По вопросам продаж и поддержки обращайтесь:

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Единый адрес: rno@nt-rt.ru **Веб-сайт:** www.redlion.nt-rt.ru

Каталог продукции RED LION

100-POE4 Industrial PoE

N-Tron Networking Series

▶▶▶ Industrial Mid-Span PoE Injector

Red Lion's N-Tron 100-POE4 industrial mid-span PoE injector is designed to transmit data over an Ethernet network.

Ideal for powering PoE capable devices running on AC power feed is not possible or cost effective. PoE allows an end user to power a PoE camera, wireless access point, or any other PoE capable device without the need for running separate wires for power. This also allows the ability for a centralized battery backup for all these devices.

APPLICATIONS

- Security Surveillance
- Factory Automation
- SCADA
- Transportation
- Utilities
- Alternative Energy

PRODUCT HIGHLIGHTS

- Compact, Industrial Design
- Up to 8 port connections
- High Environmental Specifications
- Auto-Detection of Connected PoE Devices
- Increased Networking Performance
- Plug-and-Play Operation

FEATURES & BENEFITS

- Compact, Space Saving Package
- Full IEEE 802.3af Compliance
- Supports the following ports:
  - 4-port 10/100BaseTX RJ45 Ports (Data In)
  - 4-port 10/100BaseTX RJ45 PoE Ports (Data & Power Out)
- Unmanaged Operation
- Extended Environmental Specifications
  - -40ºC to 85º Operating Temperature
  - >2M Hours MTBF
- Automatic Detection of Connected PoE Devices
- Up to 0.8 Gb/s Maximum Throughput
- Full Wire Speed Communications
- Supports 15.4 Watts per port (13 Watts at the PD)
- Redundant Power Inputs (46-49 VDC)
- Power Fault Status LED
- LED PoE Status Indication
- Hardened Metal DIN-Rail Enclosure

industrial networking

RoHS compliant

Industrial Mid-Span PoE Injector Specifications

SWITCH PROPERTIES
Operation: Unmanaged
IEEE Compliant: 802.3af
Up to 0.8 Gb/s Maximum Throughput
Full Wire Speed Communications
Supports 15.4 Watts per port (13 Watts at the PD)
Power Fault Status LED
LED PoE Status Indication
MTBF: >2m hours

POWER INPUT
Input Voltage: 46-49 VDC
Steady Input Current Under Full Load: 1.6 A@48V
Steady Input Current Under No Load: 30mA@48V
BTU/hr: 262.1@48VDC and under full load
Inrush: 27Amp/1.5ms@48V

CONNECTORS
10/100BaseTX: Eight (8) RJ45 copper ports
Four 10/100BaseTX RJ-45 Ports (Data In)
Four 10/100BaseTX RJ-45 PoE Ports (Data & Power Out)

NETWORK MEDIA
10BaseT: >Cat3 cable
100BaseTX: >Cat5 cable

RECOMMENDED WIRING CLEARANCE
Front: 2" (5.08 cm)
Top: 1" (2.54 cm)

CERTIFICATION & COMPLIANCE
Product Safety: UL/cUL: Class I, Division 2, Groups A, B, C and D; T4 UL 508, ICE and ANSI/ISA-12.12.01-2007
Emissions: EN 55011, ICES-003, FCC/CE (CFR 47, Part 15, Subpart B, Class A)
Immunity: EN 61000-6-2/4, IEC 61000-4-2/3/4/5/6
Other: ABS type approval for shipboard applications
DNV Type Approval Certification
RoHS Compliant
IEEE 1613 for Electric Utility Substations
NEMA TS1/TS2 for Traffic Control
American Bureau of Shipping (ABS) Type Approval
EN50155 for Railway applications

ENVIRONMENTAL
Operating Temperature: -40°C to 85°C
Storage Temperature: -40°C to 85°C
Operating Humidity: 10% to 95%(Non Condensing)
Operating Altitude: 0 to 10,000 ft.

MECHANICAL
Case Dimensions
Height: 3.5" (8.9 cm)
Width: 1.5" (3.8 cm)
Depth: 3.6 (9.0 cm)
Weight: 0.70 lbs. (0.32 kg)
Mount: DIN Rail 35mm

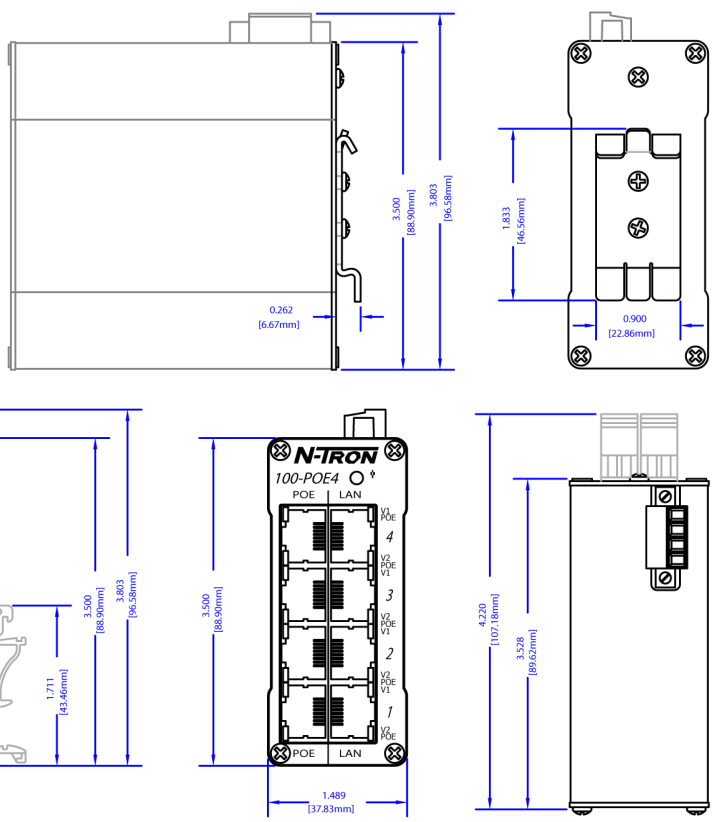
All specifications are subject to change. Consult the company website for more information.

ORDERING GUIDE

PART NUMBER	DESCRIPTION
100-POE4	Four Pair 10/100BaseTX Ports; 4 RJ45 in and Four RJ45 with POE out
100-MDR-2	Metal Din Rail Option*
NTPS-48-2	DIN-Rail Power Supply 48V@2 Amp

*MDR option must be specified with switch order - not field upgradable

DIMENSIONS



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Connect. Monitor. Control.

1000-POE4+ Gigabit Midspan Injector

N-Tron Networking Series

▶▶▶ Industrial Unmanaged Gigabit PoE+

Red Lion's N-Tron® series 1000-POE4+ Gigabit PoE+ midspan injector simplifies network deployments by providing a robust solution for transmitting power and data to industrial network assets.

With 4 10/100/100BaseT(X) RJ45 ports (data in) and 4 10/100/1000BaseT(X) RJ45 PoE+ ports (data and power out) that support 30 watts per port, the 1000-POE4+ Gigabit PoE+ injector combines Gigabit data communications and power over a single Ethernet network cable. Ideal for deployment in security and surveillance, oil and gas, transportation, utilities and factory automation applications, the 1000-POE4+ injector provides auto-sensing plug-and-play performance for four PoE+ devices such as video cameras, IP phones and wireless access points.

APPLICATIONS

> Security & Surveillance
> Oil & Gas
> Transportation
> Utilities
> Alternative Energy
> Factory Automation

PRODUCT HIGHLIGHTS

> Plug-and-Play Operation
> IEEE 802.3af/at PoE+
> Compact Size with Hardened Metal Enclosure
> Wide -40° to 85°C Operating Temperature
> Redundant 22 to 49 VDC Power Inputs

FEATURES & BENEFITS

> 4 Gigabit PoE+ Ports
  - 10/100/1000Base-T(X) PoE+ copper ports
  - Provides Gigabit connectivity and 30 watts of power
> Redundant 22 to 49 VDC Power Inputs
  - Keeps network running in the event of a power supply failure
  - Boosts power to meet PoE+ output requirements
> Robust Industrial Design
  - Wide -40° to 85°C operating temperature range
  - UL/cUL: Class I, Division 2 Groups A, B, C, D, T4
  - American Bureau of Shipping (ABS) type approval
  - IEEE 1613 for electric utility substations
  - Ultra-reliable > 2 million hours MTBF
> Unmanaged Switch Operation
  - Plug-and-play operation
  - Jumbo frame support
  - Full IEEE 802.3af/at compliance
  - Up to 8 Gb/s maximum throughput
  - Full wire speed communications

industrial networking

LISTED 65SN

RoHS compliant

▶▶▶ 1000-POE4+ Gigabit POE+ Midspan Injector Specifications

SWITCH PROPERTIES
Operation: Unmanaged
IEEE Compliance: 802.3af/at
LED Status Indicators
Maximum Throughput: Up to 8 Gb/s
Communications: Full Wire Speed
MTBF: >2 million hours

POWER INPUT
Input Voltage Range: Dual 22-49 VDC power inputs
Steady Input Current (Full Load): 5.25 A @ 24 VDC
Steady Input Current (No Load): 280mA @ 24 VDC
Inrush: 59.9 A / 60us @ 24 VDC
BTU/HR: 50

POWER OVER ETHERNET
PoE Standard: IEEE 802.3af/at Gigabit mid-span PSE
PoE Output Power: 57 VDC / 30 W (25.5 W at PD) per port
Power Pin Assignment: Pins 1/2 (+), Pins 3/6 (-)
PSE Type: Type 2

CONNETCTORS
10/100/1000Base-T: Eight (8) RJ-45 ports
Data In: Four (4) 10/100/1000Base-T ports
Data/PoE Out: Four (4) 10/100/1000Base-T ports

NETWORK MEDIA
10BaseT: ≥ Cat3 cable
100BaseTX: ≥ Cat5 cable
1000Base-T: ≥ Cat5e cable
802.3af (802.3at Type 1) PoE: ≥ Cat3 cable
802.3at Type 2 PoE+: ≥ Cat5 cable

RECOMMENDED WIRING CLEARANCE
Front: 2” (5.08 cm)
Top: 1” (2.54 cm)

ENVIRONMENTAL
Operating Temperature: -40°C to 85°C
Storage Temperature: -40°C to 85°C
Operating Humidity: 10% to 95% (non condensing)
Operating Altitude: 0 to 10,000 ft.
Shock: 200 g @ 10 ms (bulkhead mounted)
Vibration/Seismic: 50 g, 5-200 Hz, triaxial (bulkhead mounted)

CERTIFICATION & COMPLIANCE
Product Safety: ANSI/ISA 12.12.01-2015 Class I and II, Div. 2 and Class III, Div. 1 and 2, Groups A, B, C and D Hazardous Locations, T4
UL508 Industrial Control Equipment
CAN/CSA-C22.2 No. 213-15, Hazardous Locations
CAN/CSA-C22.2 No. 14-13, Industrial Control Equipment
Emissions: FCC Title 47, Part 15, Radio Frequency Devices, Subpart B, ANSI C63.4-2009; Industry Canada ICES-003, EN 55032, EN 61000-3-2, EN61000-3-3
Immunity: EN 55024, EN 61000-6-2, EN 61000-4-2 (ESD); EN 61000-4-3 (RFAM); EN 61000-4-4 (EFT); EN 61000-4-5 (SURGE); EN 61000-4-6 (RFCM); EN 61000-4-8 (PFMF); EN 61000-4-11 (VDI)
Rail: EN 50155, EN 50121 and EN 61373
Designed to Comply with: IEEE 1613 (Electric Utility Substations), NEMA TS1/TS2 (Traffic Control)
Other: ABS Type Approval for Shipboard Applications; EMC Directive 2014/30/EU; LV Directive 2014/35/EU GOST-R, RoHS Compliant

MECHANICAL
Case Dimensions:
Height: 5.9” (15 cm)
Width: 2.0” (5.1 cm)
Depth: 5.9” (15 cm)
Weight: 1.45 lbs (0.66 kg)
Ingress Protection: IP20
Mount: DIN rail (35 mm)

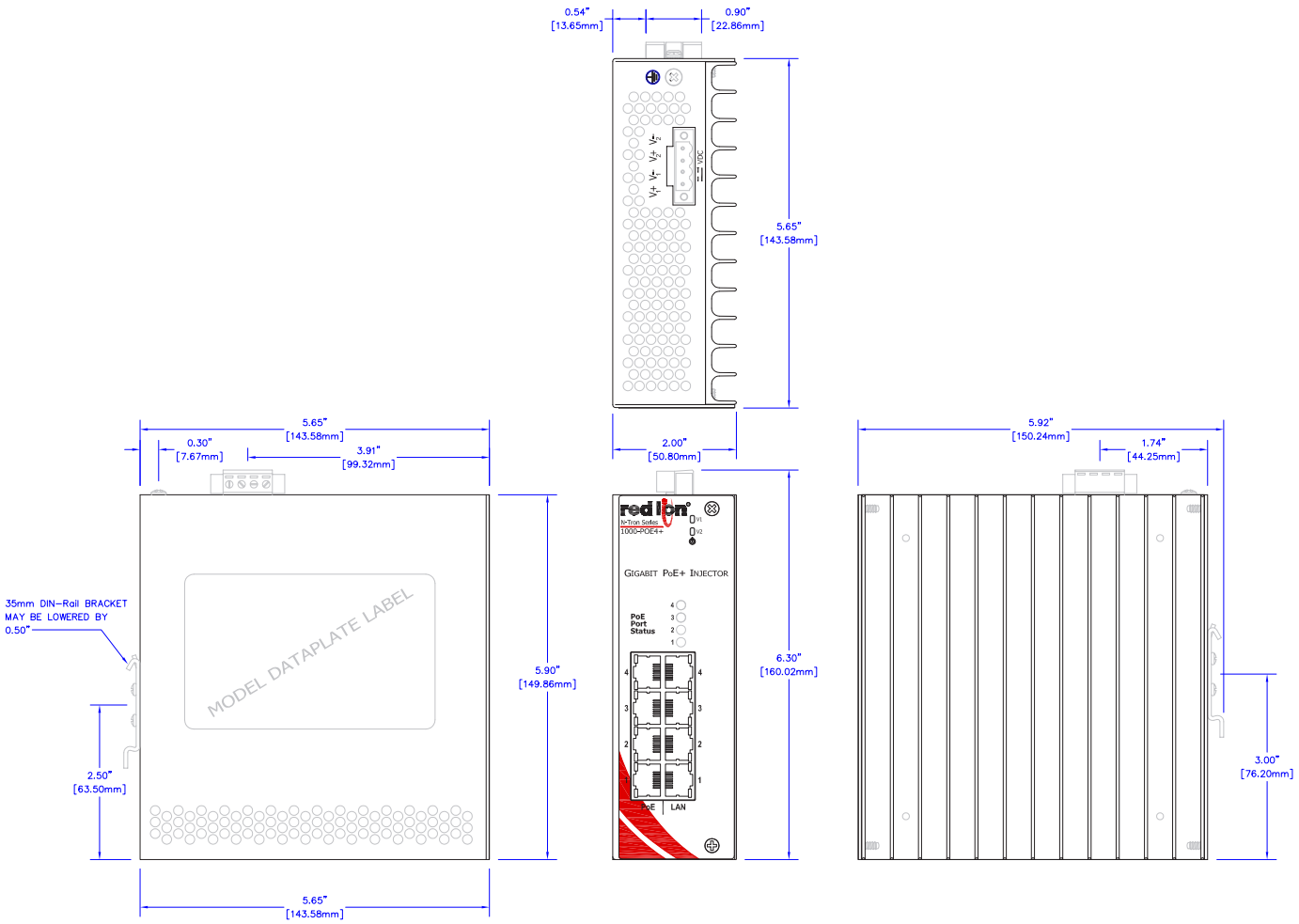
WARRANTY
3 Years on Design and Manufacturing Defects

ORDERING GUIDE

MODEL NUMBER	DESCRIPTION
1000-POE4+	4-Port Industrial Gigabit PoE+ Mid-Span Injector (4 10/100/1000Base-T Ports Data In, 4 10/100/1000Base-T Data/PoE+ Out)
NTPS-24-10	DIN-Rail Power Supply 10 Amp @ 24 VDC
1K26-PMK	Panel Mount Kit, 1000 Series

Specifications are subject to change.

