



# Y-Flow<sup>®</sup> Field Flow Computer & Remote Terminal Unit





YRTU

YFFC

## Introduction

With over 100 years of research and development in flow and data acquisition technology, Yokogawa's Y-Flow® product line provides unparalleled performance and reliability. The Y-Flow® product family consists of Yokogawa's EJX910 multivariable transmitter and Eagle Research's Computer Processor Board is combined to create Yokogawa's Field Flow

Computer (YFFC) and Remote Terminal Unit (YRTU) products. This technology turns complex gas flow calculations and remote control applications into a simple, flexible and expandable platform through pre-programmed applications. Its low power consumption and rugged design assures reliable operation in the harshest environments. From gas wellhead monitoring and control to transport and distribution, Yokogawa's Y-Flow® provides timely, accurate and reliable measurements that will increase your bottom line.

## Y-Flow® Processor Board

Yokogawa's Y-Flow® processor board consists of a 32bit ARM dual core CPU with 32MB of SRAM (database) memory and 32MB flash (storage) memory manufactured by Eagle Research. The processor board

is used for both YFFC and YRTU products and has access to large process libraries and pre-configured applications. In addition, the processor board has built-in AGA calculations and complies with API Chapter 21 electronic gas measurement specifications. Multiple meter run capability and control schemes are also built into the processor board.



Processor board

Product	Standard I/O	2 Serial RS232/485	4 Line Display	USB	Ethernet Port	Max Battery (Optional)	Max Solar Panel (Optional)	External Keypad	Extender Board	Multivariable Transmitter	Wireless
Y-Flow® YFFC	4AI;1RTD;2PI;2SSR;2DI;2DO	S	S	O	O	32AH	20W	O	O	DP, SP	O
Y-Flow® YRTU	4AI;1RTD;2PI;2SSR;2DI;2DO	S	S	O	O	32AH	20W	O	O	N/A	O

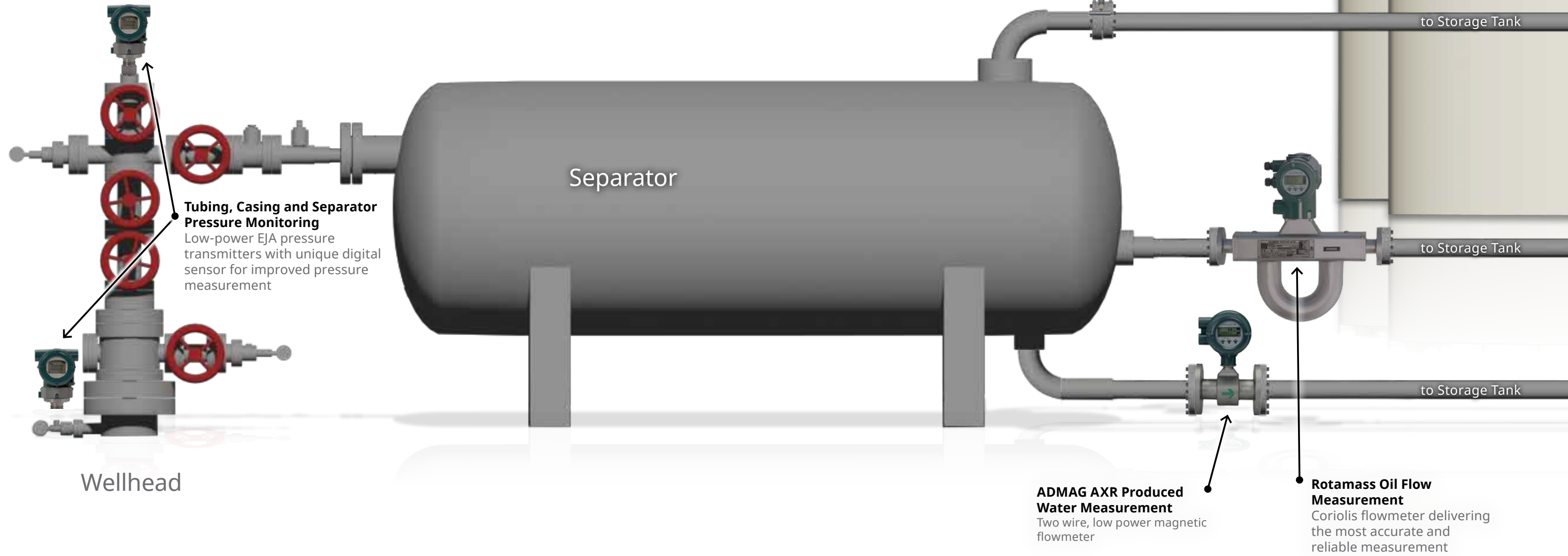
O=Optional; S=Standard

**Proven Reliability for Enhanced Control and Surveillance**

Yokogawa's industrial automation and controls platforms are well regarded in the global marketplace as a leading control company and pioneer in the development of technologies for monitoring and control of processes in oil & gas.

