



EXCLUSIVE



SUBSTATION



DIN RAIL



-40° TO +85°



FLEXIBILITY



CONVERTER



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The ComNet RLMC Series is a substation-rated and industrially hardened Ethernet media converter. Designed to the requirements of IEC 61850-3, IEEE 1613 Class 2, EN50155, and NEMA TS-1/TS-2, it is intended for deployment in environments where high levels of electromagnetic noise and interference (EMI) and severe voltage transients and surges are routinely encountered, such as electrical utility substations and switchyards, heavy manufacturing facilities, trackside and roadside electronic equipment, and other difficult out-of-plant applications. The DIP-switch-selectable 100BASE-FX or 1000BASE-FX port supports optical transmission media with selection of the appropriate ComNet SFP* module. User-selectable link fault pass-through provides remote indication of a network fault, and a summary fault alarm provides a local or remote indication via a dry contact closure in the event of loss of optical link or operating power. The 10/100/1000BASE-TX port supports both auto-negotiation and automatic MDI/MDI-X crossover for full and half-duplex operation; manual MDI/MDI-X switching is not required.

The internal/self-contained 12 to 24 VDC or 48 VDC power supply features redundant power inputs for the highest possible reliability. A high voltage AC/DC option is also available. The simple to install, plug-and-play RLMCSFP is DIN-rail or panel-mountable, and is ideal for mission-critical applications where very high levels of reliability and network availability are of the utmost importance.

FEATURES

- › Full duplex transmission of 10/100/1000 Mbps Ethernet:
 - (1) 10/100/1000BASE-TX port and
 - (1) 100BASE-FX or 1000BASE-FX optical port
- › Designed to the requirements of IEC 61850-3 and IEEE 1613 Class 2 for electrical utility substations, EN50155 and EN50121-4 for railway applications, and NEMA TS-1/TS-2 for traffic signal control equipment, and IEC/EN60950-1
- › Extended ambient operating temperature range of -40° to +85° C, for use in virtually any environment. Optional conformal coating available for humidity with condensation or airborne particulate matter environments
- › Uses customer-installed ComNet SFPs for compatibility with a wide range of optical fiber, optical connector types, and optical transmission distances of up to 120 km
- › Link fault pass-through provides a remote indication of a network fault
- › 10/100/1000BASE-TX port supports both auto-negotiation and automatic MDI/MDI-X crossover for full and half-duplex operation; manual MDI/MDI-X switching is not required
- › 12 to 24 VDC, 48 VDC or HV AC/DC (88 to 300 VDC/85-264 VAC) operating power options
- › Internal/self-contained high-reliability power supply eliminates the need for an external power supply, and a screw terminal block connects directly to the power source for permanent, reliable, and maintenance-free operation
- › 12 to 24VDC and 48 VDC input power supply versions feature redundant power inputs, for extremely high levels of reliability and availability
- › No fans or forced-air cooling required; cooling via natural convection eliminates unreliable and troublesome fans/moving parts for improved reliability
- › Indicating LEDs confirm operating status of the media converter and the link for ease in troubleshooting

- › Summary fault alarm provides a local or remote indication via a dry contact closure in the event of loss of optical link or operating power
- › Rugged 19-gauge galvanized & powder-coated steel enclosure may be DIN-rail or panel-mounted
- › Made in the USA
- › Lifetime Warranty

APPLICATIONS

- › Electrical substation automation & SCADA networks, protective relaying systems, and distribution automation
- › Power transmission & distribution systems, remote wind farm, hydroelectric, and solar/photovoltaic power generation facilities, and other electrical utility-specific applications
- › Perimeter security, surveillance monitoring, and controlled access to electrical substations and power generating facilities, and other high-value, mission-critical sites
- › Industrial/Factory Automation & Process Control SCADA Networks
- › Chemical and petrochemical refining and processing facilities, oil and gas pipelines/transmission systems, and mining installations
- › Food processing operations
- › Wastewater treatment plants
- › ITS/Transportation Traffic Signalization & Surveillance/Incident Detection Networks
- › Railway/trackside control and monitoring systems
- › Integrated IP-Video, VOIP, and Data Transmission Networks
- › Cellular telephony and wireless backhaul networks

