

FM-2D/K

Frequency Converter Flow-totalization of 2 water meters



APPLICATION

- Flow accumulation
- Forward and reverse totalization
- Flowrate indicator
- Monitoring of limit values
- Remote reading
- Remote transmission
- Dosing
- Automation
- For single or compound meters

Main Features

- Two freely programmable pulse outputs with flow direction processing
- Variable pulse provider types connectable
- Current output freely scaleable and separated for forward and reverse flow
- Output for current type with direction identification (-20 mA...+20 mA)
- Separate relay outputs for forward and reverse volumes
- 2 Opto-coupler outputs used for pulses and direction signals or limit value 1 and limit value 2
- Pulse divisor for pulse output, adjustable
- Integrated LC-Display for the display of volume, momentary flowrate and programming data
- M-Bus/MiniBus-Data connection for reading of instant values
- Programmed data is retained after power failure
- Galvanic isolation from supply, entry and output
- Programmable on site by 5 buttons
- Test mode as installation help
- Housing equipped for wall or top hat railing

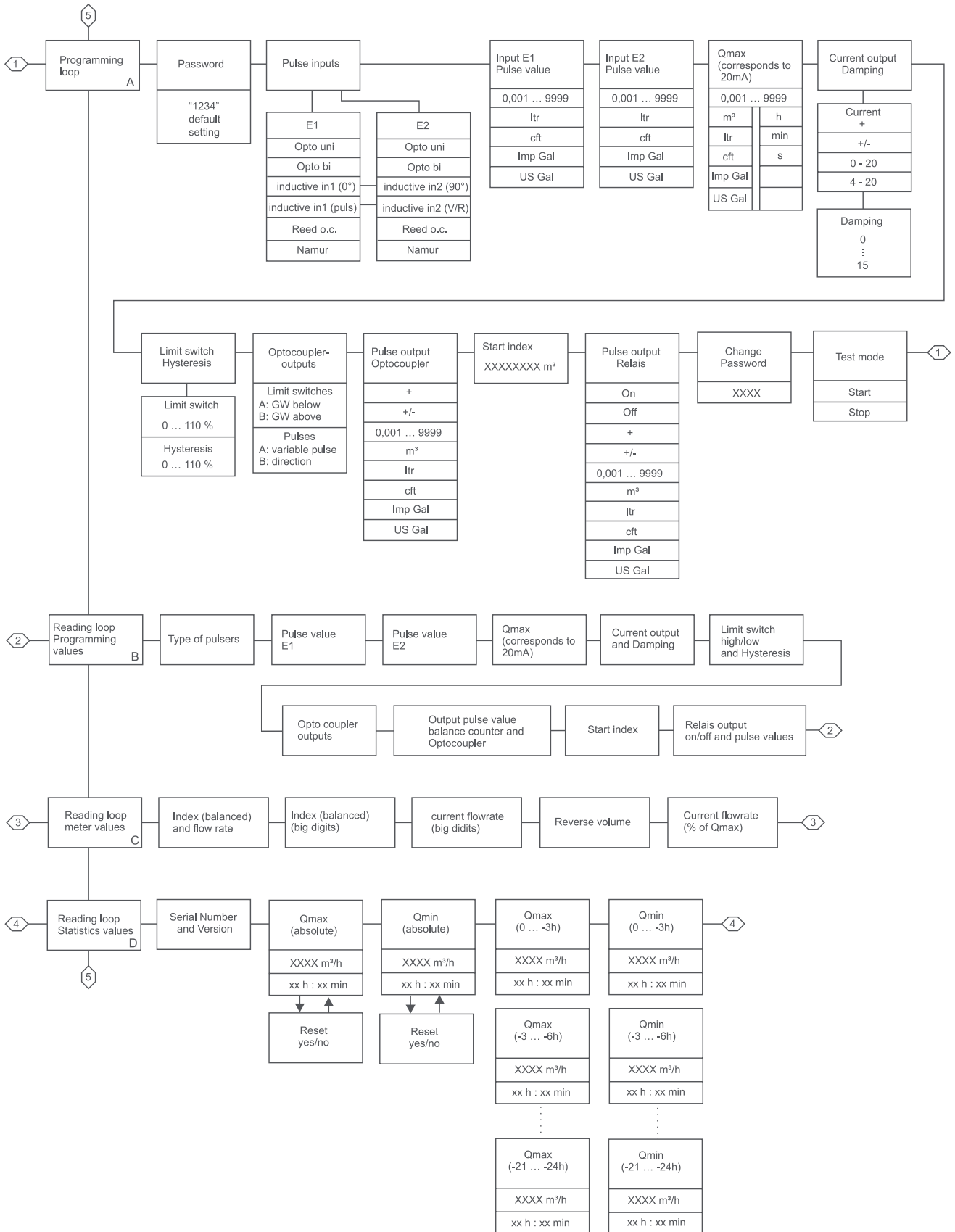
Description

The FM-2D/K is a μ P-controlled frequency converter with two pulse inputs. It can be applied in linking the signals of two input pulses with flow direction signals.

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Menu Structure FM-2D/K



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Technical Data

Power supply

230 V AC (209...253 V), 115 V AC (105...126V),
24 V DC (20...27 V), 24 V AC (17...27 V)

Power consumption

8 VA

Dimensions

100 x 73 x 124 mm (W x H x D)

Weight

approx. 650 g

Protection class

Housing IP 40; Terminals IP 20

Temperature range

operation: 0 ... +50 °C

storage: -10 ... +80 °C

Input

Universal sensor input for Opto-pulser

(EN 60947-5-6), Reed- and open-collector-pulser
8.2 V, approx. 1kOhm

Auxiliary voltage for feeding 3-wire sensor

12 V, 10 mA

Input frequency range

0 ... 300 Hz

(0 ... 150 Hz Flow direction identification)

Maximum cable length

approx. 6 km

(depending on cable quality and pulser type)

Contact bounce suppression

automatic

(depending on the input frequency and sensor type)

Output

Current output

0 ... 20 mA or 4 ... 20 mA (selectable)

Load

max. 1000 Ohm (at nominal supply voltage)

(max. 700 Ohm with connected 3-wire pulser)

Response time

16 step selectable (no damping = 0, max. damping = 15)

Max. transmission distance

approx. 14 km at 500 Ohm-load with a cable cross section of
1 mm²

Relay-pulse output

Relay closed, max. 48 V AC/DC, 1 A voltage free,
closure time 400 ms, max. 1 Hz, pulse value free selectable

Max transmission distance

approx. 500 m with direct connection

approx. 12 km with transistor relay

Opto-coupler outputs

max. 30 V, 30 mA, 150 mW, digit pulse 500 µs transmitted

Direction and limiting value continuous contact

M-Bus output:

in compliance with EN 13757-3

Display

Liquid crystal display (LCD):

- Momentary flowrate
- Counter reading
- 8 Maximum-values (3 hour interval of the last 24 hrs);
resetable
- 8 Minimum-values (3 hour interval of the last 24 hrs);
resetable

Programming data:

- Flowrate range
- Input pulse validity
- Output pulse validity
- Standardized current range 0/4 ... 20 mA
- Response time (16-levels)
- Limit value

Calibration

5-input keys used in conjunction with LCD, configurable program
protection

Lightning protection

To protect the device from voltage surges caused by lightning,
installation of lightning protection devices is recommended.

Intrinsic safety

If the water meter / pulser is to be installed in a hazardous area
the FM-2D/K must be installed in a safe area with the pulser inputs
isolated by means of suitable transistor relays.



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