DIMENSIONS


0.54"
[13.65mm]
0.90"
[22.86mm]
5.65"
[143.58mm]
2.00"
[50.80mm]
5.65"
[143.58mm]
0.30"
[7.67mm]
3.91"
[99.32mm]
35mm DIN-Rail BRACKET
MAY BE LOWERED BY
0.50"
MODEL DATAPLATE LABEL
5.90"
[149.86mm]
2.50"
[63.50mm]
6.30"
[160.02mm]
5.65"
[143.58mm]
5.92"
[150.24mm]
1.74"
[44.25mm]
3.00"
[76.20mm]
GIGABIT PoE+ INJECTOR
PoE
Port
Status
PoE
LAN

Graphite® Module: Crimson® Control

Red Lion Automation Series

▶▶▶ IEC 61131 Logic Control Programming

Red Lion's Graphite® Crimson® Control Module plugs into Graphite HMIs to form an all-in-one industrial solution that combines communication, control and visualization capabilities to reduce cost and ease operations.

Crimson Control, which is part of Crimson 3.0 software, enables organizations to use IEC 61131 programming languages – such as Ladder Logic, Function Block, Structured Text and Instruction List – to solve specific application needs by developing logic control much like a Programmable Logic Controller (PLC) or Remote Telemetry Unit (RTU) without the added expense. The end result adds IEC 61131 control functionality to provide a single solution for control, networking and data visualization without requiring additional panel space or a separate programming package.

INDUSTRY APPLICATIONS

> Factory Automation
> Oil & Gas
> Power & Utilities
> Water/Wastewater
> Industrial Internet of Things (IIoT)

PRODUCT HIGHLIGHTS

> IEC 61131 Logic Control Programming
> Rugged Evironmental Specifications
> All-in-One Industrial Solution
> Easy Configuration

FEATURES & BENEFITS

> IEC 61131 Logic Control Programming
  - Use industry-standard IEC 61131 programming languages such as Ladder Logic, Function Block, Structured Text and Instruction List
  - Easy single-solution configuration eliminates need for third-party software
> All-in-One Industrial Solution
  - Combine communication and control capabilities to reduce cost and ease operations
  - Cost-effectively saves space and time
> Rugged Environmental Specifications
  - Wide operating temperature
  - CE, UL and UL Hazardous approvals
> Powered from Graphite Host
  - Simplifies deployment by eliminating external power
> Easy Configuration
  - Simple setup using Red Lion's Crimson 3.0 software

industrial automation

CE

c UL us LISTED

▶▶▶ Graphite Module: Crimson Control Specifications

POWER

GMCC Max Power: 1.1 W (supplied by Graphite host device)

LEDs

STS - Status LED shows module condition

CERTIFICATIONS AND COMPLIANCES

CE Approved:
- EN 61326-1 Immunity to Industrial Locations
- IEC/EN 61010-1
- RoHS Compliant

UL Listed: File #E302106
UL Hazardous: File #E317425

ENVIRONMENTAL

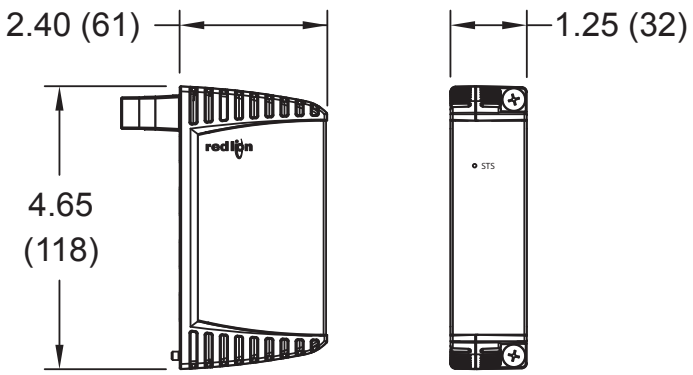
Operating Temperature Range: Limited to host
Storage Temperature Range: -40° to +85°C
Operating and Storage Humidity: 85% max. relative humidity, non condensing
Altitude: Up to 2000 meters

ORDERING GUIDE

MODEL NUMBER	DESCRIPTION
GMCC0000	Graphite Module, enables IEC 61131 control capabilities via Crimson Control

Specifications are subject to change.

DIMENSIONS *In inches (mm)*



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Connect. Monitor. Control.

E3 I/O™ Modules

Red Lion Automation Series

▶▶▶ Rugged High-Density I/O Modules

Red Lion's E3 I/O modules provide a robust and reliable platform for local and distributed monitoring and control of processes and equipment in harsh industrial environments.

The highly rugged E3 I/O modules feature discrete, analog and temperature I/O, dual Ethernet ports, an RS-485 serial port and one USB port. Configured via web interface or Red Lion's award winning Crimson® 3.0 software, E3 I/O modules are easy to setup and deploy. The high-density I/O modules complement HMIs or can be used as standalone I/O concentrators in industries including oil & gas, water/wastewater, utilities, transportation, mining and maritime. Red Lion's DIN-rail mountable modules support open-standard protocols simplifying integration into existing or newly installed networks. Replacing external devices such as switches, data concentrators and protocol converters, E3 I/O modules cost-effectively streamline systems and improve reliability.

APPLICATIONS

- Mining
- Oil & Gas
- Power & Energy
- Transportation
- Water/Wastewater

PRODUCT HIGHLIGHTS

- Configurable via Crimson 3.0 or Web Interface
- Wide Variety of Mixed I/O Configurations
- Industrial Design Supporting Deployment in Extreme Environments
- Real-Time Ring and Dual-Ethernet Ports for Powerful Network Redundancy
- Built-in Security Proactively Blocks Unwanted Access

FEATURES & BENEFITS

- Wide Variety of I/O Configurations
  - 17 models with various discrete, analog and temperature I/O
- Powerful Networking Capabilities
  - Built-in two port Ethernet switch for daisy chaining, redundancy, or pass-through
  - Modbus protocol support for industrial monitoring and communications
- Built-in Security for Proactively Blocking Unwanted Access
- RS-485 Port for Connecting Serial Devices to Ethernet Network
- Industrial Design Supporting Deployment in Extreme Environments
  - Hardened metal enclosure with both DIN-rail and panel mount options
  - Wide -40° to 75°C operating temperature range
  - UL/cUL Class 1, Division 2 Listed
- Configured via Crimson software for easy point-and-click configuration or through built-in web interface

industrial automation

►►► E3 I/O Module Specifications

SWITCH PROPERTIES
Operation: Monitored
IEEE Compliance: 802.3, 802.3u, 802.3ab, 802.3x 802.1d/D/w, 802.1p, 802.1Q, 802.1x
Protocols: TCP/IP, ARP, UDP, ICMP, DHCP, HTTP, Modbus TCP, Modbus UDP (slave or master), Sixnet TCP, Sixnet UDP (slave or master)
Latency (typical): 5 us @ 100 Mbps
Switching Method: Store-and-Forward
Networks: 1 or 2 independent with unique MAC and IP addresses
Real-Time Ring: 30 ms + 5ms per hop
MDIX Auto Sensing Cable
Auto Sensing Speed and Flow Control

POWER INPUT*
Input Voltage: 10-30 VDC (12-24 Nominal)
Steady Input Current:
Maximum: 355mA @ 24VDC no loads
Average: 190mA @ 24VDC no loads
Minimum: 150mA @ 24VDC no loads
Max Inrush: 5 A /100 us @ 24 VDC
BTU/HR: 8 (typical)

CONNECTORS
Ethernet Ports: Two (2) 10/100Base-T(X) RJ45 ports
Serial Port: One (1) RS-485 screw block (485+, 485-, GND; 2-wire half-duplex, non-isolated)
RS-485 Networking: Up to 32 (full load) stations
RS-485 Distance: Up to 0.5 miles (baud-rate dependent)
Baud Rates: 300 to 57,600 baud
Protocols: Master and slave; Sixnet and Modbus RTU/ASCII

NETWORK MEDIA
10Base-T: ≥ Cat3 cable
100Base-T(X): ≥ Cat5 cable

DISCRETE INPUTS*
Voltage Range: 10-30 VDC or 60-140 VAC
Input Resolution: 150 volts (16 channel modules only)
Input Resistance: 10 Kohms
Slow Response: 25 ms (20 Hz max count rate)
Fast Response: 1 ms (400 Hz max count rate)
Special Fast Counting: Up to 50 KHz (channel 1 & 2)
Count Up: Pulse timing and pulse rate 16 or 32-bit reporting

DISCRETE OUTPUTS*
Output Voltage Range: 10-30 VDC or VDC/AC
Maximum Output Power: Up to .5 A per channel
Short Circuit Protection: Self-reset fuses
Input Isolation: 150 V (16 channel modules only)
Channel Scan Rate: 1 ms

ANALOG INPUTS*
Input Range: 4-20 mA, 0-10 VDC, RTD, thermocouple and 250 mV
Analog/Discrete Resolution: 16 bits (0.003%); 10 bits (1 ms fast option)
Input Impedance (Resistance): 100 ohms or 200 Kohms
Fuses: Self-resetting short circuit protection (4-20 mA inputs)
DMRR (Differential Mode): 66 db at 50/60 Hz
Update Time: 880 ms to 1 ms (configurable)
Temperature Accuracy: +/-0.5°C uncalibrated (typical)
RTD Type: 100 Ohm platinum
RTD Alpha: 0.00385 or 0.00392
RTD Connections: 2 or 3-wire
RTD Input Range: -200° to 850°C

ANALOG OUTPUTS*
Analog Output Range: 4-20 mA
Analog/Discrete Resolution: 16 bits (less than 1 uA)
Full Scale Accuracy: +/-0.02% (@20°C)
Span and Offset Temperature: +/- 50 ppm per °C
Load Resistance: 0-750 Ohms @ 24 VDC
Current Limiting Short Circuit Protection

RECOMMENDED WIRING CLEARANCE
Front: 2" (5.08 cm)
Top: 1" (2.54 cm)

ENVIRONMENTAL
Operating Temperature Range: -40° to +75°C
Storage Temperature: -40° to 85°C
Operating Humidity: 10% to 95% (Non Condensing)
Shock: IEC60068-2-6
Vibration: IEC60068-2-27

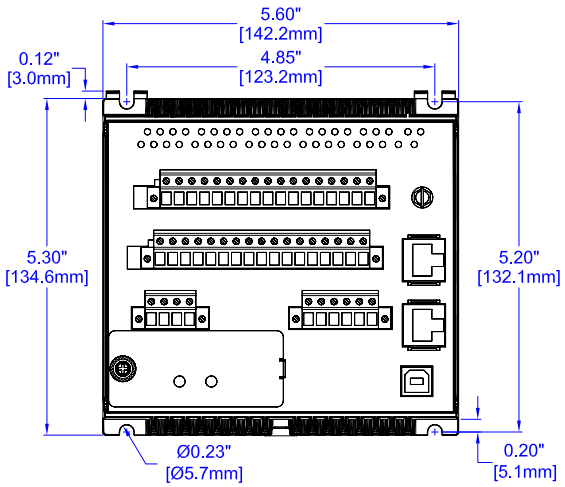
CERTIFICATION & COMPLIANCE
Hazardous Locations: ANSI/ISA 12.12.01-2013 Edition (Class I, Div. 2, Groups A, B, C, and D), CSA C22.2/213;
Marine/Offshore: Rated per ABS, DNV and Lloyds
Electrical Safety: UL 508, CSA C22.2/142, EN/IEC61010-1, CE
EMI Emissions: FCC part 15, ICES-003, Class A, EN-55022; EN6100-6-4, CE
EMC Immunity: EN61000-6-2, CE (EN61000-4-2,3,4,5,6,8); CE
Flammability: UL 94V-0 materials

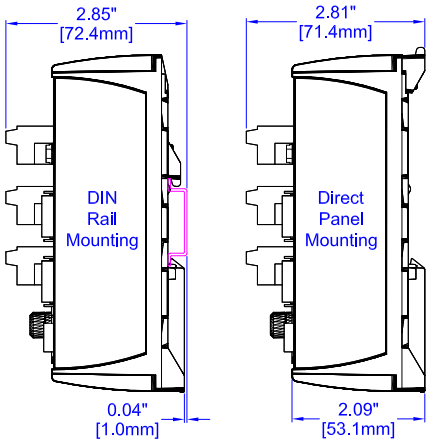
MECHANICAL
Case Dimensions:
Height: 5.30" (134.6 mm)
Width: 5.60" (142.2 mm)
Depth: 2.85" (72.4 mm)
Weight: 2.5 lb.s (1.3 kg)
Mount: DIN Rail 35 mm
MTBF: >1M Hours**

WARRANTY
3 years on design and manufacturing defects

* See manual for model specific specifications
** Note: See Hardware Manual for model specific MTBF ratings.

DIMENSIONS *in inches (mm)*





▶▶▶ E3 I/O Module Order Guide

ORDERING GUIDE

PART NUMBER	DI	DO	AI	AO	DESCRIPTION
E3-MIX24880-1	24*	8*	8		32 channel combination I/O with 1 isolated input counter
E3-MIX24882-1	24*	8*	8	2	34 channel combination I/O with 2 analog outputs
E3-MIX20884-1	20*	8*	8	4	32 channel combination I/O with 4 analog outputs and 4 isolated input counters
E3-32DI24-1	32				32 discrete inputs (10-30 VDC) including 16 multifunction counters
E3-16DI24-1	16				16 individually isolated discrete inputs (10-30 VDC) with counters
E3-16DIAC-1	16				16 individually isolated discrete inputs (120 VAC nominal; 10-30 VDC) with counters
E3-32DO24-1		32			32 discrete outputs (10-30 VDC) 0.5 Amp each, 8 Amps total
E3-16DO24-1		16			16 individually isolated discrete ouputs (10-30VDC) .5 Amp outputs, 8 Amps total
E3-16DORLY-1		16			16 individually isolated discrete outputs (10-30VDC/VAC relay) .5 Amp outputs, 8 Amps total
E3-32AI20M-1			32		32 analog inputs (4-20 mA) with 16-bit accuracy
E3-32AI10V-1			32		32 analog inputs (0-10VDC)
E3-16AI20M-1			16		16 analog inputs (4-20 mA)
E3-8AO20M-1				8	8 analog outputs (4-20 mA)
E3-16AI-8AO-1			16	8	24 channel combination, 16 analog inputs (4-20 mA) and 8 analog outputs (4-20 mA)
E3-16ISOTC-1			16TC		16 individually isolated analog inputs (thermocouple and +/- 250 mV) with J, K, E, R, T, C, N, S
E3-16ISO20M-1			16		16 individually isolated analog inputs (4-20 mA)
E3-10RTD-1			10RTD		10 analog inputs (100 Ohm platinum RTD), range is -200 to 850°C

* Shared DI/DO combination ports. See manual for more information.