* SFP = Small Form-Factor Pluggable Module

SPECIFICATIONS

Data

Compliance	IEEE 802.3 IEEE 802.3ab IEEE802.3z IEEE 802.3u
Ethernet Data Interface	Electrical: 10/100/1000BASE-TX, half or full-duplex. Optical: 100BASE-FX or 1000BASE-FX, full-duplex

Fiber Connectors¹

Requires selection of sold-separately SFP modules. See ComNet data sheet for number, description, and compatibility of SFP modules

Connectors

Power	4-Position Screw Terminal Block
Ethernet	RJ-45
Optical	SFP pluggable optics SFP Models require selection of sold-separately SFP modules. See ComNet data sheet for number, description, and compatibility of SFP modules.
Fault Relay	3-Position Screw Terminal Block

Summary Fault Alarm

Form C contacts for local or remote indication of loss of operating power, or loss of optical link

Relay Contacts: Rated at 110 VDC @ 0.25A, non-inductive load; or 125 VAC @ 0.3A, non-inductive load

Power

Power Consumption	5 W (max)
12 to 24DC models	9 to 36 VDC (max)
48DC models	36 to 59 VDC (max)
HV AC/DC models	88 to 300 VDC, or 85 to 264 VAC (max)
12 to 24 VDC & 48 VDC versions feature redundant and floating DC inputs, for use in positive or negative grounding arrangements	
Current Protection	Automatic Resettable Solid-State Current Limiters

Mechanical

Indicator LEDs	- Operating Power - SFP Throughput Rate: 100FX or 1000FX - Fault - Optical Link/Activity
Housing Mounting	19-Gauge galvanized steel, power-coated finish Standard DIN-Rail or panel-mount. Panel-mounting adapter included.
Ingress Protection	IP-30 Rated
Housing Dimensions	4.3 × 2.3 × 3.7 in (10.9 × 5.8 × 9.4 cm)
Weight (unpacked)	1.5lbs (0.68kg)
Circuit Board	Meets IPC standards

Environmental

MTBF	>250,000 hours
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Operating Humidity	5% to 95% (Non-condensing) ²

Applicable EMI Immunity and Environmental Standards

IEC 61850-3 for Electrical Utility Substations
IEEE 1613, Class 2 for Electrical Utility Substations
EN50155 for Railway Applications
EN50121-4 for Railway Applications
NEMA TS-1/TS-2 For Traffic Signal Control Equipment

[1] Multimode fiber needs to meet or exceed fiber standard ITU-T G.651.
Single mode fiber needs to meet or exceed fiber standard ITU-T G.652



ORDERING INFORMATION - SFP MODELS

Part Number	Description
RLMCSFP/24DC	Electrical Substation-Rated 10/100/1000 Mbps Media Converter, redundant 12 to 24 VDC inputs, SFP Optical Port
RLMCSFP/48DC	Electrical Substation-Rated 10/100/1000 Mbps Media Converter, redundant 48 VDC inputs, SFP Optical Port
RLMCSFP/HV	Electrical Substation-Rated 10/100/1000 Mbps Media Converter, 85 to 264 VAC / 88 to 300 VDC input, SFP Optical Port
Options	User selection of ComNet SFP (Extra charge, see SFP Modules data sheet for product numbers and compatibility before ordering) [2] Add suffix '/C' for Conformally Coated Circuit Boards to extend to humidity-with-condensation and airborne particulate matter environments conditions (Extra charge, consult factory)

Note: In a continuing effort to improve and advance technology, product specifications are subject to change without notice.

OUTLINE AND INSTALLATION DRAWING

