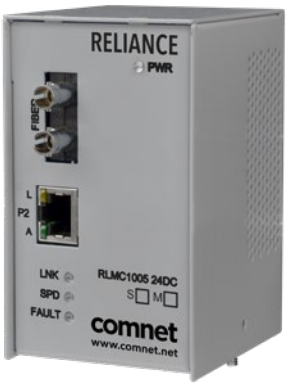
Electrical Substation-Rated 10/100 Mbps Ethernet Electrical To Optical Media Converter

RLMC100X(M,S)2



EXCLUSIVE | SUBSTATION | DIN RAIL | -40° TO +85° | CONVERTER | 1



The ComNet RLMC100X 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 100BASE-FX port supports conventional optical transmission media by fixed 2-fiber ST or SC optical connectors. 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 10/100BASE-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 RLMC100X(M,S)2 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 Mbps Ethernet:
(1) 10/100BASE-TX port and
(1) 100BASE-FX 2 Fiber 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

› Link fault pass-through provides a remote indication of a network fault

› 10/100BASE-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 24 VDC 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

› Indicator 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

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SPECIFICATIONS

Data

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

Connectors

Optical	2 Fiber ST or SC, 1310 nm wavelength
Power	4-Position Screw Terminal Block
Ethernet	RJ45
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 - Fault - Optical Link/Activity
Housing	19-Gauge galvanized steel, power-coated finish
Ingress Protection Rating	IP-30
Mounting	Standard DIN-Rail or panel-mount. Panel-mounting adapter included.
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)[1]

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

AGENCY COMPLIANCE FC PART 15 COMPLIANT CE c UL us RoHS

MADE IN THE USA

ORDERING INFORMATION

Part Number	Description	Fiber	Optical Pwr Budget	Max Distance
RLMC1005M2/24DC	Substation-Rated 10/100 Mbps Ethernet, ST, redundant 12 to 24 VDC inputs	Multimode	10 dB	3 km (2 mi)
RLMC1005S2/24DC	Substation-Rated 10/100 Mbps Ethernet, ST, redundant 12 to 24 VDC inputs	Singlemode	15 dB	20 km (12 mi)
RLMC1005M2/48DC	Substation-Rated 10/100 Mbps Ethernet, ST, redundant 36 to 59 VDC inputs	Multimode	10 dB	3 km (2 mi)
RLMC1005S2/48DC	Substation-Rated 10/100 Mbps Ethernet, ST, redundant 36 to 59 VDC inputs	Singlemode	15 dB	20 km (12 mi)
RLMC1005M2/HV	Substation-Rated 10/100 Mbps Ethernet, ST, redundant 88 to 300 VDC, or 85 to 264 VAC inputs	Multimode	10 dB	3 km (2 mi)
RLMC1005S2/HV	Substation-Rated 10/100 Mbps Ethernet, ST, redundant 88 to 300 VDC, or 85 to 264 VAC inputs	Singlemode	15 dB	20 km (12 mi)
RLMC1003M2/24DC	Substation-Rated 10/100 Mbps Ethernet, SC, redundant 12 to 24 VDC inputs	Multimode	10 dB	3 km (2 mi)
RLMC1003S2/24DC	Substation-Rated 10/100 Mbps Ethernet, SC, redundant 12 to 24 VDC inputs	Singlemode	15 dB	20 km (12 mi)
RLMC1003M2/48DC	Substation-Rated 10/100 Mbps Ethernet, SC, redundant 36 to 59 VDC inputs	Multimode	10 dB	3 km (2 mi)
RLMC1003S2/48DC	Substation-Rated 10/100 Mbps Ethernet, SC, redundant 36 to 59 VDC inputs	Singlemode	15 dB	20 km (12 mi)
RLMC1003M2/HV	Substation-Rated 10/100 Mbps Ethernet, SC, redundant 88 to 300 VDC, or 85 to 264 VAC inputs	Multimode	10 dB	3 km (2 mi)
RLMC1003S2/HV	Substation-Rated 10/100 Mbps Ethernet, SC, redundant 88 to 300 VDC, or 85 to 264 VAC inputs	Singlemode	15 dB	20 km (12 mi)
Options	[1] Add suffix '/C' for Conformally Coated Circuit Boards to extend to condensation conditions (Extra charge, consult factory) Add '/HP' for 24 dB Optical Power Budget and 60 km Max Distance			

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

Low Power Consumption

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