**Wellhead Monitoring & Control**

Manage wellhead operations by monitoring, measuring and automating to improve operational efficiency and minimize downtime



**Tubing, Casing and Separator Pressure Monitoring**  
Low-power EJA pressure transmitters with unique digital sensor for improved pressure measurement

**Orifice Gas Flow Measurement**  
Multi-variable transmitter with unique digital sensing technology for precise flow measurement

**ADMAG AXR Produced Water Measurement**  
Two wire, low power magnetic flowmeter

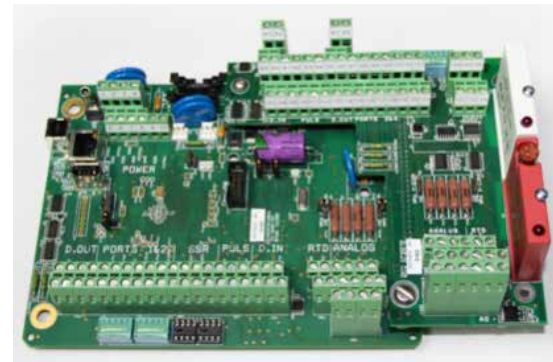
**Rotamass Oil Flow Measurement**  
Coriolis flowmeter delivering the most accurate and reliable measurement

## Y-Flow® Extender Board

In addition to the standard I/O offered on the processor board, the YFFC and YRTU have the capability to expand I/O count by adding the Y-Flow® extender board. Furthermore, the extender board allows for Opto 22 G4 AC and DC input/output modules for applications that require switching loads such as DC relays, solenoids, motor starters, lamps and indicators.



Extender board



Extender board + processor board

Y-Flow® Extender Board	
Type	Count
Serial RS232/RS485	2
Analog Inputs	4
Analog Outputs	1
RTD (Temp Probe)	1
Pulse Inputs	2
Digital Inputs	3
Digital Outputs	3
Opto 2 G4 Slots	2

## Applications

Pre-configured Applications	
AGA 3 Orifice Measurement	Tube/Run Switching
AGA 5 Fuel Gas Calorific Measurement	Turbine Meter Profiling
AGA 8 Gas Compressibility Determination (Detailed & Gross Methods I & II)	Compliance Alarming
AGA-7 Measurement of Natural Gas by Turbine Meter	Tank Level Monitoring
AGA-9 Measurement of Gas by Multi-Path Ultrasonic Meters (using AGA-7)	V-Cone Measurement (pending)
AGA-11 Measurement of Natural Gas by Coriolis Meter	Plunger Lift (pending)
NX-19 Gas Supercompressibility Determination	--
Emergency Shutdown	--
Valve Control	--

## Wellpad Monitoring & Control

Yokogawa's Y-Flow® YRTU is an effective and precise remote management controller that allows for maximized production while ensuring the production process is safe and reliable. By taking inputs from various instrumentations, the YRTU will process and monitor the data through pre-programmed or user-designed applications. The data is logged, stored and transmitted to a host/SCADA system via Ethernet (Modbus Serial, Modbus TCP) or wireless communication protocols.



## Gas Measurement

Yokogawa's Y-Flow® YFFC provides timely, accurate and reliable measurements anywhere, anytime. By combining the Y-Flow® with Yokogawa's state-of-the-art coriolis, vortex and multivariable meters, accurate gas measurements are easier than ever. From orifice flow to steam measurement, Yokogawa's Y-Flow® YFFC provides superior accuracy and reliability that ultimately reduces CAPEX and increase profit.



## Gas Control

In an industry where safety and reliability is priority, Yokogawa's Y-Flow® provides the control and peace of mind for operators and engineers alike. From emergency shutdowns to valve control and positioning, Yokogawa's Y-Flow® is there to ensure the process is safe and sound.





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