EB-PSE Industrial PoE Injectors

Sixnet Networking Series

▶▶▶ Industrial Power over Ethernet Injectors

Pass Power & Data to your Ethernet Field Devices over the same Cable.

The EB-PSE-24V-1 or EB-PSE-48V-2 industrial PoE power injectors add 48 VDC power into 1 or 2 Ethernet ports so that you can pass power and data over the same wire to your Ethernet devices in the field. The 24V-1 model steps up your 24 VDC for sourcing 1 PoE port so no separate DC/DC converter is required. The 48V-2 model is two injectors in one to save space and money. Both are ultra-rugged, reliable and easy to use.

APPLICATIONS

> Video and security

> Industrial automation and control

> Fully IEEE 802.3af compliant PSE (Power Sourcing Equipment) operation

PRODUCT HIGHLIGHTS

> Process machine and motion control

> Model 1 directly runs off of your existing 24 VDC and powers 1 PoE (48 VDC) port

> Model 2 saves you space and money by powering 2 PoE (48 VDC) ports

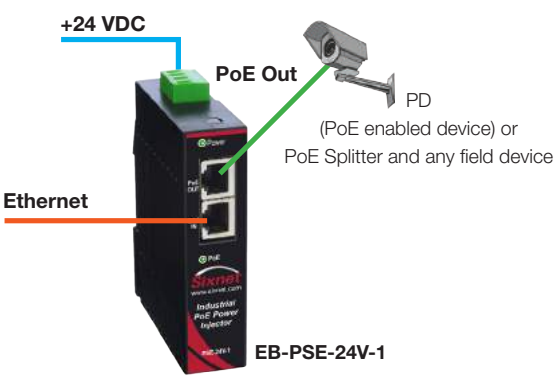
> Industrial rated for -40 to 75°C operation

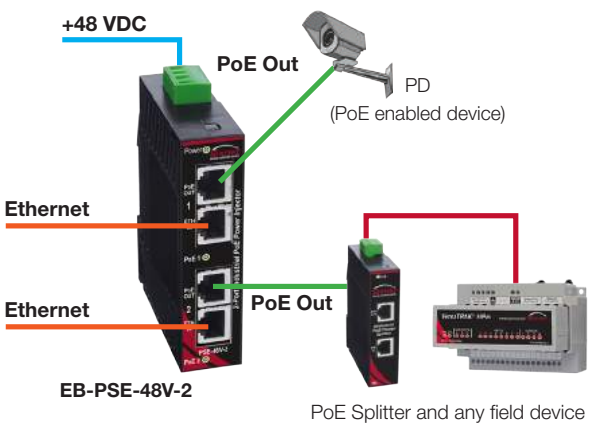
FEATURES & BENEFITS

> IEEE 802.3af compliant PoE ports
- Power Sourcing Equipment (PSE) operation
- Auto-detection of PD (powered devices)
- Supplies up to 15.4 watts per channel
- Over-temperature and over-current detection
- Over and under-voltage protection

> True plug and play simplicity
- No user settings
- Ready to use right out of the box

> Trouble free operation
- Ultra-reliable 1,000,000+ hours MTBF
- Slim package for DIN rail or panel mounting





industrial networking

Industrial Power over Ethernet Injectors Specifications

SWITCH PROPERTIES

Ethernet protocols supported: All IEEE 802.3
Ethernet connectors per channel: 2 (1 for Ethernet in, 1 for PoE out)
Ethernet port standards: 10/100BaseTX IEEE 802.3 / 802.3u

POE OUTPUT

IEEE 802.3af PoE operation: Power Sourcing Equipment (PSE)
PoE power output
- 48 VDC @ 15.4 Watts per channel
- 24V model: Derate 1W per 2°C over 60°C

RJ45 PoE pin assignments
- A=unused pair: TX(3,6); RX(1,2); V-(7,8); V+(4,5)
- B=signal pair: TX/V- (3, 6); RX/V+ (1, 2)

PoE operation: Auto-detection & power management
PoE disconnect mode: AC for 24V-1 and DC for 48V-2
PoE protection: Over-temp, over-current, over/under-voltage & transient

OPTIONS

Power input for 48V-2 models: 45-56 VDC @ 31 Watts max.
Power input for 24V-1 models: 18-30 VDC @ 20 Watts max.
Transient protection 15,000 watts peak
Spike protection 5,000 watts (10 times for 10 uS)

SUBMITTED FOR TESTING

Electrical safety:UL508/CSA C22.2/14; EN61010-1, CE
EMI emissions: FCC part 15, ICES-003; EN61000-6-4, CE
EMC immunity: IEC61000-6-2, CE
Hazardous locations: UL1604, CSA C22.2/213 (Class I, Div. 2); EN60079-15 (Zone 2; Category 3), CE (ATEX)

ENVIRONMENTAL

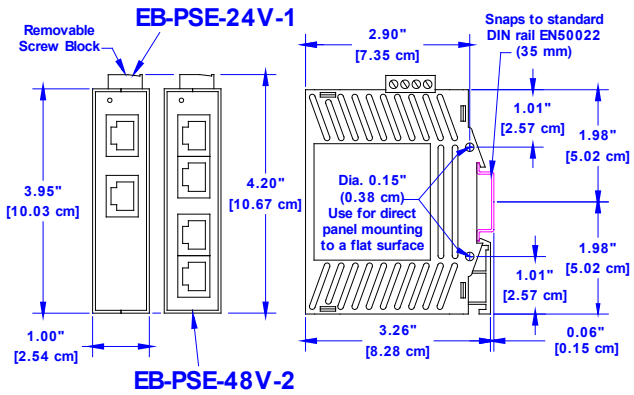
Operating temperature range: -40 to +75°C (cold startup @ -40°C)
- 24V model: Derate 1W per 2°C over 60°C

Storage temperature range: -40 to +85 °C
Humidity (non-condensing) 5 to 95% RH
Vibration, shock and freefall: IEC68-2-6, -27 and -32

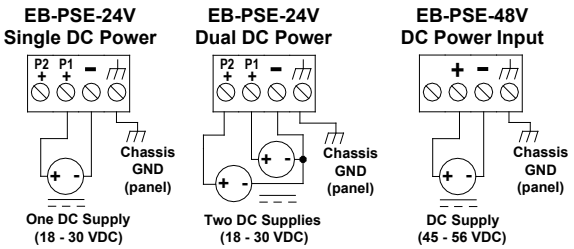
MECHANICAL

DIN rail or direct panel mounting
Packaging - Lexan with IP30 protection
Weight (approximate): 0.17 Kg (0.25 lbs)
Dimensions - 4 x 1 x 3.3" (10 x 2.5 x 8.3 cm)
MTBF (estimated): >1,000,000 hours

DIMENSIONS



POWER WIRING



ORDERING GUIDE

PART NUMBER	DESCRIPTION
EB-PSE-24V-1A	PoE injector for 1 PoE port (uses unused pairs), 24V input
EB-PSE-48V-2A	PoE injector for 2 PoE port (uses unused pairs), 48V input
EB-PSE-24V-1B	Special order: uses signal pairs for PoE, ideal for 4 wire cables
EB-PSE-48V-2B	Special order: uses signal pairs for PoE, ideal for 4 wire cables

ACCESSORIES

PART NUMBER	DESCRIPTION
EB-PS-AC48-75	Industrial power supply, AC to 48 VDC, 75W, 1.5A
EB-PS-AC48-120	Industrial power supply, AC to 48 VDC, 120W, 2.5A
EB-PD-24V-1	PoE splitter for 24VDC devices, 13W

Other voltages available—special order.

All specifications are subject to change. Consult factory for latest info.

ESERV-M12T

N-Tron Networking Series

Modbus Gateways Server

Create a seamless communications bridge to legacy Modbus RS-232, RS-422 or RS-485 networks with the ESERV-M12T Modbus Gateways server from N-TRON. The serial ports can be accessed over a LAN or WAN using Direct IP Mode connections. Supporting up to 16 masters and 32 slaves, these products feature autodetecting 10/100 copper and fiber optic options. Easy-to-use software, designed for Windows 2000, 2003 Server, XP and Vista, provides Modbus messaging priority control and allows management through multiple TCP/IP client sessions. Support for serial data rates up to 230 kbps ensures maximum network flexibility. Built for industrial environments, these tough gateways are housed in a slim IP30 DIN rail mountable case. They operate with a range of DC power supply voltages and have pluggable terminal block connectors. An external power supply (sold separately) is required.

PRODUCT FEATURES

- Ethernet Enabled Modbus RS-232/422/485
- Modbus TCP, ASCII, and RTU
- Modbus Flexibility- Serial & Ethernet, Masters & Slaves
- Modbus Messaging Priority Control
- View Messaging Status in Real Time
- Ethernet Fiber Options
- Easy Configuration Software

Specifications

Serial Technology

RS-232	TD, RD, RTS, CTS, DTR, RSR, DTD, GND
RS-485 2-Wire	Data A(-), Data B(+), GND
RS-422/485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), GND
Serial Connector	Removable Terminal Blocks
Data Rate	up to 230.4 kbps

Network

Serial Memory	8KB per port
Network Memory	4KB
IP Port Address	5300 - Heartbeat and configuration Setting in TCP mode (paired mode) 8888 - ESERV-M12T Update
Mac Address Table	2k

Network Communications

LAN	10/100 Mbps Auto-Detecting

Network Physical Layer Standards

Ethernet	IEEE 802.3 auto detecting & auto MDI/MDX 10BaseT and 100BaseTX

Protocols

TCP, IPv4, ARP, TELNET, HTTP 1.0, ICMP/PING, DHCP/BOOTP

IP MODE	Static, DHCP
TCP	User Definable

Configuration Software

OS Compatibility	Windows 2000, 2003 Server, XP , Vista

Fiber Optic Technology

Type/Wavelength	Multi-mode / 1310nm
Output Power	-19 to -14dBm
Receive Sensitivity	~ -32dBm
Cable	62.5 / 125um
Connector	ST
Range	1.2 Miles (2km)

Other

Connection Mode	Modbus RTU Master/Slave Modbus ASCII Master/Slave
Search	Serial direct COM and Ethernet Auto Search or specific IP
Diagnostics	Display PC IP, ping save test config (text readable)
Firmware Upgrade	Web GUI through Ethernet

Power

Source	External
Input Voltage	10 to 58 VDC
Power Consumption	4.0 W
Power Connector	Removable Terminal Block
Wire Size Accepted	12 to 28 AWG

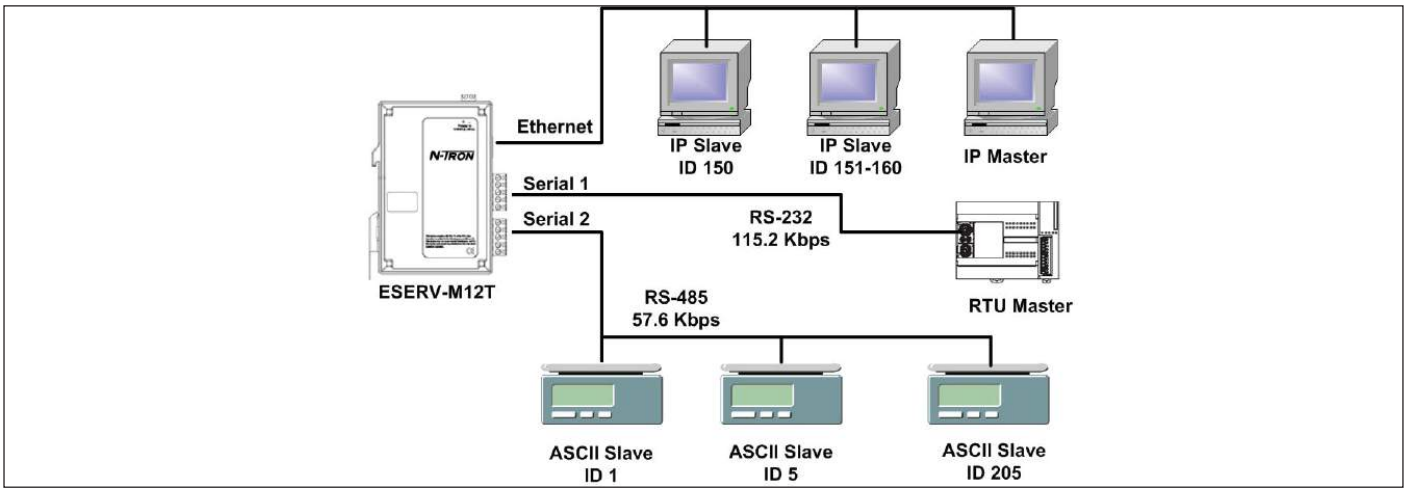
Mechanical

LED Indicators	Serial Port, Ethernet Link, Ready
Switches	Reset Button
Dimensions	1.2 x 3.2 x 4.7 in (3.0 x 8.1 x 11.9 cm)
Enclosure	IP 30 Plastic, 35 mm DIN Mount
Weight	0.33 lbs (149.7 g)
MTBF	132309 hours
MTBF Calc. Method	Parts Count Reliability Prediction

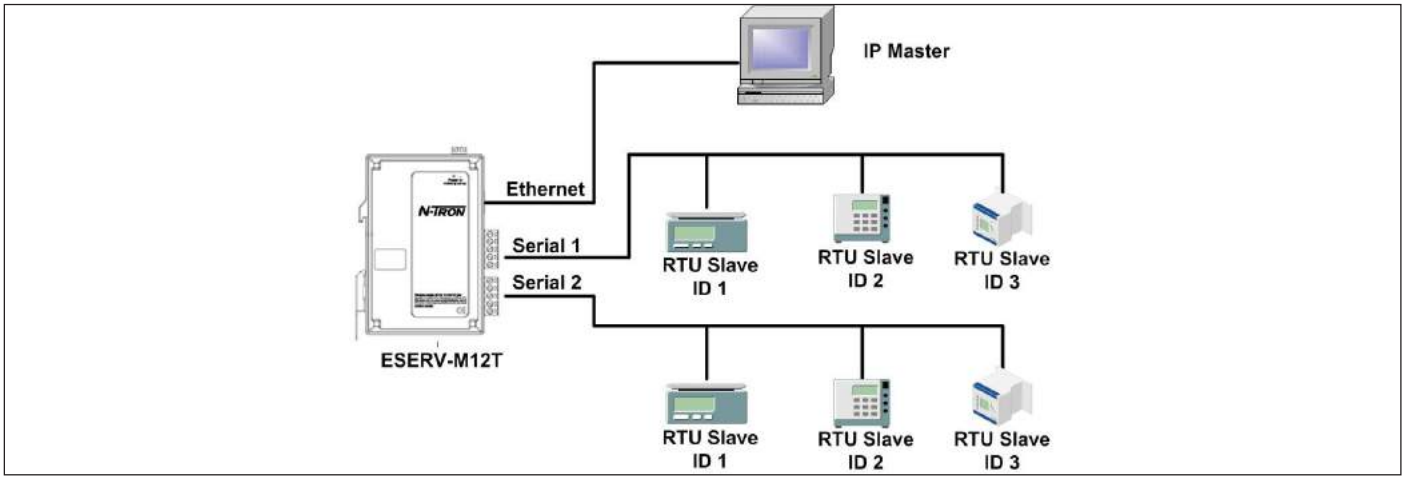
Environmental

Operating Temperature	- 34 to 80°C (-29 to 176°F)
Storage Temp	- 40 to 85°C (-40 to 185°F)
Operating Humidity	0 to 95% Non-condensing

