

General Specifications

Yokogawa Y-Flow™ FFC Orifice Flow Computer

GS 04Q01B01-01E-A

Overview

Yokogawa's low power orifice flow computer offers flexible I/O points and superior data collection with a wide range of connectivity options. By combining Yokogawa's EJX910A multivariable transmitter (DP and SP) and Y-Flow™ RTU, you can rest assured that your critical process will never lose a beat. Whether you are measuring gas flow for custody transfer or need wellhead control and monitoring, Yokogawa offers both the performance and stability required in the most rigorous environment.

- API Chapter 21 compliancy
- AGA 3 & 5 capability
- AGA 8 (Detailed & Gross Methods I & II) & NX-19
- Single and Bi-Directional (total vol. + avg. vol.) measurement
- Multiple run capability
- Solar panel with battery back-up or AC powered with battery back-up
- Wide array of wireless connectivity options (Cellular, wireless radio and satellite)
- Pole mount, wall mount or direct mount options
- Wide variety of enclosure size options



Yokogawa EJX910A Multivariable Transmitter Accuracy Specifications

Specifications for the EJX910A are condensed for the purpose of this document. *Please see GS01C25R01-01EN for more detailed information.*

The EJX910A uses the established DPharp pressure sensor technology that allows for simultaneous measurement of differential pressure and static pressure (absolute or gauge) from one sensor. Out of all the Yokogawa pressure transmitters, the EJX910A has the best accuracy for combined DP and SP measurement, which makes it an excellent choice for flow calculations with a RTU.

Measurement Span/range		DP inH2O	SP psia
M	Span	2 to 400	145 to 3600
	Range	-400 to 400	0 to 3600
H	Span	-10 to 2000	145 to 3600
	Span	-2000 to 2000	0 to 3600

Reference Accuracy

(Includes terminal-based linearity, hysteresis, and repeatability)

- DP Up to $\pm 0.04\%$ of span standard
- SP $\pm 0.1\%$ of span (Absolute)

Long Term Stability (All normal operating conditions, including overpressure effects)

- DP $\pm 0.1\%$ of URL per 10 years Turndown
- DP 200:1
- SP 25:1

RTU Technical Specification

Input Power Supply

- Input Power: 7-30 VDC
- One (1) power supply/rechargeable battery input with screw terminals
- Integrated solar panel charger supporting up to 20W solar panel

Power Monitoring and Battery Backup

- Supply voltage monitoring through A/D with low supply voltage alarm
- 3.6 VDC lithium ion battery backup for database, history, audit trail, time/date and RAM
- 10W on board battery charger, 100W maximum
- 32AH solar panel battery (optional)

Performance

- Processor: ARM Dual Core 32 bit @ 48 Mhz
- SRAM Memory: 4MB
- SPI Flash Memory: 4MB
- A/D: 16-bit with optional HART filtering

Display Options

- Single line alphanumeric display
- 4 line alphanumeric display with push button keypad

Operating Temperature

- -40C to 70C (-40F to 160F)

Communications Options

- Standard: Two (2) Serial RS-232/RS-485
- One (1) Ethernet Port, (1) USB Host Port, (1) USB Device Port
- Wireless Communication: Cellular (CDMA/GSM), Radio (spread spectrum licensed & unlicensed frequency), Satellite (LEO &GEO)
- Protocols: MODBUS TCP/IP, MODBUS Serial, ERC Hex ASCII (native)

Input and Output (I/O)

- Analog Inputs: Four (4) universal analog inputs, 0-5VDC or 4-20mA (Requires 250 ohm resistor)
- RTD Inputs: One (1) temperature probe
- Digital Input/Output: Two (2) form A/C pulse input, Two (2) form C relays, Two (2) DI, Two (2) DO

Software

- Field Manager

Optional Expansion Board Capability (9010449)

- Two (2) Serial RS-232/RS-485
- Four (4) universal analog inputs
- One (1) analog output
- One (1) RTD temperature probe
- Two (2) form A/C pulse input
- Three (3) DI, Three (3) DO
- Opto 22 G4 Voltage Signal Conditioner

