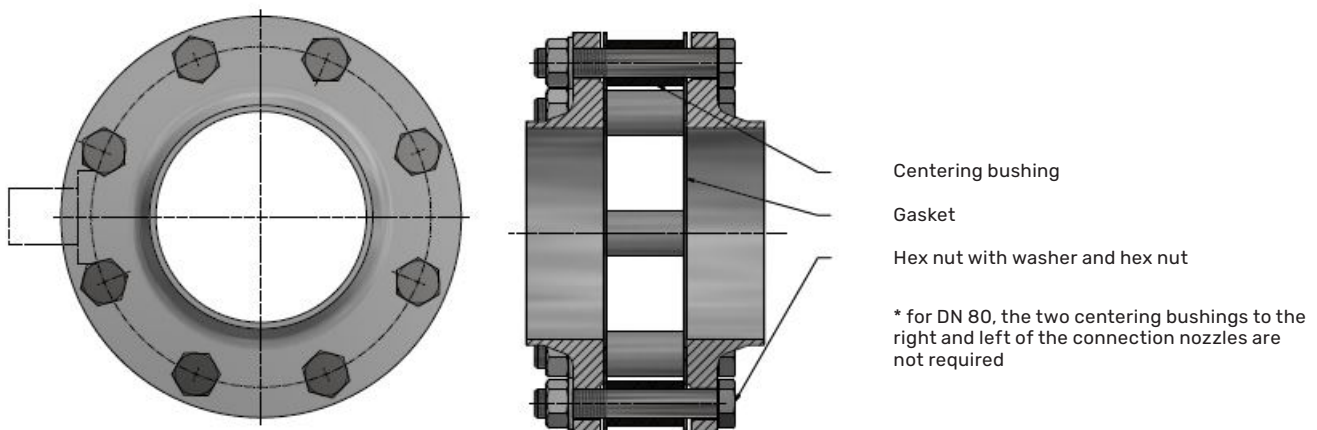


Fig. 8: Centering kit for wafer version