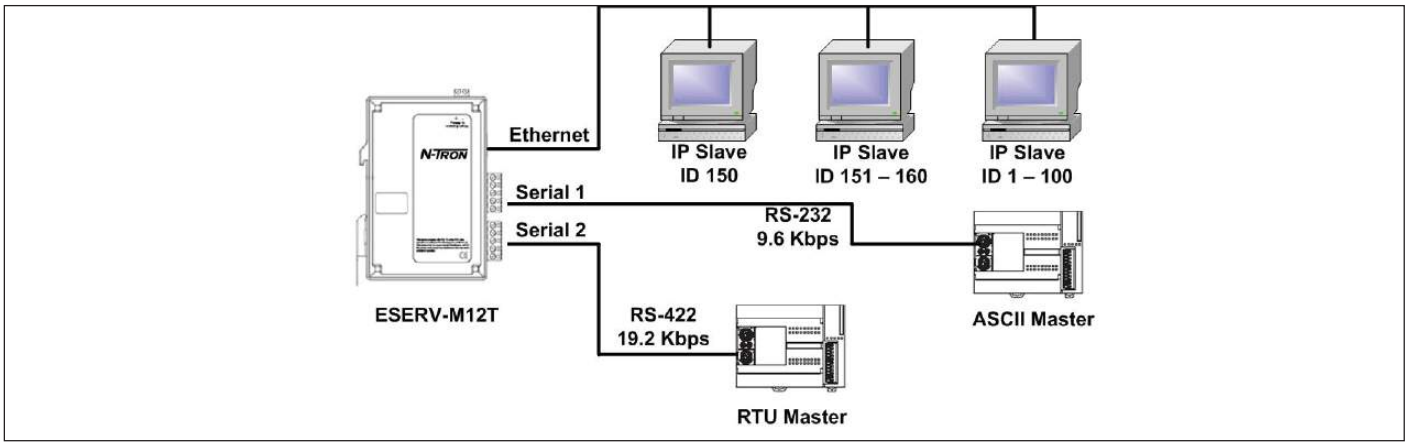
RegulatoryApprovals FCC, CE, UL 508



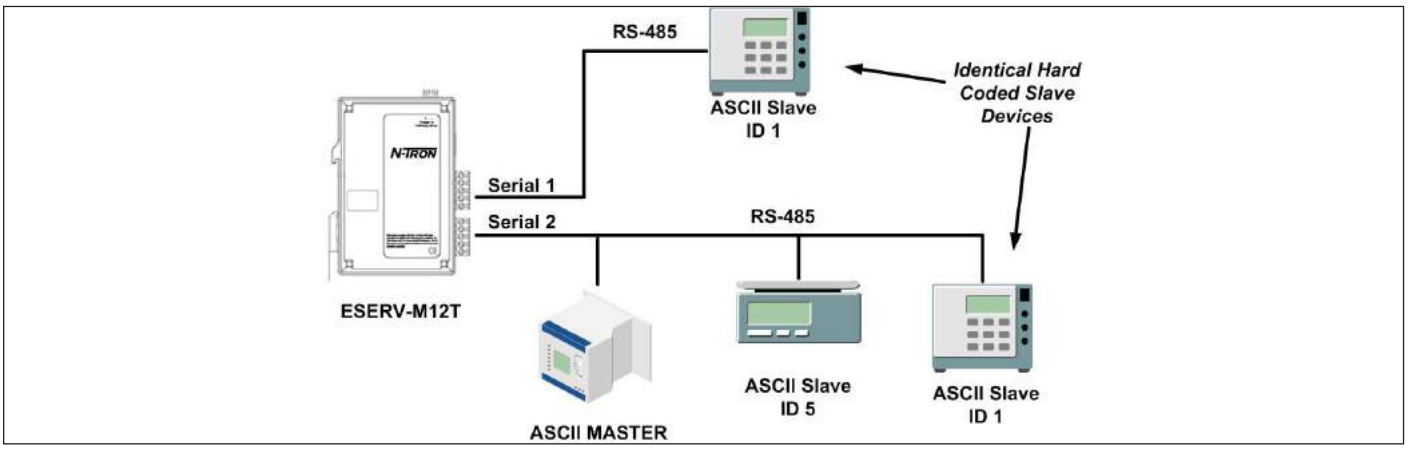
Serial Ethernet Masters - Serial Ethernet Slaves



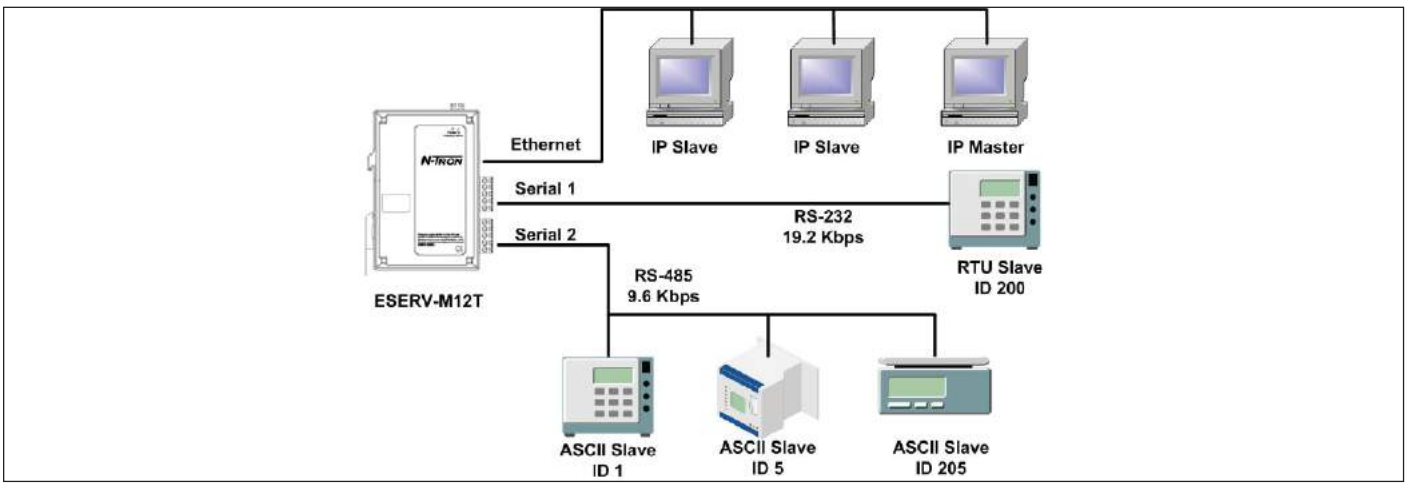
Identical Production Lines



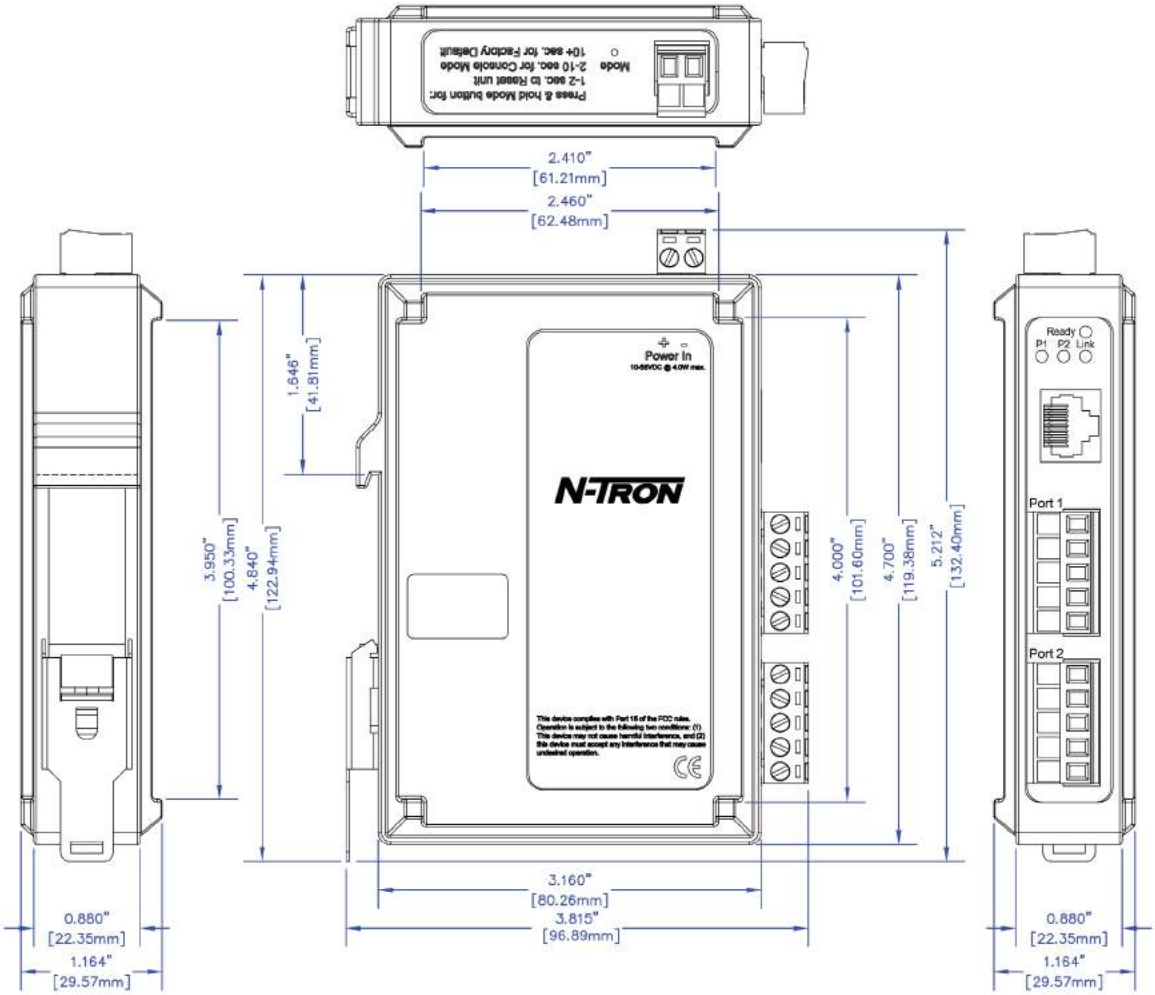
Serial Master - IP Slaves



Identical Hard Coded Slaves



Ethernet Master with Serial Slaves



Ordering Information

ESERV-M12T	Modbus Ethernet to Serial Gateway with (2) Serial ports (TB connectors); (1) Ethernet port (RJ-45)
ESERV-M12T-ST	Modbus Ethernet to Serial Gateway with (2) Serial ports (TB connectors); (1) Ethernet Multimode Fiber port (ST style connector)
NTPS-24-1.3	N-Tron Power Supply1.2 Amp @ 24VDC

EtherTRAK®-2 Ethernet I/O Modules

Sixnet Automation Series

▶▶▶ Ethernet I/O Modules

PRODUCT HIGHLIGHTS

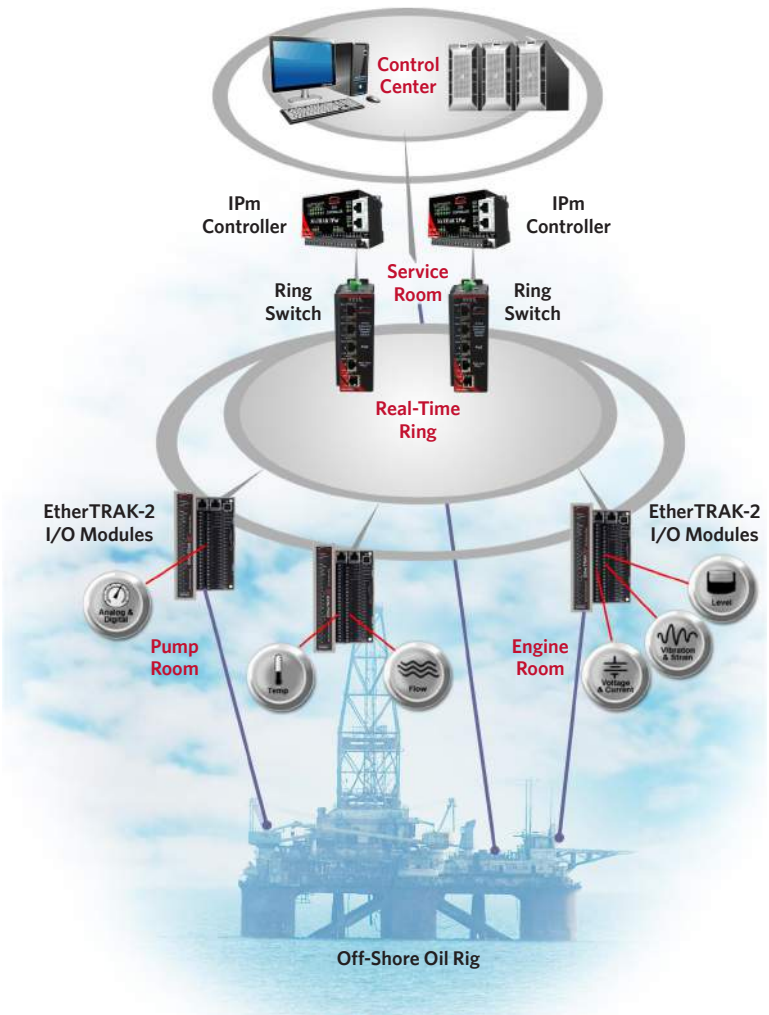
- Flexible mix of I/O channels support all instrumentation needs
- Real-Time Ring™ for fast redundancy
- Dual independent Ethernet ports enable flexible networking
- Built-in security proactively blocks unwanted access
- Extensive health diagnostics and reporting reduce downtime
- Standard Modbus protocols provide universal compatibility
- Rugged design supports extreme temperatures and hazardous locations

APPLICATIONS

- Oil & Gas
- Power & Energy
  - Transmission
  - Distribution
- Transportation
- Mining
- Maritime
- Water/Wastewater

Sixnet's EtherTRAK®-2 Ethernet I/O modules provide a simple and secure way to reliably monitor remote sites located in harsh environments. Offering the lowest cost per I/O point and rugged environmental ratings, EtherTRAK-2 modules are ideal for both control rooms and extreme locations across industries that include oil & gas, power & energy, transportation, mining, maritime and water/wastewater.