Approvals

- UL and cUL Class I Div II Group A,B,C,D

Warranty

- 4 years limited warranty

Model Codes

1. Model	
R/FFC	Orifice Flow Computer
2. Multi-variable Transmitter; Range	
-A	None
-B	400" 0.04% 3600G 0.1% (1244NP)
-C	+/- 400" 0.04% 3600G 0.1% (1244NP)
-D	2000" 0.04% 3600G 0.1% (1244NQ)
-E	+/- 2000" 0.04% 3600G 0.1% (1244NQ)
-F	Special
3. Temp 1	
A	None
B	6'
C	10'
D	15'
E	30'
F	6' (1/8" diam.)
G	6' (4" probe)
H	Special
4. Mounting	
A	None
B	Pole Mount
C	Direct Mount
D	Wall Mount
E	Horizontal Pole
F	Special
5. LCD Display	
A	None
B	Single Line
C	4 Line
D	Keypad & 4 Line (external)
E	Keypad & 4 line (internal); 1 line (external)
F	Special
6. Laptop Connection	
A	None
B	RS232 (MS)
C	USB
D	Ethernet
E	Special
7. Com Gear 1	
-A	None
-B	Freewave FGR
-C	Freewave MM2
-D	Freewave MM2-P-T
-G	Sierra LS300 V
-H	Sierra LS300 A
-I	Sierra RV50
-J	MDS805
-K	Iridium 9602
-L	Multi-Tech V
-M	Multi-Tech A
-N	Sierra Kit
-O	MDS Kit
-P	Freewave FGR Kit
-Q	Special

8. Connection 1	
A	None
B	Omni (Stubby)
C	Bulkhead
D	Polyphaser
E	Special
9. Ext Serial Port	
A	None
B	1 ESP
C	2 ESP
D	Special
10. Com Gear 2	
A	None
B	Freewave FGR
C	Freewave MM2
D	Freewave MM2-P-T
G	Sierra LS300 V
H	Sierra LS300 A
I	Sierra RV50
J	MDS805
K	Iridium 9602
L	Multi-Tech V
M	Multi-Tech A
N	Sierra Kit
O	MDS Kit
P	Freewave FGR Kit
Q	Special
11. Connection 2	
A	None
B	Omni (Stubby)
C	Bulkhead
D	Polyphaser
E	Special
12. E3 Processor	
-A	USB E3UNS
-B	Ethernet E3NES
-C	Full (Both) E3UES
-D	Neither E3NNS
-E	Special
13. Relays; Form C	
A	None
B	(1) Form C
C	(2) Form C
D	Special
14. Battery (with tray, wire & fuse)	
A	None
B	1.2AH
C	7AH
D	17AH
E	32AH
F	Special

15. Solar	
A	None
B	1 Watt
C	5 Watt
D	10 Watt
E	20 Watt
F	Special
16. Pressure 1	
-X1	None
-A1	1G
-A2	2G
-A3	5G
-A4	10G
-A5	25G
-A6	50G
-A7	100G
-A8	200G
-A9	250G
-B1	300G
-B2	500G
-B3	750G
-B4	1000G
-B5	1500G
-B6	2000G
-B7	3000G
-B8	5000G
-B9	75HG
-C1	100HG
-C2	150HG
-C3	230HG
-C4	300HG
-C5	500HG
-C6	1000HG
-C7	1500HG
-C8	1600HG
-C9	2000HG
-D1	3000HG
-D2	5000HG
-D3	100A
-D4	250A
-D5	300A
-D6	500A
-D7	1000A
-D8	1500A
-S1	Special

17. Pressure 2	
X1	None
A1	1G
A2	2G
A3	5G
A4	10G
A5	25G
A6	50G
A7	100G
A8	200G
A9	250G
B1	300G
B2	500G
B3	750G
B4	1000G
B5	1500G
B6	2000G
B7	3000G
B8	5000G
B9	75HG
C1	100HG
C2	150HG
C3	230HG
C4	300HG
C5	500HG
C6	1000HG
C7	1500HG
C8	1600HG
C9	2000HG
D1	3000HG
D2	5000HG
D3	100A
D4	250A
D5	300A
D6	500A
D7	1000A
D8	1500A
S1	Special
18. Analog Out	
A	None
B	A out (3 chan)
C	Special
19. SPM (Signal Protection Module)	
-A	None
-B	(4) 8 VDC
-C	(4) 35 VDC
-D	(4) 200 VDC
-E	8 & 35
-F	8 & 200
-G	35 & 35
-H	35 & 200
-I	Special
20. Extender	
A	None
B	Extender
C	Special

21. Temp 2	
A	None
B	6'
C	10'
D	15'
E	30'
F	6' (1/8" diam.)
G	6' (4" probe)
H	Special
22. Optos	
A	None
B	Red (DC Out)
C	Wht (DC In)
D	Yel (AC In)
E	Blk (AC Out)
F	Red \ Red
G	Red \ White
H	White \ White
I	Special
23. Enclosure; dimensions in inches	
A	8 x 6 x 5
B	8 x 8 x 4
C	10 x 8 x 6
D	10 x 10 x 6
E	12 x 10 x 6
F	14 x 12 x 7
G	16 x 14 x 8
H	18 x 16 x 10
I	Special
Accessories RS232 Serial Cable	
M1274XE	RS232 Serial Laptop Cable 10ft
M1274XF	RS232 Serial Laptop Cable 15ft
M1274XG	RS232 Serial Laptop Cable 25ft
Accessories USB to Serial Adapter	
M1274XJ	USB to Serial Adapter Cable
Accessories USB 2.0 Cable	
M1274XH	USB 2.0 A-Male to B-Male 10ft