

FM700

Transmitter

Datasheet



Benefits

- Volume, velocity and wight measurement in one device
- Compact or remote options available
- Direct sensor configuration
- Battery powered option available
- Low conductivity $>5\mu\text{S}/\text{cm}$
- Inputs for pressure and temperature sensors

DN25 up to DN3000

Temperature Range: -20°C to $+60^{\circ}\text{C}$ (-4°F to 140°F)

Accuracy: 0.4%

Flexible power device

Typical Applications

- Water / wastewater
- Cooling systems
- Water treatment / filtration
- Pump control
- Leveling
- Water consumption
- Leakage detection

Technical Data

Overall Features	
Suitable For	All FM sensors
Minimum conductivity	5 µS/cm
Altitude	-200 m up to 4000 m (-656 feet up to 13123 feet)
Ambient Temperature	-20 to +60°C (-4°F to +140°F) - Aluminium housing
Humidity Range	0÷100%
Standard Features	
Version	<ul style="list-style-type: none"> • Compact • Separate
Housing materials	<ul style="list-style-type: none"> • Painted Aluminium die casting
Protection Rate	IP 67
Power Supply/Consumption	Network/ Primary Lithium Batteries / Alkaline Batteries (50mW ... 4W)
Cable Gland	N° 5 cable gland PG 11
Full scale value	0,4...10m/s
Dig. Input	N°1 , programmable function (i.e. Totalizer reset)
Data Storage	F-Ram
Galvanic Insulation	Digital inputs/outputs are galvanically insulated, output 4-20mA and RS485 port are not insulated.
Programming Plug In	PC connection via USB (A / USB MINI B type cable must be used)
Bi-Directional	Yes
Diagnostic Function	Yes
Empty Pipe Detection	Yes
CE Certification	Yes
Optional Features (For more details, see 'How to Order' on last page)	
Protection Rate	IP 68
Conn. Sensor Cable	CABLE C015-C016
LCD Display	128x64 pixel backlit graphic display (Main power version only), with 3 keys for programming
Outputs: Pulses/Alarm	<ul style="list-style-type: none"> • N°2...4 Digital Output, Max 50 Hz, 100mA, 30 V (AC/DC) • N°1...3 Digital Input
Analog Output	N ° 1 Analog Output 4 ... 20 mA
Communication Gateway	RS 485
Data Logger	<ul style="list-style-type: none"> • MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) • MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + BIV (Built In Verificator) • MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + Meter Data (Real Time Converter & Sensor Data on SD Memory) • MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + BIV + Meter Data
Protocols	ModBus RTU (speed range setting bps: 4800 /9600 / 19200/ 22800/ 38400/ 57600)
Accuracy	
Accuracy (Whole System Transmitter+Sensor)	See table below

How to Order

CODE EXAMPLE	CODE/DESCRIPTION	
Display		
B	A	Blind version (without display and programming keys, USB cable type A / USB Mini B is Required for programming)
	B	Graphic LCD WSTN - B/W - back light display, point matrix 128 x 64, 8 line/16 characters and 3 programming keys (mandatory for MI001)
Housing material		
1	1	Painted aluminum die casting
Version / Protection rate		
A	A	Compact version with sensor FM.... - IP67
	B	Separate version for wall mounting, complete with aluminium mounting accessories (use C015/C016 cable MAX LENGTH 20 m) - IP67
	C	Compact version with display visible from the top - IP67
	D	Compact version - IP68 1,5 meters - ONLY aluminium housing
	E	Compact version with display visible from the top - IP68 1,5 meters - ONLY aluminium housing
	F	Separate version for wall mounting (use C015/C016 cable MAX LENGTH 20 m) - IP68 1,5 meters - ONLY aluminium housing
Main Power supply		
0	0	Without Main Power Supply
	1	Power supply : 100 ... 240 VAC- 45/66 Hz
	2	Power supply : 12...48 VDC
Batteries		
A	A	2 Lithium thionyl chloride batteries (n° 1 on slot 1 - n° 1 on slot 2)
	B	4 Lithium thionyl chloride batteries (n° 2 on slot 1 - n° 2 on slot 2)
	C	6 Lithium thionyl chloride batteries (n° 3 on slot 1 - n° 3 on slot 2)
	D	6 Alkaline or NiMh batteries SIZE D (on slot 3)
	E	Board set for Lithium (slot 1-2) (Batteries NOT Supplied)
	F	Board set for Alkaline (slot 3) (Batteries NOT Supplied)
Analogue Input/Output		
0	0	Without Analog Input/Output
	1	N° 1 Input for n° 1 pressure sensor (pressure sensor to be ordered separately)
	2	N° 2 Inputs for n° 2 pressure sensors (pressure sensors to be ordered separately)
	3	N° 1 Input for n° 1 PT 100/500/1000 THERMAL PROBE (probe to be ordered separately)
	4	N° 2 Inputs for n° 2 PT 100/500/1000 THERMAL PROBE (probes to be ordered separately)
	5	N° 1 Analog Output (4/20 mA) - Active or Passive (by wiring) if the Main Power is SELECTED ; ONLY PASSIVE if powered by BATTERIES
	6	Option 1 + 5
	7	Option 2 + 5
	8	Option 3 + 5
	9	Option 4 + 5
	a	Option 1 + 3
Digital Input/Output		
A	A	Without Digital Input/Output
	B	N° 2 ON/OFF output (max 50 Hz - max 100 mA) + N° 1 ON/OFF input
	C	N° 4 ON/OFF output (max 50 Hz - max 100 mA) + N° 3 ON/OFF input
	D	N° 4 ON/OFF output (max 50 Hz - max 100 mA) + N° 3 ON/OFF input + Potted Cable