Our compact DIN-rail modules support open-standard protocols to provide flexible communication options for existing or newly installed Ethernet networks. By seamlessly replacing external devices such as switches, data concentrators and protocol converters, EtherTRAK-2 modules transcend simple I/O capabilities to cost-effectively streamline systems and improve reliability.



industrial automation

EtherTRAK®-2 Ethernet I/O Module Specifications

INDUSTRIAL AUTOMATION

Sixnet's rugged RTUs and I/O provide a simple yet powerful means to reliably monitor and control remote sites around the clock in the harshest environments. Our compact automation systems can start small and grow as needs increase without requiring hardware replacement. Virtually unlimited scalability means organizations have fewer restrictions on the number of remote sites or devices that are supported. "Best of both worlds" programming combines Windows ease of use with the future-proof security of an embedded Linux OS.

FEATURES & BENEFITS

High-Performance, Flexible I/O

- **Provides high-speed functionality**
- **Lowers overall cost per I/O point**
  - Flexible mix of up to 34 I/O supports DI, DO, AI, AO, temperature (RTD and thermocouples)
  - High resolution 16-bit analog or high-speed 10-bit analog
  - Fast I/O polling of up to 1mS
  - Advanced counter functions with 32-bit reporting
  - Time proportioned outputs simplify high-speed pulse rate functions

Built-In Security

- **Prevents unwanted intrusion**
- **Guards against unauthorized users**
  - User-assigned permissions
  - Firewall protection

Flexible, Redundant Networking

- **Simplifies connectivity by replacing Ethernet switches**
- **Ensures reliability without additional cost**
  - Real-Time Ring switch mode for fast redundancy
  - Switch elimination mode enables daisy-chaining
  - Dual independent Ethernet ports
  - Ethernet, RS-485 and USB connections
  - Optional Power over Ethernet (PoE)
  - Embedded data concentrator

Configuration Maintenance & Monitoring

- **Delivers cross-platform configuration**
- **Offers easy-to-use software tools**
  - Configuration and monitoring via standard web browser
  - On-board storage for project documentation
  - Project-based software tools
  - User-based history tracks changes
  - Per-channel calibration
  - Configuration archiving
  - Module hot-swap capabilities

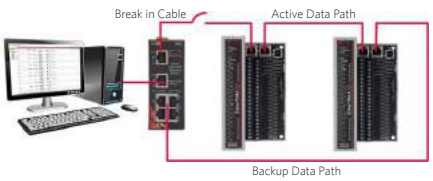
Rugged, Compact Design

- **Supports harsh environments**
- **Delivers proven reliability**
  - Industrial -40 to 75°C operating range
  - UL/CSA (CUL), FCC and CE rated
  - Hazardous locations rated for Class I, Div 2 (Zone 2) areas
  - Vibration resistant IEC60068-2-6
  - Self-resetting fuses protect I/O

Watchdog Monitoring & Reporting

- **Provides health reports of various module functions**
- **Reduces maintenance downtime**
  - CPU health
  - Dual-power status
  - Communication activity
  - PoE status
  - Port link status

NETWORKING OPTIONS

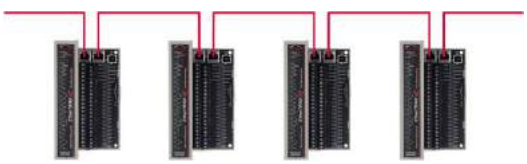


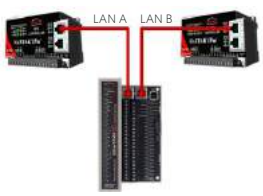
Real-Time Ring Switch Mode

Create redundant Ethernet reliability without additional cost

Switch Elimination Mode

Daisy-chain modules without external switches to save money and simplify connectivity





Two Networks Mode

Each Ethernet port has a unique MAC and IP address for connection to two independent physical networks

EtherTRAK®-2 Ethernet I/O Module Specifications

SPECIFICATIONS

General I/O Performance

- Power supply voltage: 10-30 VDC
- Input current requirement: 100 mA @ 24 VDC typical with no loads
- PoE power (EB modules only): 10 watts at 60°C for user loads
- De-rate: up to 5 watts at 75°C
- I/O: 512 discrete inputs and outputs plus 256 analog input and output registers
- Unique station addresses: 16,000+ (Sixnet or 247 Modbus)

Ethernet Performance

- Ethernet ports: 10/100BaseTx (auto-detecting)
- Connection: RJ45 (auto-crossover)
- Isolation: 1500 volts RMS 1 minute (60 Hz.)
- Message response time: <1 mS per message
- Diagnostic LEDs: solid indicates link, blinking indicates activity
- Protocol support: TCP/IP, ARP, UDP, ICMP, DHCP, HTTP, Modbus UDP/TCP slave mode, Modbus UDP master mode, Sixnet UDR UDP/TCP slave mode, Sixnet UDR UDP master mode
- Real-Time Ring: 5ms per hop recovery time
- Independent networks: 1 or 2 with unique MAC and IP addres

Serial Ports

- RS-485 port: screw terminals (485+, 485-, GND; 2-wire half-duplex, not isolated)
- RS-485 networking: up to 32 (full load) stations
- RS-485 distance: up to 0.5 miles (baud-rate dependent)
- Baud rates: from 300 to 57,600 baud
- Protocols: master and slave; Sixnet and Modbus RTU/ASCII
- Diagnostic LEDs: transmit (TD) and receive (RD)

Analog Output Channels

- Analog output range: 4-20 mA
- D/A resolution: 16 bits (less than 1 uA)
- Full scale accuracy: +/-0.02% (at 20°C)
- Span and offset temperature: +/- 50 ppm per °C
- Load resistance (@ 24 V): 0-750 Ohms
- Current limiting short circuit protection
- Refer to user manual for additional specifications

Analog Input Channels

- Input range: 4-20mA, 0-10VDC, RTD, thermocouple and 250mV
- A/D resolution: 16 bits (0.003%); 10 bits (1mS fast option)
- Input impedance (resistance): 100 ohms or 200 Kohms
- Fuses: self-resetting short circuit protection (4-20 mA inputs)
- DMRR (differential mode): 66 db at 50/60 Hz
- Update time: from 880 mS to 1 mS (depending configuration)
- Temperature accuracy: typical uncalibrated +/-0.5°C
- RTD type: 100 Ohm platinum
- RTD alpha: 0.00385 or 0.00392
- RTD connections: 2 or 3-wire
- RTD input range: -200 to 850°C
- Refer to user manual for additional specifications

Discrete Input Channels

- Voltage range: 10–30 VDC or 60–140 VAC
- Input isolation: 150 volts (16 channel modules only)
- Input resistance: 10 Kohms
- Slow response (software configurable): 25 mS (20 Hz. maximum counting rate)
- Fastest response (software configurable): 1 mS (400 Hz. maximum counting rate)
- Special fast counting rate: up to 50 KHz on channels 1 and 2
- Count up: pulse timing and pulse rate 16 or 32-bit reporting
- Refer to user manual for additional specifications

Discrete Output Channels

- Output voltage range: 10-30 VDC or 10-30VDC/AC
- Maximum output power: up to 1A per channel
- Short circuit protection: self-reset fuses (trip above 1.5 Amp)
- Input isolation: 150 volts (16 channel modules only)
- All channels scan rate: 1 mS
- Refer to user manual for additional specifications

Web Interface

- Secure web access with password protection for multiple users
- 1 simultaneous user
- 750K memory for user pages (more with special order)

Environmental

- Operating temperature: -40 to 75°C (-40 to 85°C storage)
- Humidity: 5 to 95% RH (non-condensing; optional conformal coating)
- Flammability: UL 94V-0 materials
- Vibration: IEC60068-2-6
- Shock: IEC60068-2-27

Standards Compliance

- Electrical safety : UL 508, CSA C22.2/142; EN61010-1; CE
- EMI emissions: FCC part 15, ICES-003, Class A; EN55022; IEC6100-6-4; CE
- EMC immunity : IEC61000-6-2 (EN61000-4-2,3,4, 5, 6, 8); CE
- Hazardous locations: Class 1, Div 2, Groups A, B, C, D; ISA12.12.01; CSA C22.2/213; ATEX (Zone 2) IEC60079-0,-15
- Marine and offshore: tested and/or verified to meet various standards such as ABS, DNV No. 2.4, and Lloyds

Physical

- Mounting: DIN rail (EN50022), direct to panel or flat panel
- Packaging: impact resistant Lexan® polycarbonate
- Dimensions (module and base): 5.5"L x 3.5"W x 5.1"H (14cm x 8.9cm x 13cm)

Warranty

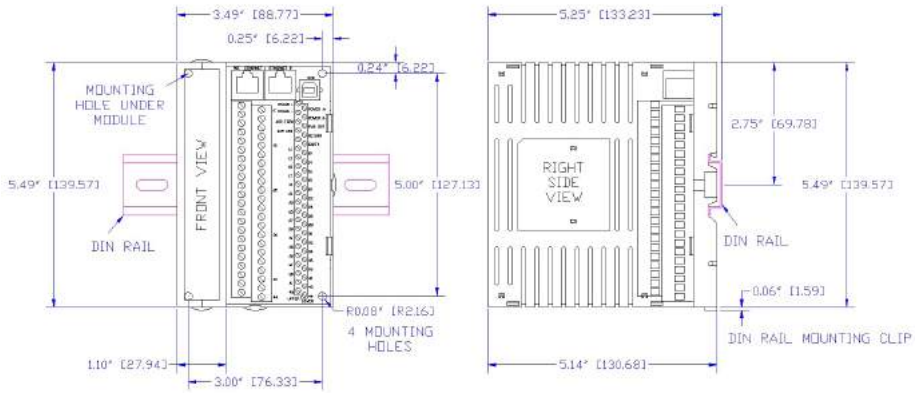
- 2 years on design and manufacturing defects

All speci ications are subject to change.

ORDER GUIDE

PART NUMBER	DI	DO	AI	AO	DESCRIPTION
E2 or EB-MIX24880-D	24	8	8		32 channel combination I/O with 1 isolated input counter
E2 or EB-MIX24882-D	24	8	8	2	34 channel combination I/O with 2 analog outputs
E2-MIX20884-D	20	8	8	4	32 channel combination I/O with 4 analog outputs and 4 isolated input counters
E2 or EB-32DI24-D	32				32 discrete inputs (10-30 VDC) including 16 multifunction counters
E2 or EB-16DI24-D	16				16 individually isolated discrete inputs (10-30 VDC) with counters
E2-16DIAC-D	16				16 individually isolated discrete inputs (120 VAC nominal; 10-30 VDC) with counters
E2 or EB-32DO24-D		32			32 discrete outputs (10-30 VDC) 0.5 Amp each, 8 Amps total
E2 or EB-16DO24-D		16			16 individually isolated discrete ouputs (10-30VDC) 1 Amp outputs, 16 Amps total
E2-16DORLY		16			16 individually isolated discrete outputs (10-30VDC/VAC relay) 1 Amp outputs, 16 Amps total
E2 or EB-32AI20M-D			32		32 analog inputs (4-20 mA) with 16-bit accuracy
E2 or EB-32AI10V-D			32		32 analog inputs (0-10VDC)
E2 or EB-16AI20M-D			16		16 analog inputs (4-20 mA)
E2 or EB-8AO20M-D				8	8 analog outputs (4-20 mA)
E2 or EB-16AI-8AO-D			16	8	24 channel combination, 16 analog inputs (4-20 mA) and 8 analog outputs (4-20 mA)
E2 or EB-16ISOTC-D			16TC		16 individually isolated analog inputs (thermocouple and +/- 250 mV) with J, K, E, R, T, C, N, S
E2 or EB-16ISO20M-D			16		16 individually isolated analgo inputs (4-20 mA)
E2 or EB-10RTD-D			10RTD		10 analog inputs (100 Ohm platinum RTD), rang is -200 to 850°C

MECHANICAL DRAWING



Graphite® Core Controller

Red Lion Automation Series

▶▶▶ Rugged Standalone Industrial Controller

The Graphite® Core Controller is a rugged all-in-one industrial solution that reduces cost and complexity by combining IEC 61131 control capabilities with networking and data visualization.

Integrating communication and control into factory automation and process control applications has never been easier. With all-metal construction, a built-in web server and Red Lion's Crimson® 3.0 software with Crimson Control functionality, our rugged controller operates in the harshest environments to provide a single programming solution for control, networking and data visualization. Simply use industry-standard IEC 61131 programming languages such as Ladder Logic, Function Block, Structured Text and Instruction List to develop logic code much like a Programmable Logic Controller (PLC) or Remote Telemetry Unit (RTU) without the added expense. In addition, select from a variety of I/O, PID control and communications modules to connect, monitor and control a wide array of devices – regardless of location – to meet specific application requirements.

INDUSTRY APPLICATIONS

- Factory Automation
- Oil & Gas
- Power & Utilities
- Water/Wastewater
- Transportation
- Industrial Internet of Things (IIoT)

PRODUCT HIGHLIGHTS

- Industry-Standard Crimson Control Engine
- Protocol Conversion of over 300 Drivers
- Web Server for Data Visualization
- Real-Time Data Logging to SD Card or via FTP
- Rugged Construction for Extreme Protection
- Wide Operating Temperature Range
- Scalable Modules & Expansion Options

FEATURES & BENEFITS

- Powerful Crimson 3.0 Software with Crimson Control
  - Intuitive drag-and-drop graphical software for easy setup
  - Use industry-standard IEC 61131 programming languages such as Ladder Logic, Function Block, Structured Text and Instruction List
  - Map over 300 drivers to other devices without the need for special gateways
  - Easy single-solution configuration eliminates need for third-party software
- Versatile I/O Module & Expansion Options
  - Choose from a mix of I/O, PID control or communication to populate up to 5 local module slots
  - Connect Graphite Expansion Racks to easily scale
  - Extend even further with E3 I/O™ high-density modules
- Industry-Leading Protocol Conversion
  - Communicate with over 300 major industrial protocols
  - Support up to 18 simultaneous protocols
  - Convert between serial, USB and Ethernet devices
  - Manage multi-vendor environments with ease
- Rugged Environmental Specifications
  - Wide -40° to 70°C operating temperature
  - High shock and vibration tolerance
  - CE, UL/cUL and UL/cUL Hazardous approvals
- Powerful Integration Functionality
  - Ethernet, USB and serial ports make communication simple
  - Built-in data logging enhances troubleshooting and helps meet regulatory requirements
  - Robust web server provides remote visualization, access and control to reduce costly site visits

industrial automation

CE

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▶▶▶ Graphite Core Controller Specifications

POWER INPUT

Input Voltage: 10-30 VDC

Must use a Class 2 circuit according to National Electrical Code (NEC), NFPA-70 or Canadian Electrical Code (CEC), Part I, C22.1 or a Limited Power Supply (LPS) according to IEC 60950-1 or Limited energy circuit according to IEC 61010-1.

