

# smartRTU

## Remote Terminal Unit Based Monitoring and Control

### Introducing Mitsubishi Electric's smartRTU Reliable control & surveillance of remote assets



Monitor your assets in realtime



Reliable Store-and-Forward of your data



Integration of network data into business systems



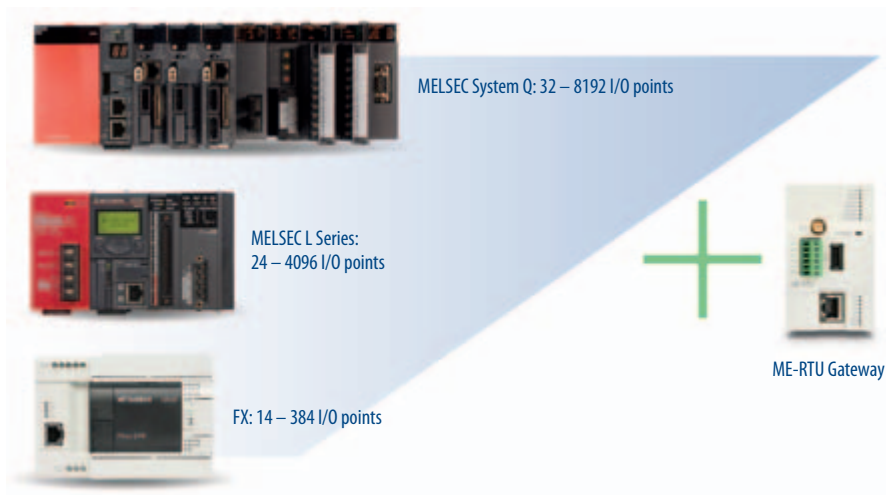
Small to large sites – tens to many thousands of I/Os

