

TTFM 6.1 Transit-Time Ultrasonic Flow Meter

Model

Please configure model on next page

Approximate shipping weight: 12 lbs / 5.5 kg

STANDARD FEATURES:

- Pair of SE16B ultrasonic transducers -
clamp-on for 2" to 10" (50 mm to 250 mm) pipes
- Sensor cables - pair 25 ft / 7.6 m triaxial with BNC connectors
- Flow rate range - ± 0.07 to 40 ft/sec (± 0.02 to 12 m/sec)
- Accuracy - $\pm 1.0\%$ of flow rate from 1.5 to 40 ft/sec (0.46 to 12 m/sec)
 ± 0.015 ft/sec (± 0.0046 m/s) below 1.5 ft/sec (0.46 m/s)
- Installation - TMK-B1 kit; Stainless steel transducer brackets, mounting
clamps, alignment bar and coupling compound
- Enclosure - watertight, NEMA4X (IP66) polyester and polycarbonate
- Display - white, backlit matrix, with 14 digit totalizer
- Calibration - Wet calibrated at factory. Built-in 5-key programmer
- Outputs - isolated 4-20mA (1000 ohm), and 2 control relays - 5 amp, SPDT
programmable for flow proportional pulse output, flow direction, and/or flow
alarm
- Datalogger - 26 million data point capacity
- Power input - 100-240VAC 50/60Hz, 10 VA maximum
- CE, Transducers Non-Incendive for Class 1 Div 2, Groups A,B,C,D



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POWER INPUT

Standard – 100-240VAC 50/60Hz, 10VA Maximum		A
9-32VDC, 10W Maximum		B

ENCLOSURE & ELECTRONICS PROTECTION

Standard NEMA4X (IP66) polycarbonate		1
NEMA4X polycarbonate enclosure with conformally coated electronics		2
CXJ8106 – Explosion proof NEMA7 (CSA Class I, Div 1) [†]		3
CXJ8106 – Explosion Proof NEMA7 (ATEX/IECEX Ex db IIB+H2 Gb) [†]		5

ENCLOSURE TEMPERATURE RATING

Standard (-5° to 140°F / -20° to 60°C)		A
Heater and Thermostat 115VAC, 15 VA additional to Power Input (25 VA total)		B
Heater and Thermostat 230VAC, 15 VA additional to Power Input (25 VA total)		C

INTRINSIC SAFETY

Standard – All transducers, Non-Incendive for Class I, Div 2, Groups A,B,C,D		1
QTY 2 ISB for transducer installation in Class I, Div 1, Groups C,D; Class II, Groups E,F,G; Class III; Encl. Type 4		2
QTY 2 ISB for transducer installation in ATEX/IECEX Zone 0, Ex ia IIB T4 Ga		3

TRANSDUCERS (each with 25ft / 7.6m cable)

Standard – SE16B pair, recommended for 2 to 10 inch (50 to 250 mm) nominal pipes, BNC connectors and IP65 rating		B
SE16A pair, recommended for 0.5 to 2 inch (15 to 50 mm) nominal pipes, BNC connectors and IP65 rating		A1
SE16A pair, recommended for 0.5 to 2 inch (15 to 50 mm) pipes, sealed cable with IP67 rating, for installation in wet environments		A2
SE16C pair, recommended for 12 to 48 inch (300 to 1,200 mm) nominal pipes, BNC connectors and cable strain-relief fittings for IP68 rating (up to 3m for 3 hrs)		C

TRANSDUCER MOUNTING HARDWARE - Hardware Must Match Transducer Selection

TMK-B1 for SE16B transducers – Includes brackets, clamps, alignment bar		1
TMK-B21 for SE16B transducers – Includes conduit-ready & heavy-duty stainless brackets, clamps, and alignment ruler for 2-6" pipes		2
TMK-B22 for SE16B transducers – Includes conduit-ready & heavy-duty stainless brackets, clamps, and alignment ruler for pipes ≥ 8"		3
TMK-A1 for SE16A transducers – Includes track mount with ruler and clamps		4
TMK-C1 for SE16C transducers – Includes brackets, clamps, and alignment bar with ruler. For 12" to 18" (300 mm to 450 mm) pipes.		5
TMK-C2 for SE16C transducers – Includes brackets, clamps, and alignment bar with ruler. For 20" to 48" (500 mm to 1200 mm) pipes.		6

TRANSDUCER CABLE LENGTH

Standard – 25 ft. 7.6m, cable type matches Transducer selection		A
50 ft / 15 m, cable type matches Transducer selection		B
100 ft / 30 m, cable type matches Transducer selection		C