	GRAC00C5 Power Ratings (Watts)			
Input Voltage	10 V	12 V	24 V	30 V
Typical Power (GRAC00C5 only)	4 W	4 W	5 W	5 W
Maximum Power (GRAC00C5 only)	10 W	10 W	10 W	11 W
Available Power for Modules	21 W			
Max Power GRAC00C5 With Module(s)	31 W	31 W	32 W	32 W

CONNECTORS

USB Port: One (1) USB Type B complies with USB specification 2.0 (high speed, full speed)

USB Host Ports: Two (2) USB Type A complies with USB specification 2.0 Supports full-speed data transfers

Hardware over current protected (0.5 A max per port)

Serial Ports: Format/Baud rates independently configurable

Programming Port:

One (1) RS-232 port with RJ12 connector

Communication Ports:

One (1) RS-232 port via RJ12 connector

One (1) RS-422/485 port via RJ45 connector

Ethernet Ports: 1500 Vrms network isolation

One (1) 10/100Base-T(X) port via RJ45 connector

Power: High compression cage-clamp terminal block

Wire Strip Length: 0.3" (7.5 mm)

Wire Gauge Capacity: One 14 AWG (1.63 mm) solid, two 18 AWG (1.02 mm) or four 20 AWG (0.81 mm)

ENVIRONMENTAL

Operating Temperature: -40°C to 70°C*

Storage Temperature: -40°C to 85°C

Operating Humidity: 0% to 85% max. RH non-condensing

Altitude: Up to 2000 meters

Panel Mount Vibration to IEC 68-2-6: Operational 5-500 Hz, 4 g

Panel Mount Shock to IEC 68-2-27: Operational 40 g (10 g, modules w/ relays)

DIN Rail Mount Vibration to IEC 68-2-6: Operational 5-500 Hz, 2 g

DIN Rail Mount Shock to IEC 68-2-27: Operational 15 g (10 g, modules w/relays)

Requires DIN Rail type: DIN 1010, DIN 1065, or DIN 3065

CERTIFICATIONS AND COMPLIANCES

Product Safety:

EN 61326-1 Immunity to Industrial Locations

Emission CISPR 11 Class A

IEC/EN 61010-1

cULus Listed: File #E302106

cULus Hazardous: File #E317425

Other:

RoHS Compliant

MECHANICAL

Cast aluminum. Installation Category II, Pollution Degree 2 as defined in IEC 60664-1

Case Dimensions:

Height: 6.10" (15.5 cm)

Width: 7.02" (17.8 cm)

Depth: 1.98" (5.0 cm)

Weight: 2.1 lbs (0.95 kg)

Mounting: Panel mount or DIN rail

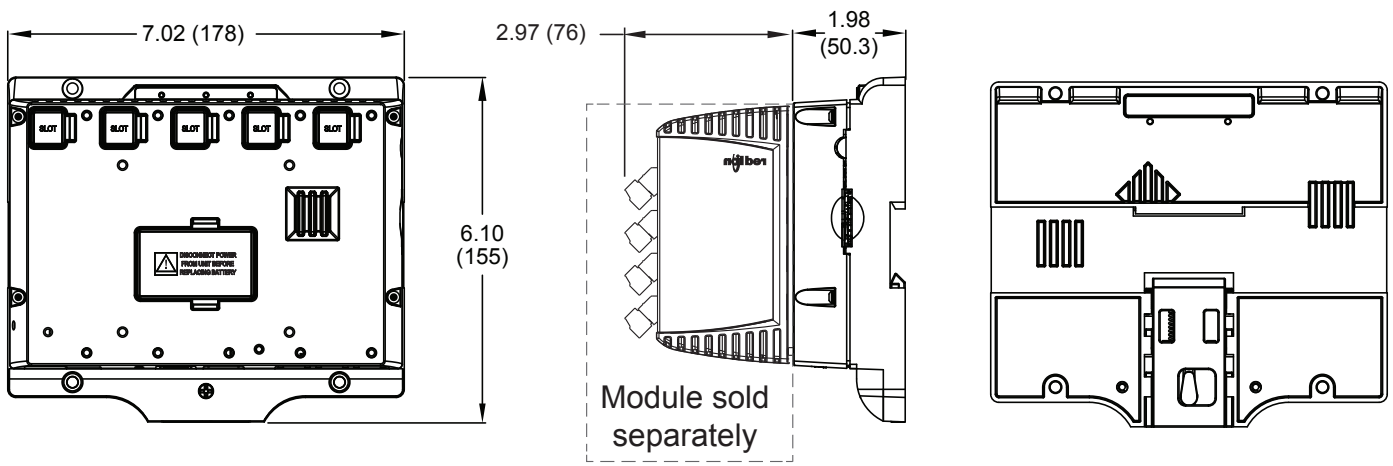
ORDERING GUIDE

MODEL NUMBER	DESCRIPTION
GRAC00C5	Graphite Core Controller, 5 Port Self-contained Rack

* Lowest range among equipment used in your Graphite system; refer to user manual.

Specifications are subject to change.

DIMENSIONS



red lion®

Connect. Monitor. Control.

Graphite® Expansion Racks

Red Lion Automation Series

▶▶▶ Industrial Modularity for Graphite Platform

Easily panel mount the I/O and communication capabilities of Red Lion's Graphite® platform using rugged USB modular expansion racks.

Rugged Graphite expansion racks allow for easy back-of-cabinet mounting and support for additional plug-in modules without extensive wiring. These expansion racks work with the Graphite platform to provide a scalable solution that enables organizations to connect, monitor and control more industrial processes.

Standard Rack

Wide Rack

INDUSTRY APPLICATIONS

> Factory Automation
> Oil & Gas
> Power & Utilities
> Plastic Extrusion
> Data Acquisition
> Water/Wastewater
> Industrial Internet of Things (IIoT)

PRODUCT HIGHLIGHTS

> USB Cable Connects Expansion Rack to Graphite Platform
> Support for Additional Plug-In Modules
> Wide -40° to 75°C Operating Temperature*
> Rugged Industrial Design for Harsh Environments

FEATURES & BENEFITS

> Remote Module Mounting
  - Easy back-of-cabinet installation
  - Minimizes I/O cabling to cabinet door
> Extend Graphite Platform Capabilities
  - Support for additional plug-in modules
> Rugged Environmental Specifications
  - Wide -40° to 75°C operating temperature*
  - High shock and vibration tolerance
  - CE, UL/cUL and UL/cUL Hazardous approvals
> Multiple Models Available
  - Wide expansion rack includes USB host and power for connected modules
    - Filtered power supply for module and Graphite platform
    - 3 module slots per rack
  - Standard expansion rack mates to wide rack
    - 3 module slots per rack
  - Mounting options include DIN rail or direct mount

industrial automation

CE

c UL us LISTED

►►► Graphite Expansion Rack Specifications

POWER INPUT

Input Voltage: 9-32 VDC
Must use a Class 2 circuit according to National Electrical Code (NEC), NFPA-70 or Canadian Electrical Code (CEC), Part I, C22.1 or a Limited Power Supply (LPS) according to IEC 60950-1 or limited-energy circuit according to IEC 61010-1.
Power Requirements (Expansion Rack): 13 W per rack; 52 W total
Power Requirements (Graphite Host):

Model	Typical	Max	With Modules	Module Slots	Max Modules
G07C	9 W	16 W	37 W	5	17
G07S	10 W	17 W	38 W	5	17
G09	13 W	20 W	45 W	6	18
G10C/R	12 W	19 W	48 W	7	19
G10S	18 W	24 W	53 W	7	19
G12	16 W	23 W	56 W	8	20
G15	20 W	27 W	60 W	8	20

CONNECTORS

USB Host: One (1) USB Type A - complies with USB specification 2.0; Supports full-speed data transfers
Power: High compression cage-clamp terminal block
Wire Strip Length: 0.3" (7.5 mm)
Wire Gauge Capacity: One 14 AWG (1.63 mm) solid, two 18 AWG (1.02 mm) or four 20 AWG (0.81 mm)

ENVIRONMENTAL

Operating Temperature: -40°C to 75°C*
Storage Temperature: -40°C to 85°C
Operating Humidity: 0% to 80% (non-condensing, from 0 to 50°C)
Altitude: Up to 2000 meters
Panel Mount Vibration: IEC 68-2-6: Operational 5-500 Hz, 4 g
Panel Mount Shock: IEC 68-2-27: Operational 40 g (10 g, modules w/ relays)
DIN Rail Mount Vibration: IEC 68-2-6: Operational 5-500 Hz, 2 g**
DIN Rail Mount Shock: IEC 68-2-27: Operational 15 g (10 g, modules w/relays)**
Requires DIN Rail type: DIN 1010, DIN 1065 or DIN 3065

CERTIFICATIONS AND COMPLIANCES

Product Safety:
CE Approved
EN 61326-1 Immunity to Industrial Locations Emission CISPR 11 Class A
IEC/EN 61010-1
cULus Listed: File #E302106
cULus Hazardous: File #E317425
Other:
RoHS Compliant

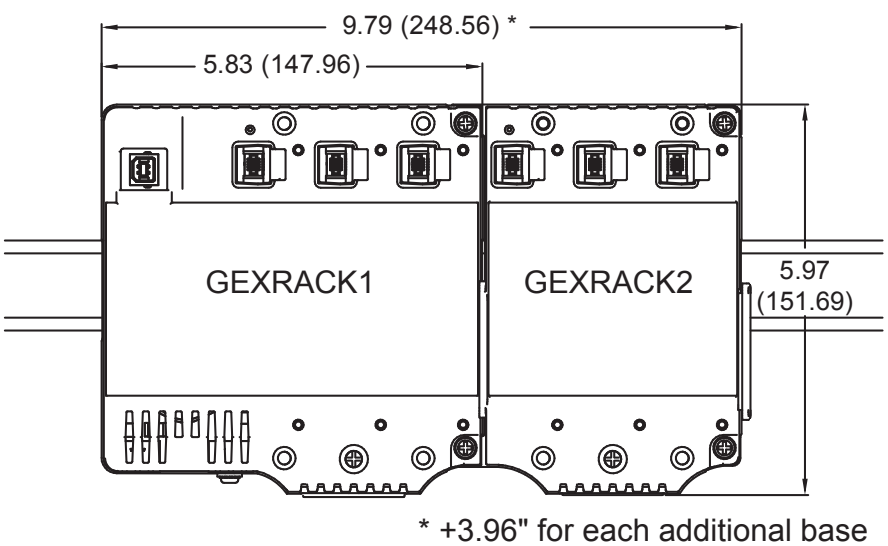
MECHANICAL

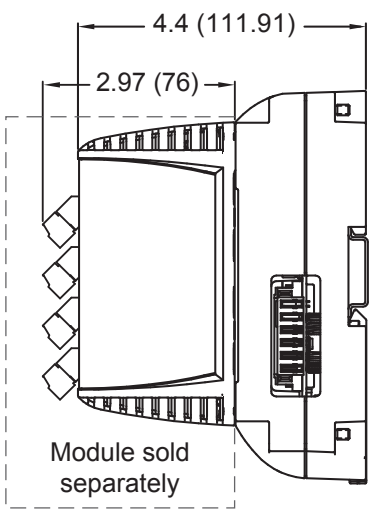
Case body is all metal. Installation Category II, Pollution Degree 2 as defined in IEC 60664-1
Wide Rack (Base):
Height: 5.97" (15.1 cm)
Width: 5.83" (14.7 cm)
Depth: 4.4" (11.2 cm)
Weight: 1.78 lbs (0.79 kg)
Standard Rack (Expansion):
Height: 5.97" (15.1 cm)
Width: 3.96" (10.1 cm)
Depth: 4.4" (11.2 cm)
Weight: 1.33 lbs (0.59 kg)
Mounting: Panel mount or DIN rail

Specifications are subject to change.

* Modules or host devices may restrict temperature; refer to module documentation.
** DIN latch CAM must be in latched position

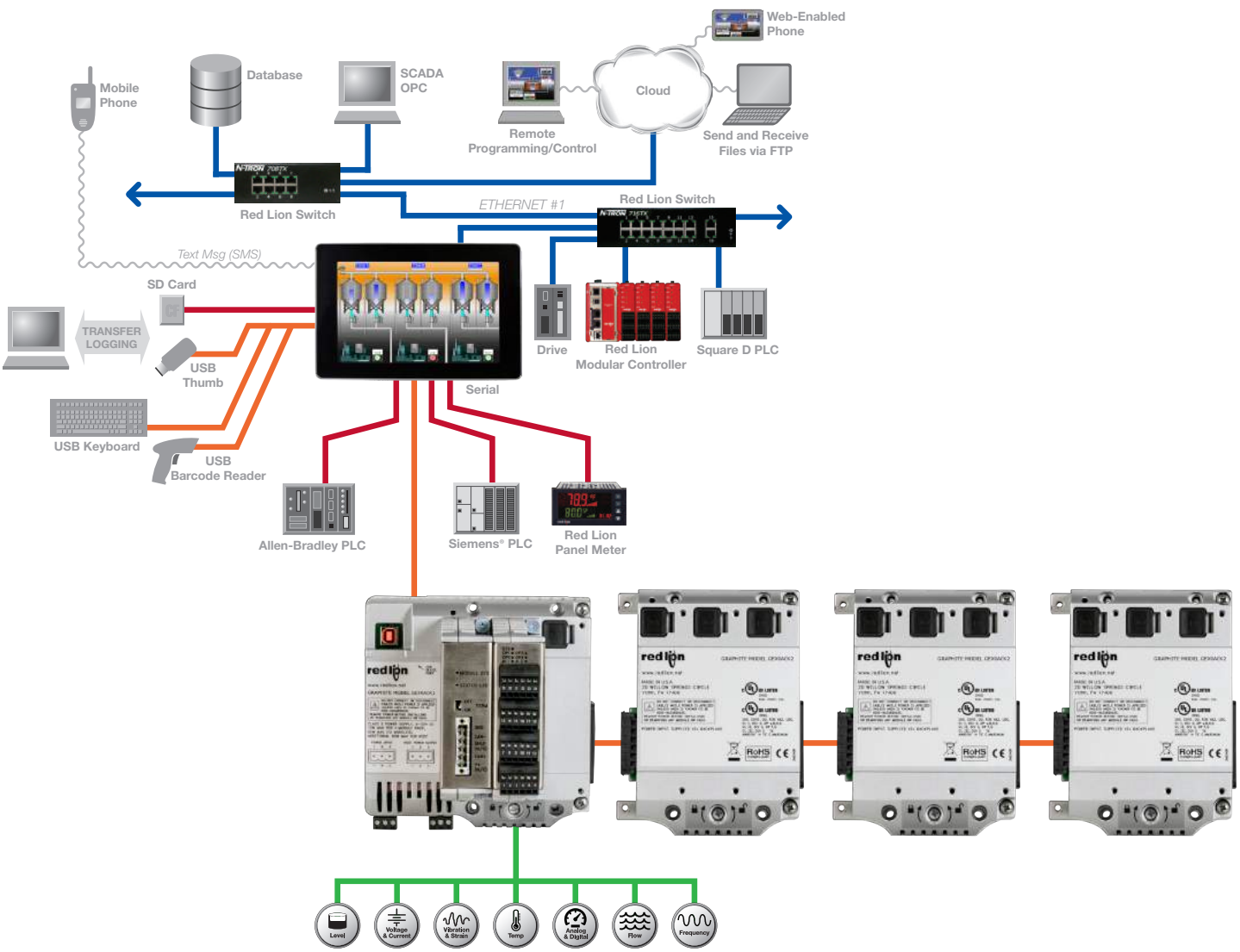
DIMENSIONS





ORDERING GUIDE

MODEL NUMBER	DESCRIPTION
GEXRACK1	Graphite Wide Expansion Rack for Modules
GEXRACK2	Graphite Standard Expansion Rack for Modules
CBLUSBM0	USB Tethering Cable, 0.5 M Metal Jacketed
CBLUSBM1	USB Tethering Cable, 1 M Metal Jacketed
CBLUSBM2	USB Tethering Cable, 2 M Metal Jacketed



Graphite® HMIs

Red Lion Automation Series

▶▶▶ Rugged Operator Panels with Modular I/O

The Graphite® operator panels are the industry's first rugged HMI touchscreens to combine I/O modules with protocol conversion, data logging, web-based monitoring and IEC 61131 control capabilities.