Communication Gateway		
0	0	Without Gateway
	1	RS485 NOT insulated - Modbus
	2	Others
Data Logger		
A	A	MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock)
	B	MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + BIV (Built In Verificator)
	C	MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + Meter Data (Real Time Converter & Sensor Data on SD Memory)
	D	MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + Meter Data (Real Time Transmitter & Sensor Data on SD Memory)
Special Features		
0	0	NONE
	1	WITH ANTICONDENSE CAP
Connectors for POWER SUPPLY and CABLES FROM SENSOR (Separate Version) (Maximum 5 connectors including IN/OUT connectors)		
A	A	NONE
	B	POWER SUPPLY (n.1 connector)
	C	SEPARATE VERSION (n. 2 connectors)
	D	POWER SUPPLY (n.1 connector) + SEPARATE VERSION (n.2 connectors)
Connectors for INPUTS/OUTPUTS (Maximum 5 connectors including connectors for Power Supply and cables from sensor) (other combinations on request)		
0	0	NONE
	1	n.1 PRESSURE or n.1 TEMPERATURE (n.1 connector)
	2	n.2 PRESSURES or n.2 TEMPERATURES (n.2 connectors)
	3	n.2 DIGITAL OUTPUT - n.1 DIGITAL INPUT (n.1 connector)
	4	n.2 DIGITAL OUTPUT - n.1 DIGITAL INPUT + RS485 (n.1 connector)
	5	n.2 DIGITAL OUTPUT - n.1 DIGITAL INPUT (n.1 connector) + n.1 PRESSURE or n. 1 TEMPERATURE (n.1 connector)
	6	n.2 DIGITAL OUTPUT + n.1 OUTPUT 4-20 mA (n.1 connector)
	7	n.2 DIGITAL OUTPUT (n. 1 connector) + n.1 OUTPUT 4-20 mA + RS485 (n.1 connector)
	8	n.1 RS485 (n.1 connector)
	9	n.1 RS485 (n.1 connector) n.1 Pressure or n.1 Temperature (n.1 connector)
	a	N° 4 ON/OFF output (max 50 Hz - max 100 mA) - (n.1 connector)
	b	n.1 PRESSURE (n.1 connector) + n.2 DIGITAL OUTPUT (n. 1 connector) + n.1 OUTPUT 4-20 mA + RS485 (n.1 connector)
	c	n.2 DIGITAL OUTPUTS +N° 1 ON/OFF input (n° 1 connector) + 1 OUTPUT 4-20 mA + RS485 (n° 1 connector)
	d	n.2 DIGITAL OUTPUT - n.1 DIGITAL INPUT +n° 1 OUT 4/20 mA (n.1 connector) + n.1 PRESSURE (n.1 connector)
e	1 PRESSURE (n.1 connector) + uscita 4/20 mA + 2 uscite ON/OFF + Ingresso ON/OFF + porta RS485 (n.1 connector)	
MID Approval		
A	A	NONE

Complete code
example for order



FM700-A0A1A0A0A0A0