795X Series flow computers
for the gas industry

mobrey

EMERSON
Process Management

Reliable, accurate and versatile flow data acquisition and analysis, straight down the line...

Production

Transmission

Solartron 7950, 7951 and 7955 flow computers acquire primary data directly from flowmeters, density and temperature sensors, pressure and differential pressure transmitters and gas analyzers to monitor and control the local process plant associated with the flow measurement system. Compact, highly reliable and easy to set up and use, the 795X Series has been specifically designed to cope with the exceptionally demanding regimes that are the norm in the gas industry.

Simple to use
The simple to use menu-driven keyboard provides complete access to all database variables and built in wizards simplify configuration.

Remote configuration
PC packages give the user the ability to change the configuration remotely.

Solartron software library
The Solartron application library contains all the appropriate flow calculations associated with the different flowmeter types, e.g., orifice, dall tube, venturi, vortex, turbine, ultrasonic and V-cone measurement applications.

Communications
The Solartron flow computer product range offers the user unprecedented communications flexibility. The Solartron flow computer interfaces to any other vendors RTU's, PLC's, DCS's, 'smart' instruments and other flow computers.

Smart transmitters
Intelligent instruments from many vendors are easily integrated using the Smart option card on both the 7951 & 7955. Hart protocol is currently available and Fieldbus will be implemented when the standards are fully defined.

Multi-stream capability
The Solartron flow computer can perform multi-stream metering applications with different flow meter types.

General standards supported
AGA 3, 4, 5, 7, 8, and 12
API 2530, 1101, 2534 and 2540
IP Parts VII, X, XIII, XV
ISO 5167, 6551, 6976, 7278

Refining

Ordering Information

7950AA – Klippon connectors
7951AA – panel mounted, Klippon connectors
7951AB – panel mounted, D-type connectors
7955AB – panel mounted, D-type connectors
FC-Configuration - Programming Tool for use with PC

Option Cards (must be ordered with flow computer)
795x6A - Extra inputs and outputs (see Specification above)
795x7A - Hart channels (Uses 1 analog input per Hart channel)
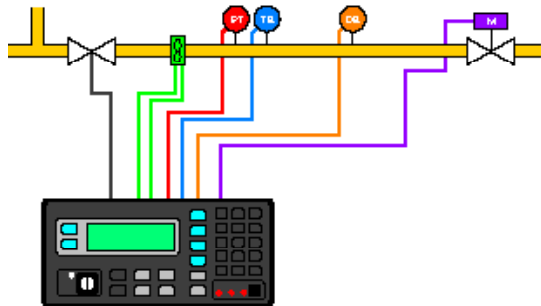79558A – Additional serial communication links (RS 232 / RS 485)

Distribution

...whatever the application

Gas Turbine

The gas turbine application offers the customer a higher accuracy flow measurement system than the accurate orifice plate system. The Solartron gas turbine flow computer offers the following features :-

Inputs
- Pressure and temperature inputs as either 4 - 20mA or Smart/Hart digital protocol.
- Asynchronous data link to gas chromatographs.
- Analog or digital links to on-line calorimeters.
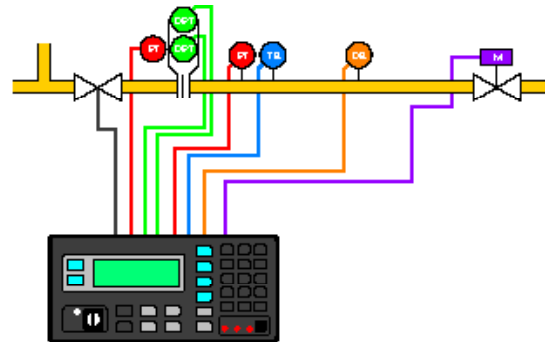- Supports multiple line density or base density transducers.