Available in eight different sizes ranging from 7" to 15", Graphite HMIs feature sleek full-color touchscreens in a streamlined, compact footprint for easy installation. Rugged cast-aluminum construction supports outdoor and indoor display with wide operating temperatures and high shock/vibration tolerances that enable organizations to connect, monitor and control processes regardless of environment. Unify disparate devices by converting up to 20 industrial protocols simultaneously from a built-in library of over 300 supported drivers. In addition, select from a wide variety of module and expansion options to seamlessly extend capabilities and address varying requirements.

INDUSTRY APPLICATIONS

- Factory Automation
- Oil & Gas
- Power & Utilities
- Maritime
- Water/Wastewater
- Plastic Extrusion
- Data Acquisition
- Industrial Internet of Things (IIoT)

PRODUCT HIGHLIGHTS

- Protocol Conversion of over 300+ Drivers
- Built-In Web Server for Remote Access
- Real-Time Data Logging to SD Card or via FTP
- Rugged Construction for Extreme Protection
- Wide Operating Temperature Range
- Outdoor Sunlight-Readable Models
- Scalable Modules and Expansion Options
- IEC 61131 control capabilities with Crimson Control

FEATURES & BENEFITS

- Sleek Full-Color HMI Touchscreens
  - 7" to 15" models with narrow tablet-style bezels
  - Outdoor sunlight-readable and widescreen models
- Versatile Module and Expansion Options
  - Choose from a mix of I/O, PID control or communication to populate up to 8 local module slots*
  - Use Crimson Control module for enhanced IEC 61131 logic control programming
  - Connect Graphite Expansion Racks to easily scale
  - Extend even further with E3 I/O™ high-density modules
- Rugged Environmental Specifications
  - Wide -20° to 60°C HMI operating temperature
  - High shock and vibration tolerance
  - CE, UL/cUL, UL/cUL Hazardous, ATEX, IECEx and ABS approvals
- Industry-Leading Protocol Conversion
  - Communicate with over 300 industrial protocols
  - Support up to 20 simultaneous protocols
  - Convert between serial, USB and Ethernet devices
  - Manage multi-vendor environments with ease
- Powerful Integration Functionality
  - Intuitive Crimson 3.0 software for easy drag-and-drop configuration
  - Ethernet, USB and serial ports make communication simple
  - Built-in data logging enhances troubleshooting and helps meet regulatory requirements
  - Robust web server provides remote access and control to reduce costly site visits

* Model dependent

industrial automation

►►► Graphite Specifications

COMMUNICATION PROPERTIES

USB Ports
- Programming Port: One (1) USB Type B adheres to USB specification 1.1
- Host Ports: Two (2) USB Type A complies with USB specification 2.0
  - Supports full-speed data transfers
  - Hardware over current protected (0.5 A max per port)

Serial Ports: Format/Baud rates independently configurable
- Programming Port: One (1) RS-232 port with RJ12 connector
- Communication Ports:
  - One (1) RS-232 port via RJ12 connector
  - One (1) RS-422/485 port via RJ45 connector
- Optional Serial Ports:
  - One (1) RS-232 port via RJ12 connector
  - One (1) RS-422/485 port with via RJ45 connector

Ethernet Ports: 1500 Vrms network isolation
- One (1) 10/100Base-T(X) port via RJ45 connector
- Optional Ethernet Port: One (1) 10/100Base-T(X) port via RJ45 connector

POWER INPUT

10 to 30 VDC

Model	Typical	Max	With Modules
G07C	9 W	16 W	37 W
G07S	10 W	17 W	38 W
G09	13 W	20 W	45 W
G10C/R	12 W	19 W	48 W
G10S	18 W	24 W	53 W
G12	16 W	23 W	56 W
G15	20 W	27 W	60 W

Must use a Class 2 circuit according to National Electrical Code (NEC), NFPA-70 or Canadian Electrical Code (CEC), Part I, C22.1 or a Limited Power Supply (LPS) according to IEC 60950-1 or Limited-energy circuit according to IEC 61010-1. Power connection via removable three position terminal block.

Battery: Lithium coin cell
- Typical lifetime of 10 years

POWER CONNECTION

High compression cage-clamp terminal block
Wire Strip Length: 0.3" (7.5 mm)
Wire Gauge Capacity: One 14 AWG (1.63 mm) solid, two 18 AWG (1.02 mm) or four 20 AWG (0.81 mm)

NETWORK MEDIA

10BaseT: ≥ Cat3 cable
100BaseTX: ≥ Cat5 cable

ENVIRONMENTAL

Operating Temperature: -20°C to 60°C
Storage Temperature: -20°C to 70°C
Operating Humidity: 0 to 85% (non condensing)
Operating Altitude: Up to 2000 meters
Shock: 40 g per IEC 68-2-27
Vibration: 4 g @ 5-500 Hz per IEC 68-2-6

LCD DISPLAY

Touchscreen: Resistive analog

Model	Size	Pixels	Brightness	Backlight
G07C	7 in	800 X 480	500 cd/m²	50,000 HR TYP.
G07S	7 in	800 X 480	1000 cd/m²	70,000 HR TYP.
G09	9 in	800 X 480	400 cd/m²	70,000 HR TYP.
G10C	10 in	640 X 480	450 cd/m²	70,000 HR TYP.
G10R	10 in	800 X 600	400 cd/m²	70,000 HR TYP.
G10S	10 in	640 X 480	1500 cd/m²	35,000 HR TYP.
G12	12 in	1280 X 800	400 cd/m²	70,000 HR TYP.
G15	15 in	1024 X 768	400 cd/m²	70,000 HR TYP.

CERTIFICATION & COMPLIANCE

CE Approved
- EN 61326-1 Immunity to Industrial Locations Emission CISPR 11 Class A
- IEC/EN 61010-1
- RoHS Compliant

ATEX Approved
- II 3 G Ex ic nA IIC T4 Gc
- II 3 D Ex tc IIIC T135°C Dc
- DEMKO 14 ATEX 1387X
- EN 60079-0, -11, -15, -31

IECEx Approved
- Ex ic nA IIC T4 Gc
- Ex tc IIIC T135°C Dc
- IECEx UL 15.0035X
- IEC 60079-0, -11, -15, -31

UL Approved
cULus Listed for Ordinary Location: File #E302106
- UL 61010-1, -2-201

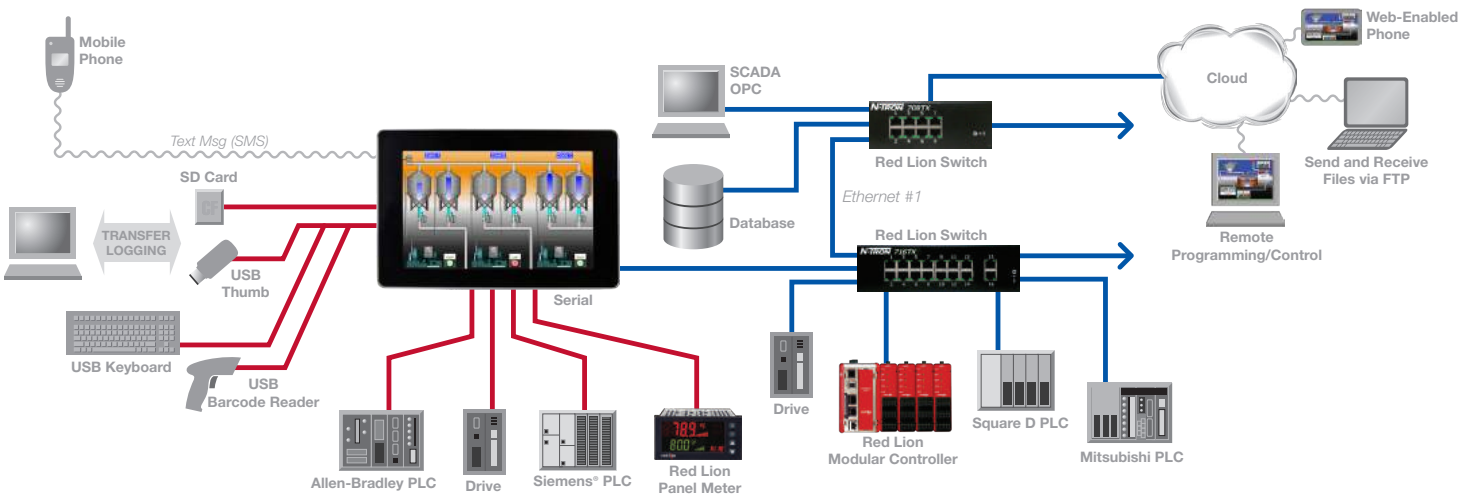
cULus Listed for Hazardous Location: File #E317425
- Class I, Division 2, Groups A, B, C and D
- Class II, Division 2, Groups F and G
- Class III, Division 2
- ANSI/ISA 12.12.01, C22.2 No. 213-M1987, 157-92

Type 4X Indoor / IP66 Enclosure rating (Face only) for all models Type 4X Outdoor Enclosure rating (Face only) for GxxSxxxx models
ABS Type Approval for Shipboard Applications

MECHANICAL

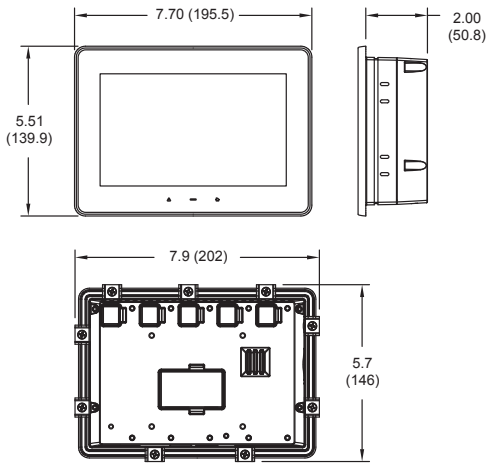
Construction: Cast aluminum enclosure with NEMA 4X/IP66 rating for indoor/outdoor use when correctly fitted with the gasket provided. Installation Category II, Pollution Degree 2.
Weight:
- G07 – 2.26 lb. (1.03 kg)
- G09 – 3.39 lb. (1.54 kg)
- G10 – 4.80 lb. (2.18 kg)
- G12 – 5.06 lb. (2.29 kg)
- G15 – 7.73 lb. (3.50 kg)

Specifications are subject to change.



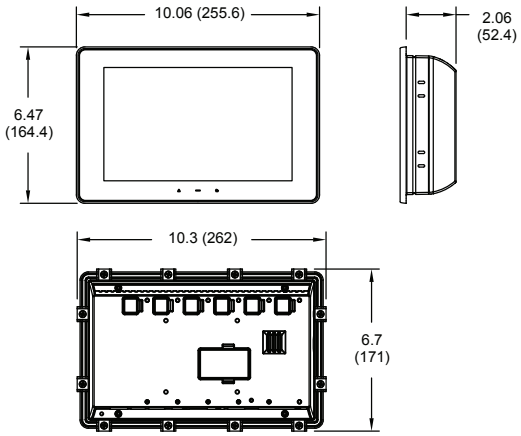
▶▶▶ Graphite Dimensions *in Inches (mm)*

G07



(MOUNTING CLIPS INSTALLED)

G09



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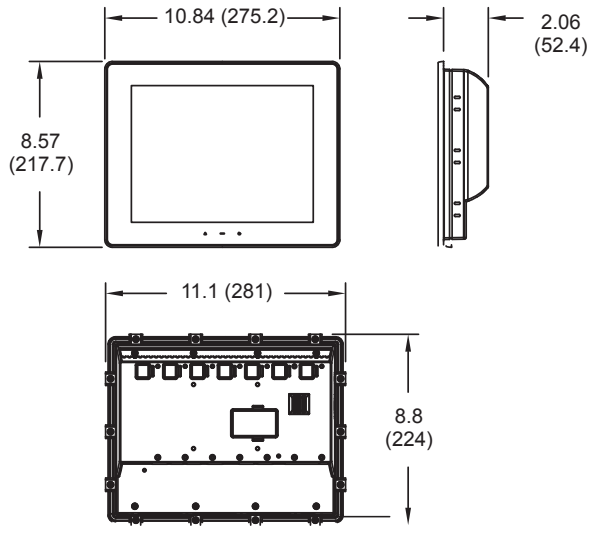
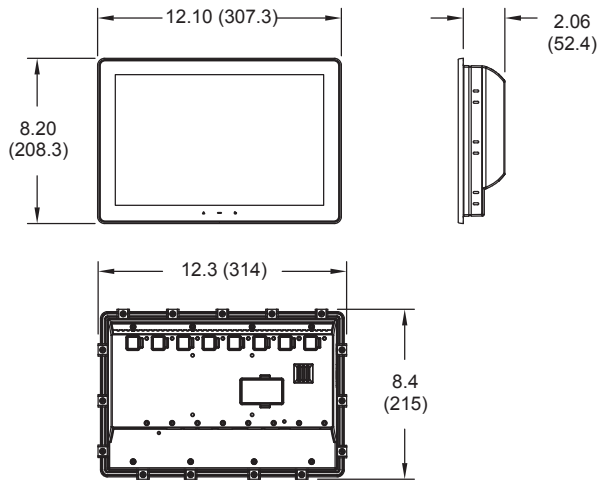
G10



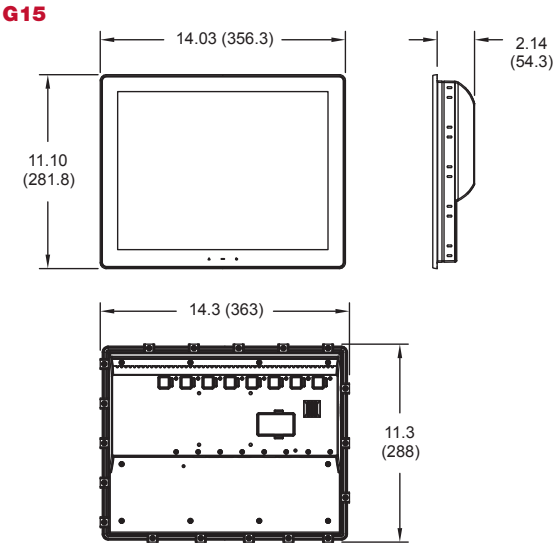
(MOUNTING CLIPS INSTALLED)

G12



(MOUNTING CLIPS INSTALLED)

G15



(MOUNTING CLIPS INSTALLED)

▶▶▶ Graphite Ordering Guide

GRAPHITE OPERATOR PANELS

MODEL NUMBER	DESCRIPTION
G07C0000	7" Operator Interface Terminal for Indoor Use
G07S0000	7" Operator Interface Terminal for Outdoor Use
G09C0000	9" Operator Interface Terminal for Indoor Use
G09C1000	9" Operator Interface Terminal for Indoor Use
G10C0000	10" Operator Interface Terminal for Indoor Use
G10C1000	10" Operator Interface Terminal for Indoor Use
G10S0000	10" Operator Interface Terminal for Outdoor Use
G10S0000	10" Operator Interface Terminal for Outdoor Use
G10R0000	10" Operator Interface Terminal, High Resolution Display for Indoor Use
G10R0000	10" Operator Interface Terminal, High Resolution Display for Indoor Use
G12C0000	12" Operator Interface Terminal for Indoor Use
G12C1100	12" Operator Interface Terminal with Aux. Ethernet and dual RS485 ports
G15C0000	15" Operator Interface Terminal for Indoor Use
G15C1100	15" Operator Interface Terminal with Aux. Ethernet and dual RS485 ports

