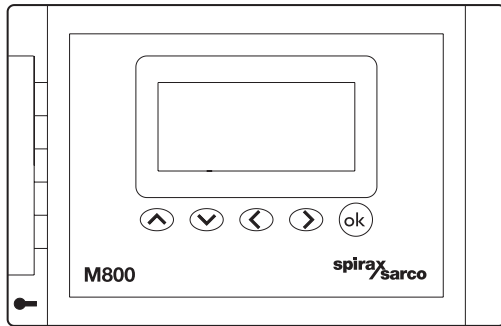


M800 Steam Flow Computer



Description

The M800 steam flow computer is available with either panel or wall mount connections that can operate with:

- Gilflo, ILVA, DIVA flowmeters.
- Vortex, Spiraflor and orifice plate pipeline units.

The M800 can provide density compensation for saturated and super-heated steam with suitable inputs from pressure and / or temperature transmitters and will display:

- Totalized flow
- Flowrate
- Temperature
- Pressure

The M800 can also be used for heat metering applications to measure the mass and temperature of saturated steam flow into a process, and the temperature of condensate flowing out. The net energy consumed by the process can then be calculated and displayed in terms of net power.

Operator settable alarm limits are provided to give a warning when the flowrate, temperature or pressure goes above or below specified limits. These alarms are indicated on a graphic display and can be transmitted via 2 relays (see 'Options' below). A digital pulsed output is provided as standard to signal mass or energy (per pulse).

A 4-20 mA analogue output channel is also provided to enable re-transmission to a chart recorder or BMS system of the flowrate or net power.

The M800 also comes with four independent timers, which are capable of recording the total flow and peak flow with the time of occurrence within a settable period of time.

A customer selectable security code is provided to avoid casual tampering.

Options

As well as the above functions the M800 is easily expanded by the use of additional option boards, which can be simply retrofitted to the base unit.

Additional options available:

- 4-20mA analog output board – providing 2 x 4-20 mA outputs, which can be configured for pressure and temperature.

- Relay option board – providing 2 x volt free relays that can be configured for alarms.
- Modbus RTU communications option board – providing access to total, flowrate, power, temperature and pressure.

Display parameters

Totalized flow	lb, kg, or customer scaleable
Flowrate	lb/hr, kg/h, kW or Mbtu/h
Temperature	°F or °C
Pressure	psi g or bar g
Time	24 hour clock
Date	MM / DD / YY or DD / MM / YY
Trend graph	flowrate

Technical data - power

Supply voltage	99 V to 264 V at 50 - 60 Hz
Power consumption	7.5 watts maximum
Overvoltage category	II
Pollution degree	3
Calculation rate	10 / sec (Orifice plates 2 / sec)

Technical data - input

	Input voltage	(maximum) 2.5 Vdc
	Input impedance	110 Ω
4-20 mA input(s)	Input current (maximum)	22 mAdc
	Termination	Screw terminals (supplied)
	Resolution	0.01%
	Current output (per channel)	30 mAdc ±15%
	Open circuit voltage (maximum)	32 Vdc
Current source(s)	Total voltage drop (maximum)	19 Vdc @ 22 mAdc
	Termination	Screw terminals (supplied)

Environmental information

Maximum operating relative humidity	80% up to 88°F (31°C) decreasing linearly to 50% at 104°F (40°C)
Maximum altitude	6 562 ft (2 000m) above sea level
Ambient temperature limits	0 - 131°F (55°C)
Enclosure rating	IP65 (with correct cable glands) EN 61326: A1 and A2 emissions Class A equipment Table 4
EMC: Emissions and immunity	EN 61326: A1 and A2 immunity for industrial locations Annex A Table 1
Electrical safety	BS EN 61010-1
Enclosure colours and materials	Grey ABS

Output technical data

Pulse output

Contacts	Volt free digital transistor (NPN or PNP)
Maximum supply voltage	28 Vdc
Maximum voltage in closed / on position	1 V
Minimum load resistor	≥ 10 kΩ
Termination	Screw terminals (supplied)

