

# Multilin™ D.20 RIO

## Distributed I/O Controller

Utilities have large investments in hard wired automation systems. Like everything else, this industrial equipment has a life cycle that moves from infancy to normal operation, and eventually to the wear out stages. As a piece of equipment ages it fails more frequently, takes longer to repair, and eventually reaches the end of its life. Re-design and forklift replacements require utilities to re-engineer substation designs, replace field wiring, and re-train staff to manage and maintain the system, which is a costly endeavor.

GE helps customers address these upgrade challenges with its Multilin D.20 RIO. The Multilin D.20 RIO Distributed I/O Controller is a stand-alone, small form factor device designed to provide distributed I/O capabilities for easy connection to the Multilin D400 substation automation gateway through the substation LAN. The D.20 RIO provides an interface to GE's Multilin D20 Series of I/O modules for a cost effective upgrade solution.

### Key Benefits

- Reduced copper wiring between I/O modules and substation controllers by adding I/O near the monitored device and communicating to the Multilin D400 over the substation LAN
- Easy installation of the small form factor D.20 RIO into existing control panels
- Cost effective deployment of new and retrofit substation automation projects through compatibility of Multilin D400 Substation Gateways and Multilin D20 Input / Output peripheral modules

### Applications

- The D20 module interface enables users to maintain and leverage existing engineering designs, processes and automation infrastructure
- Simplify implementation of distributed substation automation architectures by installing I/O where it's needed and reducing copper wiring between I/O and substation controller



## Cost Effective D20 Upgrade

- Cyber security features for integration into NERC® CIP environments
- Secure real time browser access
- Browser-based HMI interface
- Secure remote engineering access
- IEC® 61850 capabilities
- Automatic record retrieval (fault records, SOE, settings files, any other file available in the IED)

## Ease of Use

- No special configuration tools are required, the device is connected via Ethernet using a standard web browser
- The Multilin D400 automatically detects the D.20 RIO and establishes communications with the D20 modules
- Intuitive user interface integrates the D20 I/O modules within minutes
- Compatible with v3.X series of the D20 I/O PCommon code
- No Substation LAN? No problem. Connect the D.20 RIO to the built in D400 Ethernet switch

## Flexible Hardware

- Product supplied with accessories for multiple mounting options (19" rack, DIN Rail, panel mount)
- Support for dual D.20 communication links
- Jumper configurable option for internal or external wetting of D20 peripherals



## Cost Effective D20 RTU Upgrade Solution

The Multilin D.20 RIO option with support for D.20 communications provides a cost effective alternative to upgrades of legacy D20 RTUs. Simply replace the failed or end of life Multilin D20 unit with a Multilin D400 Gateway and D.20 RIO module, plug the D.20 interface cable into the D.20 RIO, connect the D.20 RIO to the D400 or an Ethernet port in the substation LAN and you are ready to add modern functionality to the Multilin D400 series of Substation Gateways including:

- Cyber security features for integration into NERC® CIP environments
- Secure real time browser access
- Browser-based HMI interface
- Secure remote engineering access
- IEC® 61850 capabilities
- Automatic record retrieval (fault records, SOE, settings files, any other file available in the IED)

## Remote I/O Where You Need It

The Multilin D.20 RIO Distributed I/O Controller is a small form factor stand-alone device that supports two D.20 link channels for communication with the D20 series of input/output modules.

- Interface with standard D20 I/O (status, analog input, control and combination input) peripheral modules
- Support for up to 30 I/O modules in a single D.20 RIO, or distributed over up to four D.20 RIO devices within the substation
- Small form factor with multiple mounting options for installation flexibility: 19" Rack, panel mount or DIN Rail

