

Flow Measurement

SITRANS F R

SITRANS F RA110 electric flow register

Overview



Application

The display of the electric flow register is a universal LCD for converting the measured value and displaying the current value, total value and accumulated total. Depending on the design, the flow register can be provided with a scaleable pulse output for the total value and/or a current output of 0/4 to 20 mA.

Design

The electric flow register is fitted with a large, extremely clear LCD (90 x 40 mm in size), where the flow and total value are displayed with seven 17 mm digits and 8 mm digits respectively. Units, time units, flow trend and device status are displayed in addition.

The electronics is fitted in a rugged aluminum housing (IP67) with three large keys. The alphanumeric menu structure in English or German permits simple configuring and can be used for many applications.

Models 61, 63, 65 and 66, 67, 68 are supplied with the electric flow register already mounted on the pulser.

Function

The flow register of the SITRANS F RA110 receives, e.g. from a pulser, information on the current flow. This information is converted into the flow per second, minute, hour or day using a programmable 7-digit K-factor. Conversion is also carried out for the total values and accumulated totals. The units for the flow and accumulated total are completely independent.

The total value can be reset by pressing the "CLEAR" key twice. The accumulated total cannot be reset and is displayed with 11 digits.

The standard configuration displays the total value (17 mm digits) and the flow (8 mm digits) simultaneously. It is also possible to output the current value on the 17 mm digits. In this case, the total value is displayed by pressing "SELECT". The electric register has inputs for Namur sensors. Connection is possible to practically every available sensor system.

The active and passive 0/4 to 20 mA analog output has a resolution of 12 bits and can be connected to a load of 750 Ω.

The pulse output can be exactly defined, e.g. to generate one pulse per 3.5 liters. The pulse lengths can be set to 1 to 9 999 ms. The maximum output frequency is limited to 500 Hz. The transistor can switch max. 50 V DC/ 300 mA.

All configuration parameters are saved in an EEPROM. The total value and the accumulated total are saved once a minute, so that only a minimum amount of information is lost in the event of a power failure.

The SITRANS F RA110 can be ordered with powerful LED background lighting for use under unfavorable viewing conditions. The menu language of the displays can be set to German or English.

Technical specifications

Input	
Pulse input	NAMUR signal
Frequency	NAMUR: 0 ... 500 Hz
Sensor supply	8.2 V or 24 V DC
Output	
Pulse output	Max. frequency 500 Hz, pulse width 1 ... 9999 ms adjustable. Type: Transistor output, max. load 24 V DC/170 mA (active) and 50 V DC/300 mA (passive)
Analog output	Range 0/4 ... 20 mA, accuracy: $\pm 0.1\%$, resolution 12 bit, response time (10 ... 90 %): 100 ms, load max. 750 Ω, active or passive, function: flow 0/4 ... 20 mA freely adjustable
Functionality	
Operator	The total value and flow are displayed. The total value is deleted by double-pressing the "CLEAR" key. The total value and the accumulated total are displayed by pressing the "SELECT" key.
Total value	17 mm (0.67 inch) high, 7 digits, max. 3 decimal places; the total value can not be deleted. Units: l, m ³ , gal, USg, kg, lb, bbl or none K-factor: 7-digit 0.000010 to 9 999 999 Settings independent of flow
Accumulated total	8 mm high (0.31 inch), max. 11 digits, max. 3 decimal places, the accumulated total cannot be reset
Flow rate	8 mm (0.31 inch) or 17 mm (0.65 inch) high, max. 7 digits, max. 3 decimal places Units: ml, l, m ³ , mg, g, kg, ton, NI, Nm ³ , scf, ref, cf, lb, bbl, gal or none Time units: second, minute, hour, day
Rated conditions	
Operating temperature	-40 ... +80 °C (-40 ... +176 °F)
Degree of protection	IP67 (NEMA 4)
Design	
Material	Housing: aluminum, UV-resistant powder coating Window: Polycarbonate Gasket material: Silicone
Dimensions	See dimensional drawings
Power supply	
Power supply with	24 V AC/DC $\pm 10\%$ or 115/230 V AC $\pm 10\%$
Power consumption	Max. 9 W
Certificate and approvals	
Ex protection	EEx ia IIB/IIC T4
For official calibration inspections	In preparation

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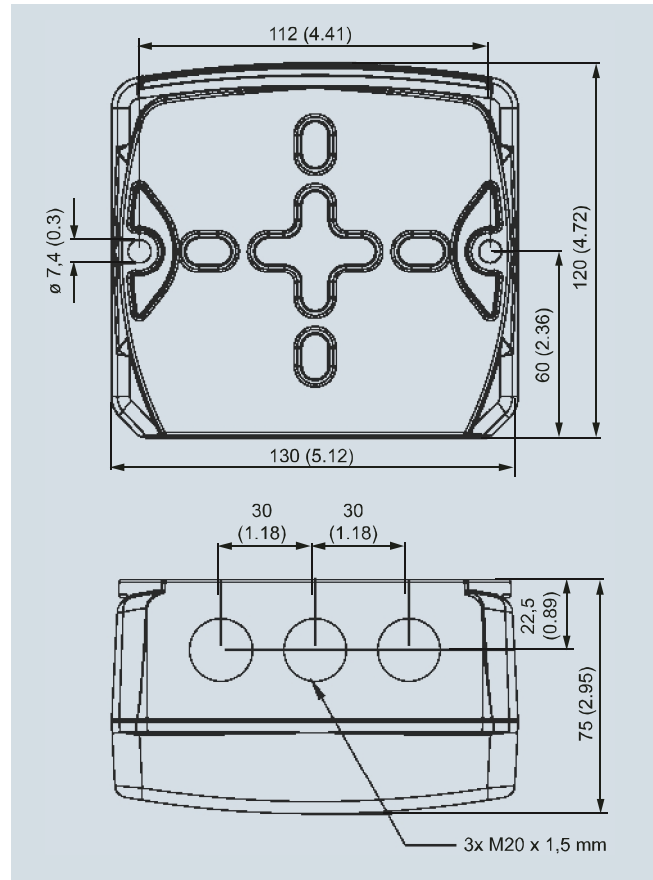
SITRANS F RA110 electric flow register

Selection and Ordering data	Article No.
Electric flow register SITRANS F RA110	7MV1070-
Electric register in aluminum housing for display of flow and total quantity, 7-digit LCD, IP67 (NEMA 4), without explosion protection, menu language German/English	A 0
Signal input	
NAMUR signal	1
Power supply	
Incl. sensor supply 8.2 V DC	
24 V AC/DC ¹⁾	A
230 V AC ¹⁾	B
16 ... 30 V DC ²⁾	C
Function (output)	
Display of flow and total value	A 0
Additional active pulse output ¹⁾	B 1
Additional passive pulse output	B 2
Additional active pulse output and current output ¹⁾	C 1
Additional passive pulse output and current output	C 2
Installation	
For wall mounting	0
For additional mounting at compact version	1
Explosion protection	
without	0
EEx ia IIB/IIC T4 up to max. 100 °C	1
LED background lighting	
without	A
with background lighting	B

1) Not for ATEX version
 2) For ATEX version only

Note:
 Cable glands for M20 are not included in delivery.

Dimensional drawings



Electric flow register SITRANS F RA110, dimensions in mm (inch)

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