

TTFM 6.1 Ultrasonic Transit Time Flow Meter

Approximate shipping weight: 12 lbs / 5.5 kg

STANDARD FEATURES:

- Pair of SE16B ultrasonic transducers -
 clamp-on for 2" to 48" (50 mm to 1200 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 silicone 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

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Model

TTFM 6.1 - - - - -

POWER INPUT

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

ENCLOSURE & ELECTRONICS PROTECTION

Standard – NEMA4X (IP66) polycarbonate enclosure	1
NEMA4X polycarbonate enclosure with conformally coated electronics	2
CXJ8106 – Explosion Proof NEMA7 (non-returnable & non-refundable) ¹	3

¹Lead Time for a TTFM 6.1 with this option is 2 weeks

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 – SE16A or B Transducers, Non-Incendive for Class 1 Div 2, Groups A,B,C,D	1
QTY 2 ISB Intrinsic Safety Barriers for transducer installation in Class 1 Div 1, Groups C, D; Class 2, Groups E, F, G; Class 3; Type 4	2

TRANSDUCERS

Standard – SE16B pair, clamp-on for 2" to 48" (50 mm to 1200 mm) pipes	B
SE16A pair, clamp-on for 0.5" to 4" (15 mm to 100 mm) pipes, BNC connectors and IP65 rating	A1
SE16A pair, clamp-on for 0.5" to 4" (15 mm to 100 mm) pipes, sealed cable with IP67 rating, for installation in wet environments	A2

TRANSDUCER MOUNTING HARDWARE

Standard – TMK-B1; Includes stainless brackets, mounting clamps, alignment bar, and silicone coupling compound	1
TMK-B21 – Includes conduit-ready & heavy-duty stainless brackets, mounting clamps, alignment ruler for 2-6" pipes, and silicone coupling compound	2
TMK-B22 – Includes conduit-ready & heavy-duty stainless brackets, mounting clamps, alignment ruler for pipes ≥ 8", and silicone coupling compound	3
TMK-A1; Includes stainless track mount with built-in ruler, mounting clamps, and silicone coupling compound. Standard option for SE16A transducer pair.	4

TRANSDUCER CABLES & CONNECTIONS

Standard – 25 ft / 7.6 m pair triaxial with BNC connectors and seal jackets	A
50 ft / 15 m pair triaxial with BNC connectors and seal jackets	B
100 ft / 30 m pair triaxial with BNC connectors and seal jackets	C

SERIAL COMMUNICATIONS

Standard – None	1
Modbus® RTU via RS-485 or HART (field selectable)	2

CONTROL RELAYS

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

OPTIONS AND ACCESSORIES

QTY	CODE	DESCRIPTION
	TXC	Transducer cable extension up to 500 ft / 150 m (Triaxial pair)
	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 0.5 oz. 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 0.5 oz. 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 0.5 oz. 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 0.5 oz. 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)
	CC-SL30	Super Lube® Silicone Compound, 3.0 oz tube
	CC-SL30HT	Coupling Compound for Fluid Temp. > 120°C (250°F) – Super Lube® Dielectric Grease 3.0 oz tube
	UCS-TT-SE16B	Maintenance-free Ultrasonic Coupling Strip for SE16B transit time sensors. Suitable for all operating temperatures. Includes enough strips for two installations.
	UCS-TT-SE16A	Maintenance-free Ultrasonic Coupling Strip for SE16A transit time sensors. Suitable for all operating temperatures. Includes enough strips for two installations.
	PM	Panel Mount Flange assembly
	SCR	Enclosure Sunscreen (iridite aluminum)
	MNL	Additional Manuals (One supplied with each unit)

REPLACEMENT PARTS

	SE16A*	Spare/Replacement single Transducer for 0.5" to 4" (15 mm to 100 mm) ID pipes (two transducers are used with each flowmeter)
	SE16A-TTT25*	Spare/Replacement single Transducer for 0.5" to 4" (15 mm to 100 mm) ID pipes with sealed 25 foot cable (two transducers are used with each flowmeter)
	SE16A-TTT50*	Spare/Replacement single Transducer for 0.5" to 4" (15 mm to 100 mm) ID pipes with sealed 50 foot cable (two transducers are used with each flowmeter)
	SE16A-TTT100*	Spare/Replacement single Transducer for 0.5" to 4" (15 mm to 100 mm) ID pipes with sealed 100 foot cable (two transducers are used with each flowmeter)
	SE16B*	Spare/Replacement single Transducer for 2" to 48" (50 mm to 1200 mm) ID pipes (two transducers are used with each flowmeter)
	TTT25	Replacement pair 25 ft (7.6 m) transducer triaxial cables with BNC connectors and seal jackets
	TTT50	Replacement pair 50 ft (15 m) transducer triaxial cables with BNC connectors and seal jackets
	TTT100	Replacement pair 100 ft (30 m) transducer triaxial cables with BNC connectors and seal jackets

* Provide Instrument Serial number when ordering replacements