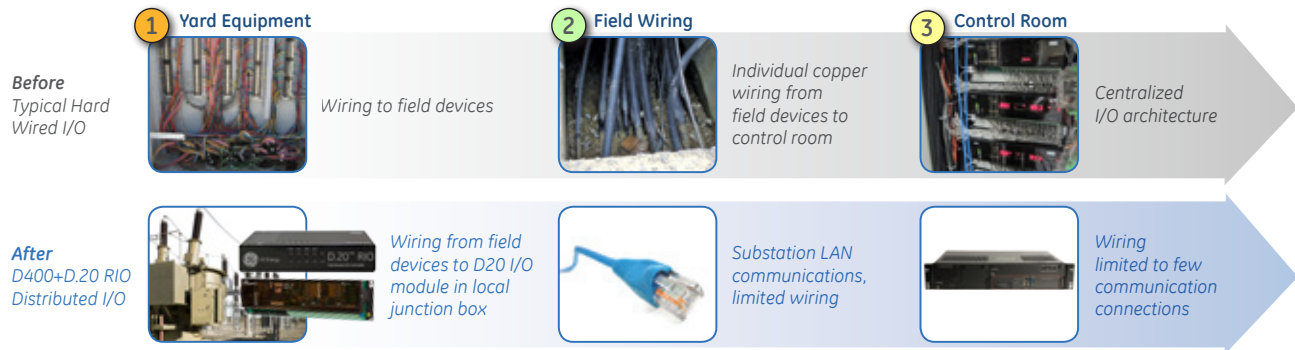
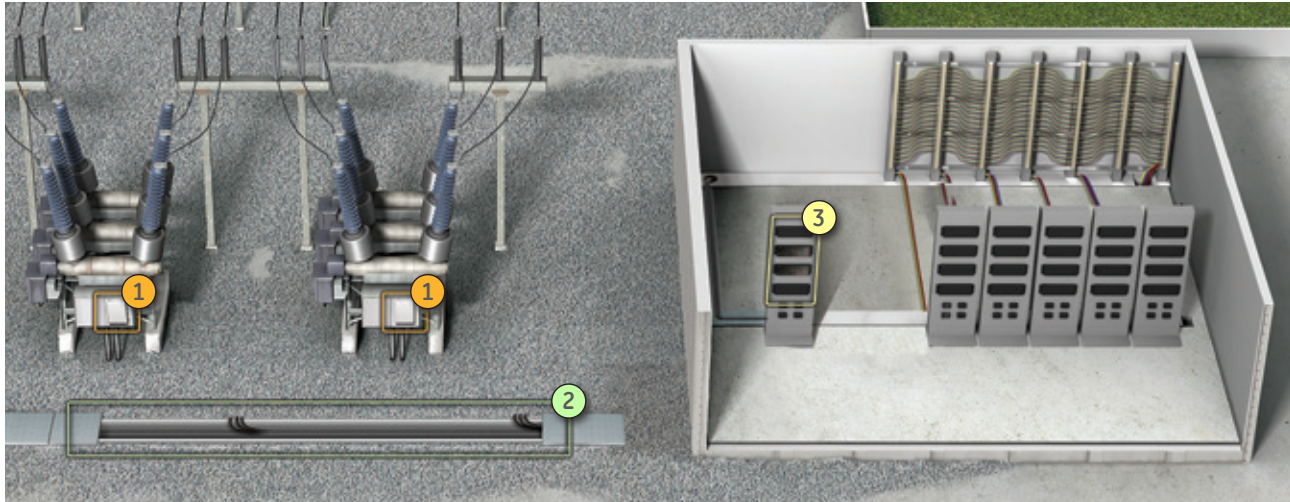
Use the Multilin D.20 RIO module to install input/output modules in the substation LAN. No substation LAN? No problem, connect the optional D.20 RIO device directly to the built-in D400 Ethernet switch.

## D.20 RTU Upgrade Process



INSTALLATION COST		
Modify field wiring	Yes	Not required
Modify engineering drawings	Yes	Not required
Building expansion	May be required	Not required
Marshaling panels	May be required	Not required
Outages	Yes	Minimal
ADVANCED FUNCTIONALITY		
Advanced automation	?	✓
Cyber security features	?	✓
Optimized configuration methods	?	✓
Non-operational data management tools	?	✓

I/O Where You Need It, Minimizing Wiring Costs



Technical Specifications

COMMUNICATIONS

2 x 10/100 Base T Ethernet Channels  
2 x D.20 link channels

POWER INPUT

D.20 RIO Unit: 22-55 VDC  
24 VDC Output Power Supply Option: 85-264 VAC or 90-350 VDC  
48 VDC Output Power Supply Option: 85-264 VAC or 90-350 VDC

