solartron mobrey

ELECTRONIC FLOW
MEASUREMENT SYSTEMS

795X Series Flow computers for the oil & refined products industry

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, temperature and viscosity sensors, pressure and differential pressure transmitters, and water cut monitors, to control and monitor 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 oil and refined products 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, turbine, ultrasonic, coriolis, positive displacement, venturi, dall tube 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

API 2540 sections A, B and C of tables 5, 6, 23, 24, 53 and 54

API Chapter 12, section 2

IP Part 1

IP Part 15, sections 1&2

API 11.2.1, 11.2.2, 11.3.2.1, 11.3.3.2

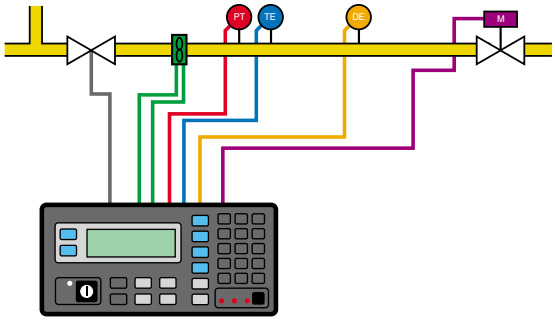
Refining

Distribution

...whatever the application.

Liquid turbine or PD Meter

The liquid turbine or PDM application offers customers a more accurate flow measurement system than an orifice plate system. The Solartron liquid turbine/PDM flow computer offers the following features :-



Inputs

- Pressure, temperature, density, viscosity or water cut inputs as either 4-20mA, time period, or Smart/Hart digital protocol.
- Supports multiple flow streams.
- Direct control and monitoring of all prover inputs and outputs.

Features

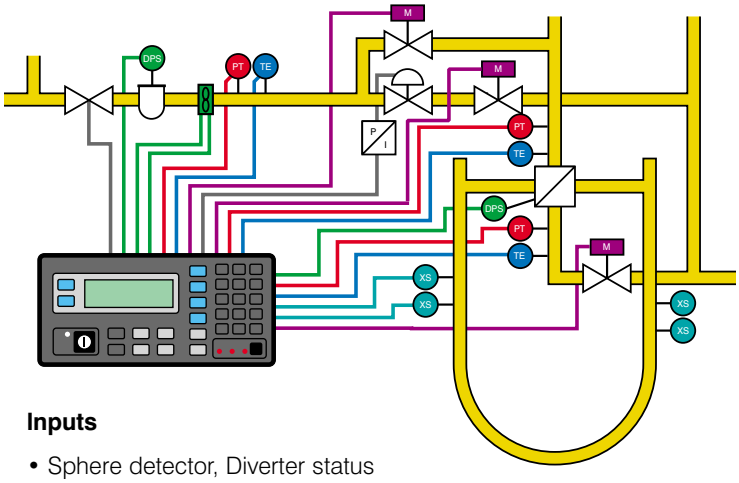
- Multiple 10 point turbine linearization curve, with curve fitting capability between points.
- Capability to handle single or dual pulse turbine pulses, with detection of missing pulses.
- Automatic or semi-automatic control of the proving sequence for bi-directional, uni-directional and compact provers and master meter proving.
- Multi-stream capability for up to four liquid streams.

Calculations

- Volume flow calculations using MPMS chapter 12, section 2 algorithms.
- Line density direct measurement or using reverse API calculations.
- Referred density using API calculations or matrix temperature referral curve.
- Volume correction factors as per API 2540 tables 6A, 6B and 24A and 24B.
- Gross and Net volume calculations using MPMS chapter 12 section 2 algorithms.
- Proving algorithms as per API MPMS Chapter 4

Prover

The prover function can either be integrated into the stream flow computer or be a stand-alone instrument. The software package offers the following features :-



Inputs

- Sphere detector, Diverter status & Valve status.
- Turbine flowmeter pulse trains.
- Temperature, pressure for inlet and outlet of prover loop.

Outputs

- Valve control, Ball launch and flow control.
- Prover start and stop to stream flow computers.
- Plenum pressure control

Features

- Proving can be controlled and initiated from any flow computer.
- Flow control valve operation to prove at any set flow rate.
- Multiple proving runs can be set up in advance.
- Prover report generated at the end of a prove.
- Capability to interface to uni- and bi-directional pipe provers, compact and master meter provers.

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[a]
Density/viscosity (time period)	4	4	4	4
Analog (0-20mA or 4-20mA)	4+4[+]	4+4[+]	4+6[+]	16
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]

[a] - plus extra input facility for master meter prover
[+] - 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		
VAC 50-60Hz	90-265	n/a
VDC	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 IP65	NEMA12 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)

Application software library
Density and viscosity referral; viscosity correction of turbine meters
Multiple meter runs
Batch control with PID
Automatic product detection
Prover control
Net standard volume and net mass calculation
Logging and report generation

Ordering information

7950AA – wall mounted, 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)

SOLUTIONS • WORLD CLASS MEASUREMENT

Solartron, part of the Roxboro Group PLC, has been a market leader in supplying precision measurement solutions for the oil, gas, power, aerospace and process industries for over 50 years.

The company manufactures a range of transducers and instrumentation for on-line continuous measurement of density and viscosity in liquids and gas which, together with data acquisition products and level measurement sensors, have a global reputation for excellence in performance, reliability and support.

CERTIFICATE No.FM1709

Solartron's Quality System is approved to BS EN 9001: 1994, and our Calibration Laboratory is certified by NAMAS.

All our products carry the CE mark, showing that they are fully compatible with EC Directive 89/336/EEC.

Full details of Solartron density and viscosity sensors are contained in the brochures listed below:

Multistream liquid flow computer	B254001
Liquid density products	B1025
Viscosity products	B1210
Gas density products	B1253
795x signal converters	B1251

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