Features
- Multiple 10 point turbine linearization curve, with curve fitting capability between points.
- Capability to handle single or dual pulse turbine pulses, with dual chronometry detection of missing pulses.
- Multi-stream capability for up to four gas streams.

Calculations
- Gas volume flow calculations using AGA7 algorithms.
- Line density derived from densitometer source or from PTZ calculation using compressibility, temperature, pressure & base density.
- Base density derived from densitometer source or from PTZ calculation using compressibility, temperature, pressure & line density.
- Compressibility derived from AGA 8, NX 19 (Mod and Mod 3H), or SGERG.
- Specific gravity derived from gravitometer source or from calculation using base density.
- Calorific value calculation derived from calorimeter or gas chromatograph source or from a calculation using ISO6976 or AGA5 (CO_2%, N_2% & SG).

Gas Orifice

The gas orifice application is one of the most common flow measurement systems in the gas industry. The Solartron gas orifice flow computer offers the following features :-

Inputs
- Differential pressure, pressure and temperature inputs as either 4 - 20mA or Smart/Hart digital protocol.
- Asynchronous data link to gas chromatographs.
- Analog or digital links to on-line calorimeters.
- Supports multiple line density or base density transducers.

Features
- Auto-ranging on multiple differential pressure configurations.
- Multi-stream capability for up to four gas streams.

Calculations
- Gas mass flow or corrected volume calculations to ISO5167 or AGA 3 standards.
- Line density derived from densitometer source or from PTZ calculation using compressibility, temperature, pressure & base density.
- Base density derived from densitometer source or from PTZ calculation using compressibility, temperature, pressure & line density.
- Specific gravity derived from gravitometer source or from calculation using base density.
- Calorific value calculation derived from calorimeter or gas chromatograph source or from a calculation using ISO6976 or AGA5 (CO_2%, N_2% & SG).
- Compressibility derived from AGA 8, NX 19 (Mod and Mod 3H), or SGERG.

Specification

Model	7950AA	7951AA 7951AB 7955AB		
Mounting	Wall	Panel	Panel	Panel
Connections	Klippon	Klippon D-type	D-type	
Inputs				
Flowmeter (single or dual pulse)	1	1	2	4
Density (time period)	4	4	4	4
Analog (0-20mA or 4-20mA)	4+4[+]	4+4[+]	4+6[+]	16
Gas chromatograph	1	1	1	4
RTD/PT100[b]	4	4	4	4
HART loops[c]	2	2	2	4
Digital (status)	8	6	8+8[+]	26
Outputs				
Analog (0-20mA or 4-20mA)	4+4[+]	4+4[+]	4+4[+]	4+4[+]
Digital (status; incl. 1 alarm relay)	8	6	8+9[+]	25
Pulsed (open collector)	3	3	5	5
Communications				
RS232/485	3	3	3	3+2 [d]

[+] - with optional input/output card
[b] - each RTD/PT100 input uses one analog input
[c] - with optional HART card; each HART loop uses one analog input
[d] - with additional communications card

Power requirement				
V ac 50-60Hz	90-265	n/a		
V dc	21-30	20-30		
Power	25W	40W		

Environment		
Operating temperature		0 to 50°C (32 to 122°F)
Storage temperature		-20 to 70°C (-4 to 158°F)

Enclosure				
Environmental rating	NEMA4X	NEMA12		
	IP65	IP52		
Height, mm (in)	320 (12.6)	101 (4.0)		
Width, mm (in)	300 (11.8)	197 (7.8)		
Depth, mm (in)	130 (5.2)	257 (10.2)		
Panel cutout h x w, mm (in)	n/a	96 x 192 (3.8 x 7.7)		
Weight approx., kg (lb)	4.5 (9.9)	2.5 (5.5)	2.5 (5.5)	3.5 (7.7)

Regulations	
Metrological	NMI
Electrical safety	EN 61010-1: 1993
Electrical emissions	EN50081-1: 1992 (Light industrial)
Electrical immunity	EN50082-2: 1995 (Industrial)

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