



The ComNet RLMCSFP series is a substation-rated and industrially hardened Ethernet media converter that optionally supports Universal PoE (Power over Ethernet) powered devices requiring up to 60 watts of operating power. 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 simple to install, plug-and-play RLMCSFP series is DIN-rail or panel-mountable, and is ideal for mission-critical PoE applications where very high levels of reliability and network availability are of the utmost importance.

## FEATURES

- › RLMCSFPPOEHO Supports PoE PDs (Powered Devices) requiring 15, 30, or 60 watt PoE operating power
- › 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 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
- › 48 VDC operating power
- › 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
- › Features 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

- › For supporting NERC-CIP-014 compliance, and other critical infrastructure physical security applications where PoE-powered IP video cameras, access control equipment, perimeter security sensing devices, etc., are utilized
- › 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
- › 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 Connectors<sup>1</sup>

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)
POEHO model	44 to 57 VDC (max)
12 - 24 VDC, 48 VDC, and POEHO models feature redundant and floating DC inputs, for use in positive or negative grounding arrangements	
HV AC/DC models	88 to 300 VDC, or 85 to 264 VAC (max)
Current Protection	Automatic Resettable Solid-State Current Limiters

### Mechanical

Indicator LEDs	- Operating Power - SFP Throughput Rate: 100FX or 1000FX - Fault - Optical Link/Activity - PoE (POEHO model only)
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)	1.5 lbs / 0.68 kg
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) <sup>2</sup>

### 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

AGENCY COMPLIANCE



## 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
RLMCSFPPOEHO	Electrical Substation-Rated 10/100/1000 Mbps Media Converter, redundant 48 VDC inputs, SFP Optical Port, 60 W Universal PoE++
Options	User selection of ComNet SFP (Extra charge, see SFP Modules data sheet for product numbers and compatibility before ordering) 48 VDC DIN-Rail Power Supply for PoE Models only (Extra charge, consult factory) [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