# Secure management of remote assets and infrastructure



Monitor the condition of your assets in real time

## Configure the smartRTU to your application size

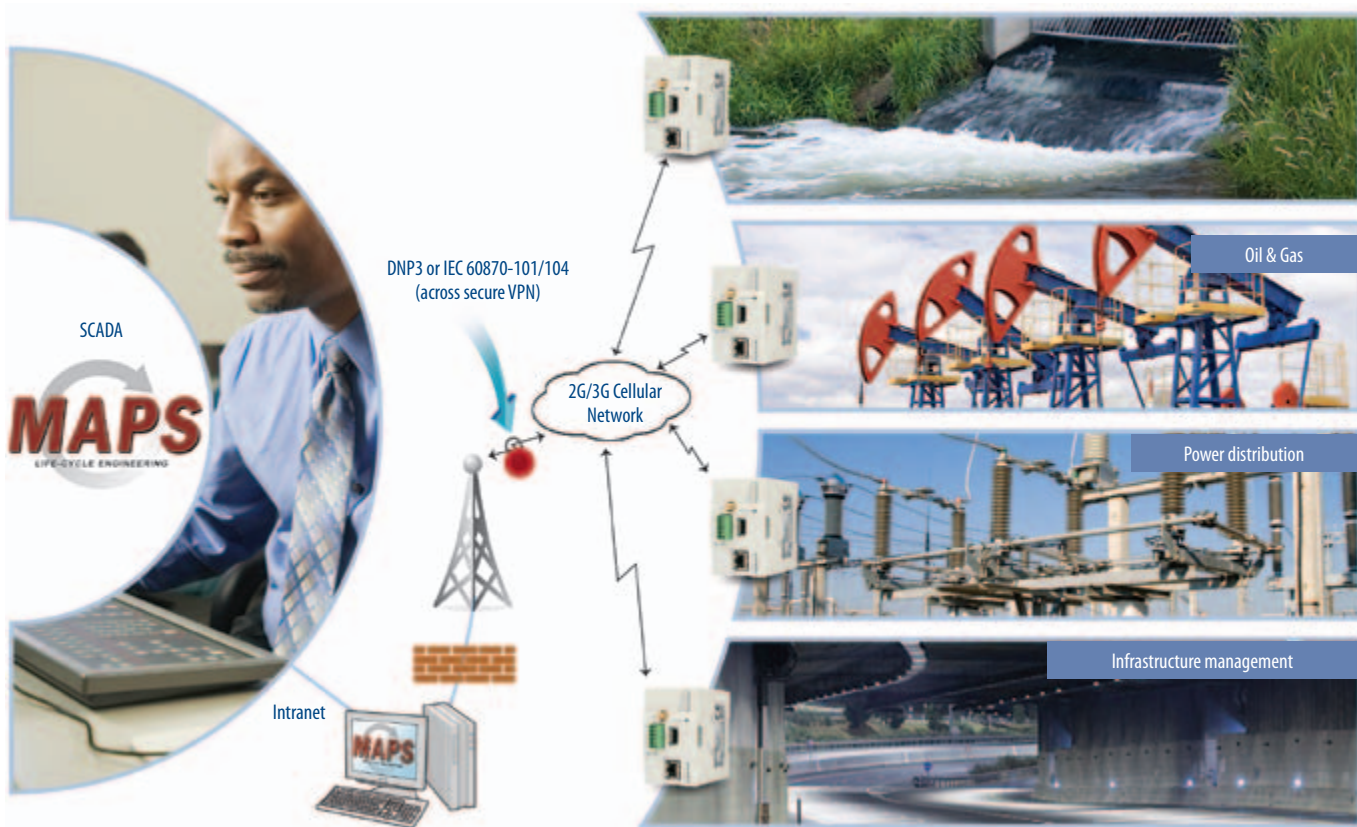


Mitsubishi Electric PLC + RTU gateway = smartRTU to match your needs

**Mitsubishi Electric's smartRTU is available in 3 variants, depending on the size and type of application – use FX-PLC for small, L-PLC for medium and Q-PLCs for large redundancy applications.**

Communicate securely to SCADA systems, the smartRTU addresses requirements for 100% reliable remote surveillance and control of distributed assets, even in extreme climates. With powerful functions like diagnostics, alarm and event-storage and time trend data buffering, it meets the challenges of managing massively distributed assets such as data security, interfacing issues, data continuity and reliable communications.

Mitsubishi Electric's meets these demands with the smartRTU. It supports protocols such as DNP3 and IEC 60870. The smartRTU combines the reliability and robustness of our standard PLC technology with a smart communication gateway, the ME-RTU gateway. Depending on the size and complexity of the application, select the required smartRTU power, pairing the ME-RTU with either an FX-, L-, or Q-Series PLC.



Monitor the condition of your assets in real time

## Your benefits

Mitsubishi Electric's smartRTU combines the needs of a large number of industries into a single device that is simpler than conventional RTUs, yet provides powerful capabilities that can be easily deployed and administered, even by staff with low skill levels. The smartRTU is scalable from a handful of sites to many hundreds with remote configuration management.

## The Mitsubishi Electric smartRTU:

- Minimizes your engineering costs through central engineering
- Deployable in brownfield applications due to multiple fieldbus support
- Copes with demands of small up to large sites
- Very low power consumption
- Stores and forwards your data by an embedded historian that allows time-stamped event logging and data sampling for extended periods of time
- Communicates your data-packets via hacker proof SSL-encrypted VPN tunnels

## Water and Waste-water industry:

- Reliable collection of your data in your water distribution and collection stations
- Complete surveillance for pump networks, wells, booster and filter stations, holding ponds, tanks, flow meters, etc.
- Integration of water network data into corporate and business systems
- Manpower savings with even larger networks
- Redundant, hardened, cyber-secure communications

## Oil & Gas industry:

- Optimum Oil and Gas well field performance
- Management of real-time pipeline operations
- AGA-grade fiscal metering/custody transfer calculations for pipeline operators and customers can be made available

