MD100m

Remote Telemetry Unit (RTU)

Industrial control solutions for critical infrastructure, designed and developed collaboratively.

We provide robust, adaptable building blocks that help clients design flexible distributed control systems. Our approach combines local service excellence across design, manufacturing, delivery and support. Long-term client partnerships drive product innovation and enable intelligent, automated and data-centric solutions.

Applications

MD100m range: flexible, scalable, and cost-efficient

The MD100m range offers a versatile, scalable, and economical solution designed to meet the needs of diverse applications and market segments. Its adaptable architecture enables organisations to adopt a standardised approach, simplifying complexity and reducing lifecycle costs. This results in an intuitive solution that is easier to engineer, operate, and maintain.

Potential use cases for the MD100m range include, but are not limited to:

Energy

- Substation automation
- Transmission and distribution networks
- Solar, BESS and wind farms

Water and wastewater

- Storage and distribution
- Pump stations | Treatment plants

Oil, Gas, Mining and Transportation industries

Secure communications

- Gateway or Protocol converter: IEC 61850, IEC 60870, DNP3, Modbus, MQTT + Sparkplug B (IIoT), SNMP.
- Remote access - 4G and LPWAN

Logic for individual use cases can be custom-developed or seamlessly ported from existing client solutions. This approach ensures the preservation of inherent intellectual property, providing our clients with tailored solutions while safeguarding their unique innovations.

Key features

- Modular and scalable, click together
- High-performance and power-efficient
- Small footprint of W 25mm x H 115mm x D 135mm (per module)
- Cybersecurity: hardened OS, firewall, authentication, cryptography, encryption, aligning with IEC 62443
- Application / solution flexibility IEC 61131-3 languages, distributed database, real-time SCL
- WebHMI (HTTPS)
- Open-source operating system provides abundant customisation capabilities
- Industry standard protocols
- Operating temp -20ºC to 75ºC
- Power range 24 – 125 V DC
- Conformal Coating (optional)
- Mounting: DIN rail NS 35/7.5
- Wiring: 5mm-pitch, up to 2.5mm2

Regulatory compliance

- Safety: IEC 61010-1, IEC 61010-2-201
- EMI: CISPR 32/EN55032 Class A
- EMC: IEC 61000.6.5 Interface type 4
- Power station, Substation environments: IEC 61000-4-2/4-3/4-4/4-5/4-6/4-8 IEC 61000-4-16/4-17/4-18/4-29

Physical platform

Assembly is easy, simply snap the DIN rail bus connectors together to form the backplane, then plug in the required modules. This concept also allows for individual module removal.

Minimal configuration

The base arrangement is a Processor and a Power Supply module, giving a footprint of just 50mm (W) on the DIN rail (2 modules).

Maximum configuration

The maximum configuration is the above plus ten modules, and the maximum number of analogue based modules does not exceed three due to power limitations.

Field wiring

To ease installation and maintenance effort, all terminal blocks are pluggable, so that field wiring can be completed in advance. This enables the replacement of modules without disruption to field wiring.

Communications architecture

The MD100m supports two Ethernet and three Serial ports that can be used to meet any number of different communications architectures.

Additional flexibility is provided by SFP based Ethernet allowing a choice of different physical transceivers (TX, T, FX or SX).

Control languages

Two options are supported: MDplc, CGI's IEC 61131-3 control language environment, and CGI's real-time Sequential Control Logic. These options can be used independently or integrated to leverage the advantages inherent in each environment.

MDplc (IEC 61131-3) - An environment that enables users to create local or distributed control systems. It offers a combination of a highly portable, robust control engine (embedded within the RTU) and an intuitive application development environment (Workbench) supporting all IEC 61131-3 control languages.

Sequential Control Logic (SCL) - Change of state processing coupled with CGI's real-time distributed database and Sequential Logic Control solution. At the heart of this system is the object-based model of plant where updates are performed following a change of state. The change of state processing can then trigger control logic or ripple changes to higher level objects. This approach simplifies control logic via pre-processed object data and optimizes performance.

Modules

Available MD100m modules include:

Power Supply
- 24 to 125 V DC range or
- 12 to 24 V DC range
- 20 Watt

Processor
- ARM Cortex A5
- 2 x SFP Ethernet ports
- 3 x Serial (1 x RS485, 2 x RS232)
- Console and USB port
- 4 x Digital Inputs
- Micro SD card (optional)

4G Modem
- Serial RS232 (RJ45) input
- CAT M1 or CAT 1

Digital Input
- 16 Channel
- Range 0 – 125 V DC
- Max current <2mA
- Input threshold 36 V (default)

Digital Output
- 16 Channel (solid-state)
- Rated voltages up to 125 V DC
- Rated current 300mA continuous

Mixed Digital Input / Output
- 8 Input Channels (as above)
- 8 Output Channels (as above)

Analogue Input
- 8 Channel
- ±10V, 0-10V, ±5V, 0-5V
- 0-20mA, 4-20mA, 0-10mA, ±10mA
- RTD 100Ω, 1000Ω, 2, 3 or 4-wire
- Thermocouples J, K, T and S type

Analogue Output
- 8 Channel
- ±10V, 0-10V, ±5V, 0-5V
- 0-20mA, 4-20mA, 0-10mA

Mixed Analogue Input / Output
- 5 Input Channels (as above)
- 3 Output Channels (as above)

CGI works collaboratively with our clients and is committed to the continuous improvement of the design and performance of CGI's products. While every effort is made to ensure the information provided in this brochure is accurate, specifications are subject to change without notice.

For more information

Visit cgi.com/au

Email us at sales.aus@cgi.com