

MultiSmart RTU

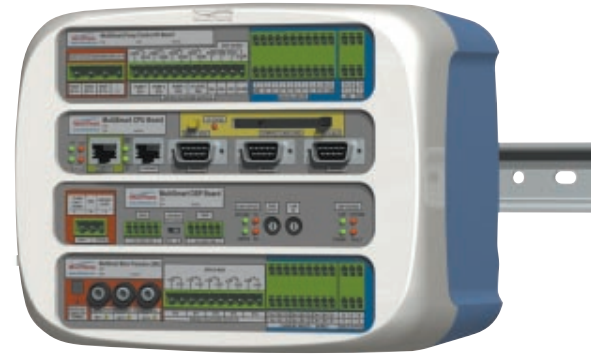
The MultiSmart RTU is a powerful and open RTU with specific water industry features. Upgrade possibilities include an advanced pump controller and user interface.

The unit is expandable from a few I/O up to 1000 I/O.

The RTU has specialised I/O not found on a generic RTU, making it an ideal RTU for the water and wastewater industry, even when the pump controller software is not selected:

- Seal and thermal pump fault inputs
- 3-phase supply monitoring
- Conductive level sensor inputs with adjustable conductivity settings
- CT inputs for motor current readings
- Insulation resistance test signal (1000v)
- DC supply voltage

The option of advanced pump controller software eliminates the ongoing costs that water authorities face in programming of RTU/PLCs, as well as simplifying the control panel by removing the need for indicator lights, selector switches and push buttons.



Processor Unit

Type Intel PXA255

Speed 200MHz

Flash memory 32MByte

RAM 64MByte

Real time clock Yes

Serial ports RS232 x 3, 115kBit/s

Ethernet port 10Mbit/s

Compact flash (for datalogging & software upgrades) Optional

RTU/communications

Protocols DNP3 level 2, Modbus

Media TCP, RS232, PSTN/GSM, GPRS/CDMA 1XRTT

Datalogging

- Change of state for digital, deadbanding for analog. Date/time and quality stamped.
- 50,000 events stored. Increases with compact flash option.

PLC specification

Programming capability IEC61131-3 (option)

Firmware/Application upgrade capability

Local

- Via serial or Ethernet from PC
- Via Compact Flash (option to standard RTU)

Remote Over any comms media, inbuilt failsafe protection.

I/O Standard modules

IO-3PC: General I/O (or Pump Control)

DIN x 20 DINx 20 configurable as digital input, counter, MultiTrode probe input, seal, thermistor, or FLS
Of these inputs:

- 3 of the DINs have additional CLS capability
- 2 of the DINs have additional high speed digital input capability
- 1 of the DINs has additional failsafe probe capability

DOUT x 7 DOUTx 4 isolated voltage free contacts
DOUTx 3 common voltage free contacts
All rated 240Vrms, 5A

AIN x 2 2x 4-20mA inputs, 10bits, 0.2% resolution

AOUT x1 1x 4-20mA outputs, 10bits, 0.2% resolution

VIN x3 3-phase mains voltage inputs, 0.5% resolution. Up to 630V phase to phase

IO-3MC: Motor Protection I/O board

IIN x9 3 sets x 3-phase current inputs, derived from CTs, 0.5% resolution

IRT 1000v x3 1000v dc to measure 0-20MOhm impedance on motor windings

DOUT x5 5x isolated voltage free contacts, rated 240Vrms, 5A

AOUT x3 3x 4-20mA output, 10bits, 0.2% resolution

Additional I/O boards available soon

Pump Control module and user-interface (option to RTU) *Requires IO-3PC*

User interface

- 320x240 backlit LCD screen with soft-keys

Operator user interface description

Variety of intuitive pump control screens, including:

- control for auto/manual/off
- next pump to start
- alternation status
- level display
- pump available
- hours run
- starts
- detailed fault information including date/time
- view similar faults, faults for pump, faults for well

Configuration user interface description

Variety of configuration screens, including:

- number of pumps, number of wells, alternation, groups
- Setpoints of start/stop, alarms, delays
- Level sensing device
- I/O and fault setup
- Station optimisation
- Motor protection and Insulation resistance test
- Communications
- Profiles
- Datalogger setup
- Flow setup

No. of pumps supported

- The software supports 3 pumps and is expandable up to 9 pumps with software and I/O upgrades
Note: more than 3 pumps requires additional I/O modules

No. of wells supported per controller

- 1-2

Functionality – Pump control & Station optimization

- Pump control from setpoints with duty/standby, alternation
- Pump groups for jockey pump/flood pump
- Level source, conductive sensor, 4-20mA, or ball floats
- Station optimisation: including max run time, max off time, blocked pump detection, max pumps to run, well washer control
- Profiles containing different setpoints, maximum pumps to run, etc – switchable on time or on event

Functionality - Protection

- Station protection for over-voltage, under-voltage and phase fail (3-phase supply measured)
- Pump fault inputs from variety of sources: thermal PTC thermistor, seal, FLS, CLS, voltage-free digital input
- Fault input configuration for each fault for lockout, auto-reset, auto-reset after timeout, or display only

Crisis module for fault events

- Sliding 10 second (adjustable) window with intensive datalogging, locked and stored when fault events occur for root cause analysis

Motor Protection Module (option to RTU)

Requires IO-3MP module for each 3x pumps

User interface

- Uses the pump controller 320x240 backlit LCD screen

Functionality - Protection

Pump protection for

- Under-current
- Over-current
- Phase-fail
- Ground (earth) fault
- Phase rotation
- Insulation resistance below user-defined threshold

Functionality – Measurement and reporting

- 3-phase voltage – station
- 3-phase currents – pump
- Insulation resistance value – pump

Additional functionality

- 1x DOUT default functionality for insulation resistance test for isolation contactor when soft-starter/VFD in circuit

Power measurement

- Measurement and reporting of: kW, VA, kWh and VAhr

Power Supply & Environmental

DC supply 11v-25v
(DC supply voltage is monitored to 5% accuracy)

Ambient Temperature -10°C to +60°C

Storage Temperature -40°C to +80°C

Humidity 5% to 95% non-condensing

Mains supply Option

Battery backup Option

Physical Product

Controller	Dimensions	H 173 x W 217 x D 159 (mm) H 6¾ x W 8½ x D 6¼ (in)
	IP Rating	IP20
Faceplate	Dimensions	H 144 x W 250 x D 42 (mm) H 5⅝ x W 9⅞ x D 1⅝ (in)
	IP/Nema	IP65 / Nema 12



RTU with optional display running pump controller module

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