## Power Distribution industry:

- Robust, secure substation automation
- Integration of legacy equipment as well as latest generation IEDs
- Fast fault localisation and protection
- Smart grid ready transmission and distribution networks

## Infrastructure & Management:

- High reliability and availability, remote road, rail, waterway and tunnel management
- Integration of remote sensors, actuators and Closed Circuit Television (CCTV), along with variable traffic signage
- Higher infrastructure utilisation factors, safety and performance

# Specifications

Function	Specification	Supplementary Information			
I/O capacity	smartRTU – FX3 CPU; 14 – 384 max SmartRTU – L CPU; 24 – 4096 max SmartRTU – Q CPU; 32 – 8192 max	Controllable I/Os			
Power Consumption	smartRTU – FX: 12 W smartRTU – L: 17 W smartRTU – Q: 14 W	16 digital I/O version (8xDI, 8xDO) 24 digital I/O version (16xDI, 8xDO) 32 digital I/O version (16xDI, 16xDO)			
Analog I/Os	Input: Output:	0-5 V; 0-10 V; -10 V-10 V; TC/RTD; 0/4-20 mA 0-5 V; 0-10 V; -10 V-10 V; 0/4-20 mA			
Digital I/Os	Input: Output:	Voltage: 24 V DC Transistor: sink or source (5 ~ 24 V DC), Relay (up to 240 V AC)			
Additional I/Os	Turbine meter counters (Input): Pulse output (Gate / Servo Positioning Modules):	<ul style="list-style-type: none"> <li>Signal levels = 5, 12, 24 V DC, differential line driver inputs</li> <li>Frequencies: 50 Hz – 200 kHz ranges available</li> <li>10 ~ 100,000 pulse/sec outputs</li> </ul>			
Communication channels	Cellular network (GPRS, EDGE) – Quad-Band 850 / 900 / 1800 / 1900 MHz)	<ul style="list-style-type: none"> <li>Via built-in cellular transmitter/receiver</li> <li>SMA antenna connector</li> <li>User-provided SIM Card with data contract / APN from local cellular network provider</li> </ul>			
	Ethernet (10/100 Mbps)	RJ45 connector to, for example, corporate WAN (IEEE 802.3), xDSL (ITU G.992.x) or PLC (Power Line Communication) WAN (IEEE 1901) ①			
	Serial	Via USB port plus USB / serial converter to an external Radio, PSTN or satellite modem			
Communication protocols (host-side)	DNP3 (IEEE 1815) IEC 60870-5-101 IEC 60870-5-104	Yes (Level 2 Slave) Yes (Slave) Yes (Slave)			
Communication protocols (field-side)	IEC 60870-5-104 IEC 61850 ②	Yes (Master) Yes (Client + Publisher/Subscriber for GOOSE)			
Time synchronisation	SNTP / NTP (or from DNP3 / IEC 60870-5 protocol)	Selectable from suitable (S)NTP server (GPS, GLONASS, Radio clock sourced) or via the DNP3 or IEC 60870 protocols			
Store and forward	Yes	<ul style="list-style-type: none"> <li>RTU samples and stores data locally when communication channel to SCADA host is interrupted and transmits this stored data when the channel is restored</li> <li>User configurable store and forward buffer size</li> </ul>			
Fieldbus support	Bus Technology	smartRTU – FX	smartRTU – L	smartRTU – Q	
	Profibus-DP	Master	X	X	X
		Slave	X		X
	Modbus/TCP	Master			X
		Slave			X
	Modbus/RTU (serial)	Master	X		X
		Slave	X		X
	DeviceNET	Master			X
		Slave	X		X
	CC-Link	Master	X	X	X
Slave		X	X	X	
CC-Link IE field	Master		X	X	
	Slave		X	X	
CANopen	Master	X			
	Slave	X			

① External router required  
② IEC 61850 available in next Version

For more information contact your local customer technology centre

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