SERIAL COMMUNICATIONS

Standard – None		1
Modbus® RTU via RS-485		2

CONTROL RELAYS

2 – Standard		A
4 Extra Relays (6 total), rated 5 amp SPDT, fully programmable		B

[†] Lead Time for a TTFM 6.1 with this option is 2 weeks. Non-returnable & Non-refundable

OPTIONS AND ACCESSORIES

Code	Description	
TXC	Transducer cable extension up to 500 ft / 150 m (Triaxial pair, price is per foot)	
JB4X	Transducer cable Junction Box, NEMA4X/IP66	
TMK-A1	Transducer Mounting Kit with track mount with built-in ruler, pair of pipe clamps for OD up to 4" (100 mm), and Super Lube® coupling compound	
TMK-B1	Transducer Mounting Kit with pair of stainless mounting brackets, pair of pipe clamps for OD up to 30" (750 mm), alignment bar, and SuperLube® coupling compound	
TMK-B21	Transducer Mounting Kit with pair of stainless heavy-duty & conduit-ready mounting brackets, pair of pipe clamps, alignment ruler for 2-6" pipes, and SuperLube® coupling compound	
TMK-B22	Transducer Mounting Kit with pair of stainless heavy-duty & conduit-ready mounting brackets, pair of pipe clamps, alignment ruler for 8" and larger pipes, and SuperLube® coupling compound	
TMK-C1	Transducer Mounting Kit with pair of stainless mounting brackets, pair of pipe clamps for OD up to 18" (450 mm), alignment bar with built-in ruler, and SuperLube® coupling compound	
TMK-C2	Transducer Mounting Kit with pair of stainless mounting brackets, pair of pipe clamps for OD up to 48" (1200 mm), alignment bar with built-in ruler, and SuperLube® coupling compound	
TMK-B1S	TMK-B1 mounting kit with Expansion Springs – for outdoor HDPE pipe installations	
TMK-B21S	TMK-B21 mounting kit with Expansion Springs – for outdoor HDPE pipe installations	
TMK-B22S	TMK-B22 mounting kit with Expansion Springs – for outdoor HDPE pipe installations	
PC16-MB1	Replacement Stainless Transducer Mounting Bracket (from TMK-B1 kit)	
PC16-MB2-S	Replacement Stainless Transducer Mounting Bracket (from TMK-B2 kit) – Stationary Side (Ruler screws into this bracket)	
PC16-MB2-D	Replacement Stainless Transducer Mounting Bracket (from TMK-B2 kit) – Dynamic Side (Ruler slides along tris bracket)	
PC9	Replacement SS pipe clamp for pipe OD up to 9" (225 mm)	
PC22	Replacement SS pipe clamp for pipe OD up to 22" (550 mm)	
PC48	Replacement SS pipe clamp for pipe OD up to 48" (1,200 mm)	
CT	Coupling Tape – lower maintenance for permanent installations (price is per foot)	
CC-SL30	Super Lube® Coupling Compound, 3.0 oz tube	
CC-SL30HT	Coupling Compound for Fluid Temp. > 120°C (250°F) – Super Lube® Dielectric Grease 3.0 oz tube	
PM	Panel Mount Flange assembly	
SCR	Enclosure Sunscreen (iridite aluminum)	

Replacement Parts - Please provide instrument serial number when ordering replacement SE16 transducers

Code	Description	
SE16A*	Spare/Replacement <u>single</u> Transducer (two transducers are used with each flowmeter)	
SE16A-TTT25*	Spare/Replacement <u>single</u> Transducer with sealed 25 foot cable (two transducers are used with each flowmeter)	
SE16A-TTT50*	Spare/Replacement <u>single</u> Transducer with sealed 50 foot cable (two transducers are used with each flowmeter)	
SE16A-TTT100*	Spare/Replacement <u>single</u> Transducer with sealed 100 foot cable (two transducers are used with each flowmeter)	
SE16B*	Spare/Replacement <u>single</u> Transducer (two transducers are used with each flowmeter)	
SE16C*	Spare/Replacement <u>single</u> Transducer (two transducers are used with each flowmeter)	
TTT25	One pair 25 ft (7.6 m) cables with BNC connectors and seal jackets for SE16A & SE16B transducers	
TTT50	One pair 50 ft (15 m) cables with BNC connectors and seal jackets for SE16A & SE16B transducers	
TTT100	One pair 100 ft (30 m) cables with BNC connectors and seal jackets for SE16A & SE16B transducers	
TTT25-C	One pair 25 ft (7.6 m) cables with threaded strain-relief connection for SE16C transducers	
TTT50-C	One pair 50 ft (15 m) cables with threaded strain-relief connection for SE16C transducers	
TTT100-C	One pair 100 ft (30 m) cables with threaded strain-relief connection for SE16C transducers	