

## GEMINI Remote Terminal Unit (G2-RTU)

This multi-purpose G2-RTU from Lucy Switchgear provides the essential telecontrol interface for any kind of pole or ground-mounted, medium voltage switchgear. Its modular design provides a cost effective and scalable solution, which enables the OEM switchgear marketplace to utilise its capabilities and add value to their own hardware products. By introducing remote monitoring, and control with bespoke, embedded automation sequencing (e.g. Auto-changeover and Auto-sectionalising schemes), the G2-RTU adds flexibility and versatility to any existing MV switchgear solution.



### Intelligence, control and forwards expandable

The G2-RTU is available in one, two, three or four switch control formats and supports 14 digital inputs (3 can be configured as analogue inputs) and 8 single digital outputs. As well as it being the interface for networked remote control, both open and close electrical operations can be performed locally, via a deliberate, select/ execute action with the front panel membrane push buttons for added safety. In addition, a dedicated expansion port allows for additional I/O requirements as well as integral FPIs and Power Module Interfaces. The G2-RTU can also be programmed with PLC type languages to implement customised automation sequencing.



### Flexible communications

As far as communication protocols are concerned, DNP3 and IEC 60870-5-101/104 are available as standard, whilst others can be supplied on request. In addition, the G2-RTU can support a host of different communications media - radio, RS232, RS485, Paknet, GSM, GPRS, PSTN, Bluetooth, optical fibre, TCP/IP and SMS messaging support.

### Auto-switching power supply

The power supply unit accepts AC inputs of 110 or 230VAC. This module also comprises an AC outlet for accessories such as laptop computers or communication devices and isolating switches for the AC and DC supplies provide independent control.

### Enhanced battery condition monitoring

The G2-RTU's improved battery back-up design enables it to operate under AC input failure conditions for up to 48 hours via a pair of 12 year life, 12V SLA batteries. The G2-RTU provides comprehensive and continuous battery condition monitoring facilities for maximum reliability.



# Specifications for GEMINI Remote Terminal Unit (G2-RTU)

GEMINI RTU		
General	Dimensions - Control Unit	H 344mm, W 201mm, D 86mm
	Dimensions - Expansion Module	H 188mm, W 88mm, D 86mm
	Dimensions - Power Supply	H 118mm, W 75mm, D 177mm
RTU Hardware	Processor Module	68000 Microprocessor
	Power Supply	110/ 230V AC supply
	Battery Type	2x12V DC, sealed lead acid batteries
	Battery Charger	Temperature compensated 50VA, fully protected
	Control Electronics	PIC based processor with expandable I <sup>2</sup> C bus
	Inner Enclosure	Stainless steel
Inputs/ Outputs	Ventilation	Microprocessor controlled, long life fan with baffle air intake filter
	Digital Inputs	14 isolated digital inputs - expandable
	Digital Outputs	8 isolated digital outputs - expandable
	Analogue Inputs	3 CT analogue inputs as standard (DIs reduced to 11)
	Expansion I/O Module	9 CT analogue inputs, 14 digital inputs, 2 digital outputs
Communications	Communication Interfaces	3 RS-232 for Control, Configuration, Programming and I <sup>2</sup> C Expansion Bus
	Protocols	DNP3, IEC 60870-5-101/104 & Modbus (others on request)
	Communication Media	RS-232/ 485, UHF/ VHF radio, Packet Data, GSM/ GPRS, PSTN, Leased or Twisted Pair Lines, Optical Fibre, Internet (TCP/IP) & Bluetooth
Switchgear Interface	Controls	Membrane push-button for Open/ Close operations in conjunction with Activate push-button up to four switching functions (standard 1, 2 or 4 switch control formats) Selector control for Off, Local or Remote modes
	Indications	RTU services such as DC/ AC supplies, Dummy Control and Debug LEDs Switch status LEDs for Open/ Closed positions Control Output LEDs (illuminates when active) Configurable LED indications
	Configuration	Windows based software for configuration of:
		<ul style="list-style-type: none"> <li>• Protocol parameters including device and I/O addresses</li> <li>• Parameters for the communications device</li> <li>• Parameters for digital, analogue and counter points</li> <li>• Automation sequences</li> <li>• Power saving routines</li> <li>• Battery tests</li> </ul>
Environmental Standards	Environmental (Atmospheric)	EN 60068-2-1 Temperature Cold Heat
		EN 60068-2-2 Temperature Dry Heat
		HD 323.2.30 S3 Relative Humidity
	Environmental (Mechanical)	IEC 60255-21-1 Vibration
		IEC 60255-21-2 Shock
		IEC 60255-21-2 Bump
Electrical	IEC 60255-21-3 Seismic	
	EN 50093 Voltage Dip Immunity Test	
	IEC 60950-1 Dielectric	
EMC Standards	IEC 60950-1 Impulse Voltage	
	EN 61000-4-12 Oscillatory Waves Immunity Test	
	EN 61000-4-2 Electrostatic Discharge Immunity Test	
	ENV 50140 Radiated Electromagnetic Field Disturbance Test	
	ENV 50204 Radiated Electromagnetic Fields From Digital Radio Telephones Immunity Test	
	EN 61000-4-4 Electrical Fast Transient/ Burst Immunity Test	
	EN 61000-4-5 Surge Immunity Test	
	ENV 50141 Conducted Electromagnetic Field Disturbance Tests	
EN 61000-4-16 Power Frequency Test		
EN 50081-2 Conducted and Radiated Emissions Test		

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