4 - 20 mA output

Range	4 - 20 mA
Minimum current	0 mA
Maximum current	22 mA
Open circuit voltage (maximum)	19 Vdc
Resolution	0.01%
Maximum output load	500 Ω
Isolation	100 V
Termination	Screw terminals (supplied)

Option board technical data

Dual relay alarm option board -

Two independent mains rated relay outputs

Contacts	2 x changeover relays with common
Maximum load	3 A resistive @ 250 Vac 1 A inductive @ 250 Vac
Voltage rating	250 Vdc
Electrical life	3 x 10 ⁵ or greater depending on load
Mechanical life	30 x 10 ⁶
Termination	Screw terminals (supplied)

Isolated dual 4 - 20 mA re-transmission option board - Two independent 4 - 20 mA isolated re-transmission

Range	4 - 20 mA
Minimum current	0 mA
Maximum current	22 mA
Open circuit voltage (maximum)	18 Vdc
Resolution	0.01%
Maximum output load	500 Ω
Isolation	100 V
Termination	Screw terminals (supplied)

Communications option board

RS485 Modbus communications

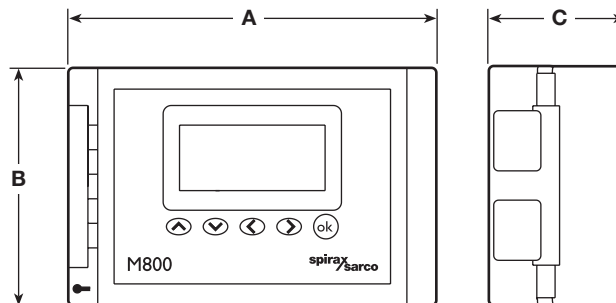
Physical layer	4 wire full duplex or 2 wire half duplex RS485
Protocol	Modbus RTU format
Isolation	500 Vac / dc
Receiver unit load	1/8 (256 devices maximum)
Termination	Screw terminals (supplied)

For a general description of M800 steam flowmetering systems, see other literature.

Dimensions / weights (approximate) in inches (mm) and pounds (kg)

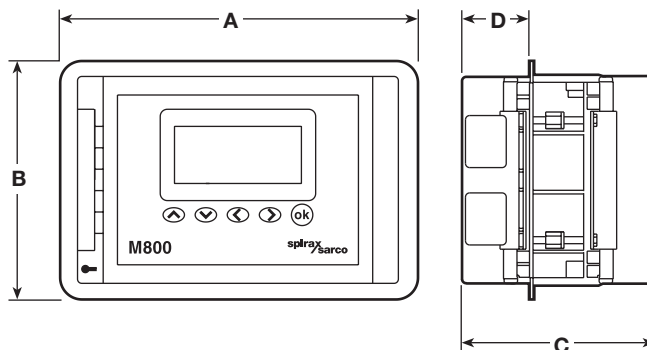
Wall mounting

A	B	C	Weight
9.3 (235)	5.8 (147)	3.3 (85)	2.4 (1.1)



Panel mounting

A	B	C	D	Weight
10 (255)	6.7 (170)	5.4 (137)	1.9 (48)	3.1 (1.4)



Safety information, installation and maintenance

For full details, see the Installation and Maintenance Instructions supplied with the product.

Installation notes:

Wall mounting	4 off screw slots in corners.
Panel mounting	Screw in sub-assembly with back clamps. Pre drilled knock-outs in positions shown in the IMI.
Cable entries	Cable entry fittings and seals to suit appropriate regulations and IP rating to be supplied by the customer.
Wiring (supplied by installer)	Total length connecting between the M800 and pipeline transmitters must not exceed 1300'(feet) (400m). 24AWG Wire or equivalent (signal wiring).

How to order example:

1 off M800 wall mounted steam flow computer.

Note: If requested at the time of order placement option boards can be factory fitted prior to despatch. They can also be ordered separately and fitted to the M800 at anytime.