DIMENSIONS

220 W x 146 D x 43.5 H (mm)  
8.66 W x 5.75 D x 1.71 H (inches)

MOUNTING OPTIONS

Supplied with required accessories for:  
19" rack mount, 54.5 mm DIN Rail or panel mount

ENVIRONMENTAL

Indoor use only  
-40°C to 70°C, 5 to 95% RH

RELIABILITY

158,000 hours MTBF at 40C per MIL-217F

CONFIGURATION SOFTWARE

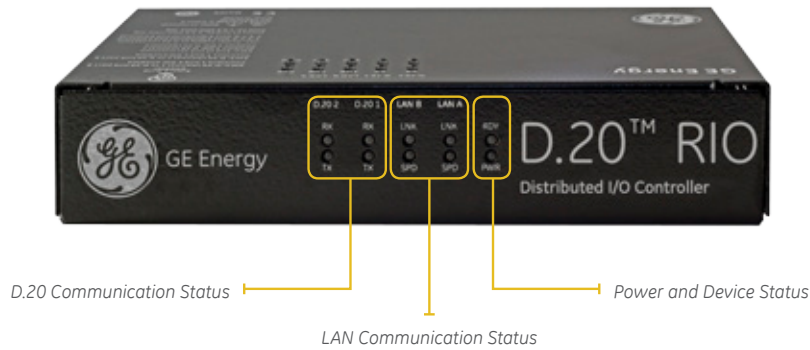
Built-in web browser based graphical user interface

OTHER

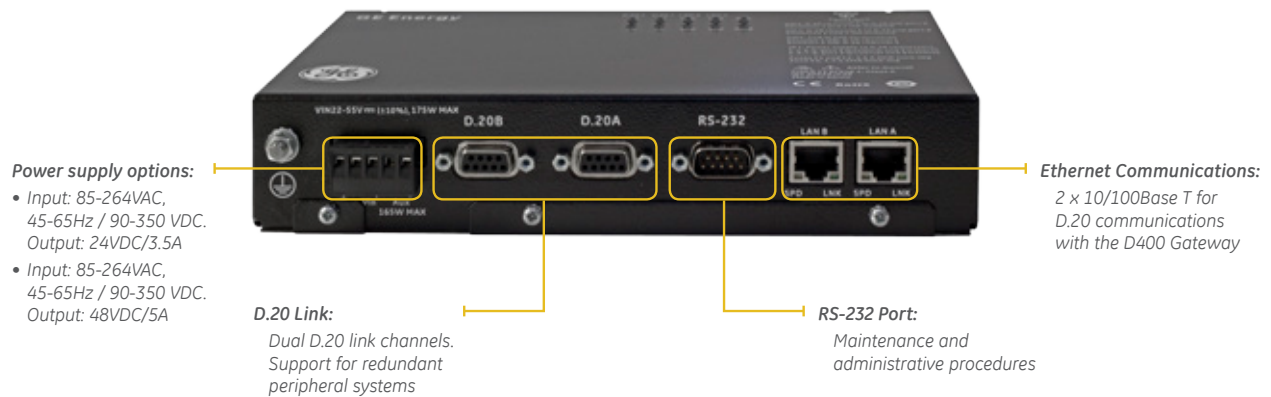
Up to four (4) Multilin D.20 RIO units per D400 unit  
Maximum number of D20 I/O modules per D.20 RIO: up to 30  
Powered from D.20 RIO: 5 D20 I/O modules. For systems with more than 5 I/O modules, external power supply is required.

## User Interface

### Front Panel



### Back Panel



## Ordering

### DPDA000029:

Multilin D.20 RIO, Power Input: 85 to 264 VAC, 45 to 65 Hz., or 90 to 350 VDC. Output: 24 VDC / 3.5 A

### DPDA000030:

Multilin D.20 RIO, Power Input: 85 to 264 VAC, 45 to 65 Hz., or 90 to 350 VDC. Output: 48 VDC / 5.0 A

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