CRIMSON CONTROL MODULE

MODEL NUMBER	DESCRIPTION
GMCC0000	Graphite Module, enables IEC 61131 control capabilities via Crimson Control

PID CONTROL MODULES

MODEL NUMBER	DESCRIPTION
GMP1RA00*	Graphite Module, Single PID, Relay and Analog Outputs
GMP1RM00*	Graphite Module, Single PID, Relay Outputs, Heater Current Monitor
GMP1SA00	Graphite Module, Single PID, SSR and Analog Outputs
GMP1SM00	Graphite Module, Single PID, SSR Outputs, Heater Current Monitor
GMP2R000*	Graphite Module, Dual PID, Relay Outputs
GMP2RM00*	Graphite Module, Dual PID, Relay Outputs and Heater Current Monitor
GMP2S000	Graphite Module, Dual PID, SSR Outputs
GMP2SM00	Graphite Module, Dual PID, SSR Outputs and Heater Current Monitor

DATA ACQUISITION MODULES

MODEL NUMBER	DESCRIPTION
GMDIOR00*	Graphite Module, Digital I/O, 8 Inputs and 6 Relays Outputs
GMDIOS00	Graphite Module, Digital I/O, 8 Inputs and 6 Solid State Outputs
GMUIN400	Graphite Module, 4 Universal Analog Inputs
GMOUT400	Graphite Module, 4 Analog Outputs
GMINI800	Graphite Module, 8 DC Current Inputs
GMINV800	Graphite Module, 8 DC Voltage Inputs
GMTC8000	Graphite Module, 8 Thermocouple Inputs
GMRTD600	Graphite Module, 6 RTD Inputs
GMSG10R0*	Graphite Module, 1 Strain Gage Input, Relay Output
GMSG10S0*	Graphite Module, 1 Strain Gage Input, SSR Output
GMSG11R0*	Graphite Module, 2 Strain Gage Input, Relay Output
GMSG11SO*	Graphite Module, 2 Strain Gage Input, SSR Output

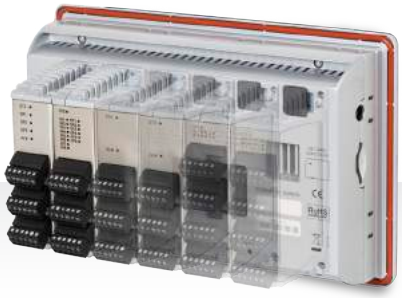
COMMUNICATION MODULES

MODEL NUMBER	DESCRIPTION
GMCAN000*	Graphite Module, CAN Protocol Interface
GMJ19390*	Graphite Module, J1939 Protocol Interface
GMDN0000*	Graphite Module, DeviceNet Protocol Interface
GMPBDP00*	Graphite Module, PROFIBUS DP Protocol Interface
GMHSPA00*	Graphite Module, HSPA+ Cellular

EXPANSION RACKS

MODEL NUMBER	DESCRIPTION
GEXRACK1	Graphite Wide Expansion Rack for Modules
GEXRACK2	Graphite Standard Expansion Rack for Modules
CBLUSBM0	USB Tethering Cable, 0.5 M Metal Jacketed
CBLUSBM1	USB Tethering Cable, 1 M Metal Jacketed
CBLUSBM2	USB Tethering Cable, 2 M Metal Jacketed

* Non ATEX approved modules



BUILD THE PERFECT HMI SOLUTION.

With up to eight available plug-and-play module slots and additional expansion rack options, Graphite HMIs provide a scalable all-in-one platform to help integrate complex multi-vendor environments. Employing modules to address PID control, data acquisition and communication, Graphite HMIs allow users to connect, monitor and control a wide array of equipment to meet specific application requirements. In addition, our Crimson Control module enables users to leverage industry-standard IEC 61131 programming languages such as Ladder Logic, Function Block, Structured Text and Instruction List to develop logic code much like a Programmable Logic Controller (PLC) or Remote Telemetry Unit (RTU) without the added expense.

red lion®

Connect. Monitor. Control.

NT24k®-8TX-POE Industrial PoE+ Switch

N-Tron® Networking Series

▶▶▶ Industrial Managed Gigabit PoE+ Ethernet Switch

Red Lion's N-Tron® series NT24k®-8TX-POE compact managed Gigabit Ethernet switch features eight 10/100/1000Base-T(X) ports with PoE+ providing a robust solution for transmitting power and data to equipment in harsh environments.

The NT24k-8TX-POE managed switch features 8 ports (eight Gigabit IEEE 802.3af/at Power over Ethernet Plus (PoE+) ports) and is housed in a compact, hardened metal DIN-rail enclosure with redundant 22-49 VDC power inputs. Designed to handle the most demanding environments, the NT24k-8TX-POE provides up to 30 Watts of power per port, high shock and vibration ratings and a wide -40° to 80°C operating temperature range.

APPLICATIONS

- Alternative Energy
- Manufacturing
- Oil & Gas
- Transportation
- Water/Wastewater

PRODUCT HIGHLIGHTS

- IEEE 802.3af/at PoE+ Output
- Smart Plug-and-Play Operation
- 22 to 49 VDC Redundant Power Inputs
- -40° to 80°C Wide Operating Temperature
- Robust Remote Monitoring
- N-Ring™ & N-Link™ Network Ring Technology

FEATURES & BENEFITS

- 8 Copper Ports
  - Eight 10/100/1000Base-T(X) copper ports, supporting PoE+ on each port
- Redundant 22 to 49 VDC Power Inputs
  - Boosts power to meet PoE+ output requirements
- IEEE 802.3af/at PoE Output
  - Supports PoE+ output on all copper ports simultaneously
- Extended Environmental Specifications
  - -40° to 80°C operating temperature range
  - > 2M hours MTBF
  - UL/cUL: Class I, Div. 2 Groups A, B, C and D
- Plug-and-Play Operation:
  - IGMP auto-configuration
  - MDIX auto-sensing cable
  - Simple network ring configuration
  - Backup and restore via recovery card or XML
- Fully Managed Features Include:
  - Jumbo frame support
  - SNMP v1, v2, v3
  - Web browser management
  - Detailed ring map and fault location charting
  - RSTP - 802.1d, 802.1w, 802.1D
  - Trunking and port mirroring
  - 802.1Q tag VLAN and port VLAN
  - IEEE 802.1x with RADIUS remote server authentication
  - 802.1p QoS, port QoS and DSCP
  - DHCP client
  - Event Log
  - SNTP (Simple Network Time Protocol)
  - Multi-Member N-Ring technology with ~30ms healing
  - N-Link redundant ring technology
  - N-View™ monitoring technology
  - EtherNet/IP™ CIP™ messaging

industrial networking

LISTED 65SN

RoHS compliant

EtherNet/IP

▶▶▶ NT24k-8TX-POE Specifications

SWITCH PROPERTIES

Operation: Managed
Number of MAC Addresses: 16,000
IEEE Compliant: 802.3, 802.3u, 802.3ab, 802.3x, 802.3af/at, 802.1d/D/w, 802.1p, 802.1Q, 802.1x
Latency (Typical):1.6 µs
Switching Method: Store-and-Forward
Supports 30 Watts per Port (25.5 Watts at the PD)
LED Status Indicators
Configurable Alarm Contact
Onboard Temperature Sensor
Supports Full/Half Duplex Operation
Maximum Throughput: Up to 16 Gb/s
MDIX Auto Sensing Cable
Auto Sensing Speed and Flow Control
Communications: Full Wire Speed
MTBF: >2 million hours

POWER INPUT

Input Voltage: 22-49 VDC
Steady Input Current: 10.94 A @ 24 VDC
Inrush: 68.0 A / .09 ms @ 24 VDC
BTU/HR: 122

POWER OVER ETHERNET

PoE Standard: IEEE 802.3af/at Gigabit PSE
PoE Output Power: 57 VDC / 30 Watts Output (25.5 W at PD)
Power Pin Assignment: Pins 1/2 (-), Pins 3/6 (+)
PSE Type: Type 2

CONNECTORS

10/100/1000BaseT: Eight (8) RJ-45 ports
ESD and surge protection diodes on all copper ports
Configuration Port: One (1) USB Type B

NETWORK MEDIA

10BaseT: ≥ Cat3 cable
100BaseTX: ≥ Cat5 cable
1000BaseT: ≥ Cat5e cable

RECOMMENDED WIRING CLEARANCE

Front: 2” (5.08 cm)
Top: 4” (10.16 cm)

ENVIRONMENTAL

Operating Temperature: -40°C to 80°C
Storage Temperature: -40°C to 85°C
Operating Humidity: 10% to 95% (non condensing)
Operating Altitude: 0 to 10,000 ft.
Shock: 200 g @ 10 ms (bulkhead mounted)
Vibration: 50 g @ 5-200 Hz, Triaxial (bulkhead mounted)

CERTIFICATION & COMPLIANCE

Product Safety:
ANSI/ISA 12.12.01-2013 Class I and II, Div. 2 and Class III, Div. 1 and 2, Groups A, B, C and D Hazardous Locations
UL508 Industrial Control Equipment
CAN/CSA-C22.2 No. 213-M1987 Class I Div. 2 Hazardous Locations
CAN/CSA-C22.2 No. 14-M1987 Industrial Control Equipment
Emissions:
FCC Title 47, Part 15, Radio Frequency Devices, Subpart B ANSI C63.4-2009; Industry Canada ICES-003, EN 55011; EN 61000-6-4, EN 61000-3-2, EN61000-3-3, EN 55032
Immunity:
EN 55024, EN 61000-6-2; IEC 61000-4-2 (ESD); IEC 61000-4-3 (RFAM); IEC 61000-4-4 (EFT); IEC 61000-4-5 (SURGE); IEC 61000-4-6 (RFCM); IEC 61000-4-8 (PFMF); IEC 61000-4-11 (VDI)
Rail:
EN 50155, EN 50121 and EN 61373
Designed to Comply with:
IEEE 1613 (Electric Utility Substations), NEMA TS1/TS2 (Traffic Control)
Other:
ABS Type Approval for Shipboard Applications; EMC Directive 2014/30/EU; LV Directive 2014/35/EU GOST-R, RoHS Compliant

MECHANICAL

Case Dimensions:
Height: 5.88” (14.92 cm)
Width: 4.28” (10.88 cm)
Depth: 5.54” (14.07 cm)
Weight: 3.13 lbs (1.42 kg)
Mount: DIN Rail 35 mm

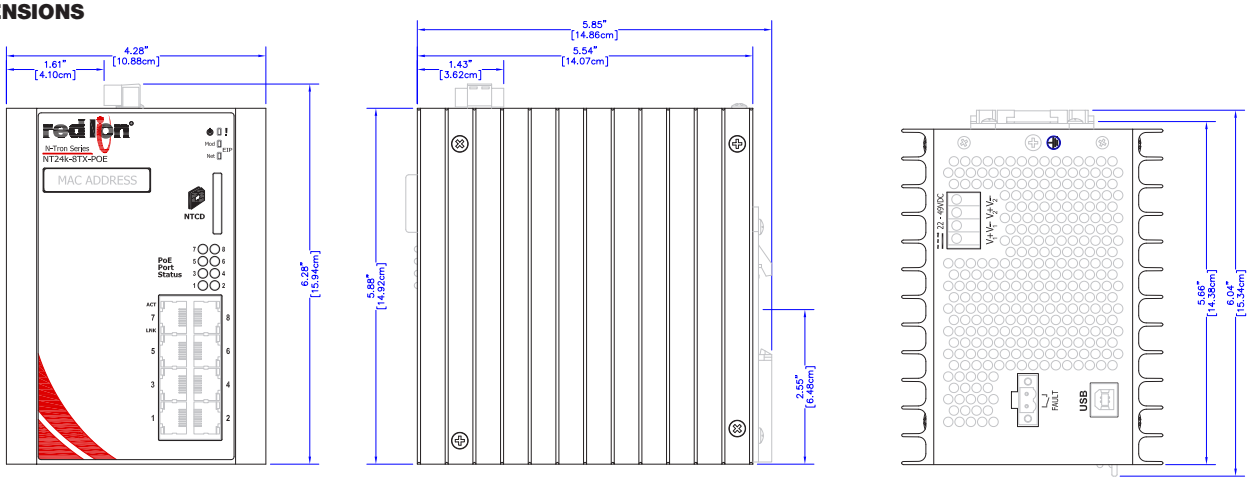
WARRANTY

3 Years on Design and Manufacturing Defects

ORDERING GUIDE

PART NUMBER	DESCRIPTION
NT24K-8TX-POE	Eight Port 10/100/1000BaseT Managed PoE+ Industrial Ethernet Switch
NTCD-CFG	NT24k Configuration Recovery Device
NTPS-24-20	DIN-Rail Power Supply 20 Amp @ 24 VDC
NTPS-48-10	DIN-Rail Power Supply 10 Amp @ 48 VDC
NT24K-NM-PMK	NT24k Non-Modular Panel Mount Kit

DIMENSIONS



All specifications are subject to change. Consult the company website for more information.

PAX® 2C PID Controller

Red Lion Automation Series

▶▶▶ Advanced Industrial PID Controller

Red Lion's PAX®2C Controllers work with field installable cards to enable users to change or replace capabilities to meet temperature and process application requirements.

From the dual line, tri-color display to universal power and input capabilities, Red Lion's PAX2C PID controllers are packed full of features that set it apart from other PID controllers. Choose from a range of field-installable output cards for inputs, outputs and communications option to deliver an ideal solution for applications requiring multiple parameters to be visualized or controlled at the same time. Ramp Soak capabilities allow users the ability to change and hold machine temperature – either up or down – for a specific time period to easily integrate time-stepped processes. In addition, the PAX2C offers color changing display with multiple zones, built-in USB programming port and configuration software.

INDUSTRY APPLICATIONS

- Factory Automation
- Food & Beverage
- Heat Treatment
- Packaging
- Plastics & Molding
- Water/Wastewater

PRODUCT HIGHLIGHTS

- Field Installable Function & Option Cards
- Multiple PID Control Capabilities
- Universal Sensor and Power Inputs
- Built-In USB Programming Port
- Configuration Software Included
- Multi-Color Changing Display
- Up To 16 Alarms with Boolean Logic Functionality

FEATURES & BENEFITS

- Powerful Crimson 2.0 Software
  - Reduces configuration time and effort
  - Easy to store for multiple unit configuration
- Field Installable Cards
  - Easy to add or replace functions or option cards
  - Wide range of function and options
  - Reduces on-hand inventory of PID controllers
- Multi-Color Displays
  - Easy to read numerical and bar-graph displays
  - Color change promotes easy-to-see process changes
  - Dual line display
- Ramp Soak Capability
  - 16 profiles with up to 20 step changes
  - Supports wide variety of application requirements
- Universal Inputs
  - Sensor inputs accepts DC Current/Voltage, Process Signals, Thermocouples, RTDs and Resistance
  - Power input accepts AC or DC power without polarity
- Built-In Programming Port
  - Eliminates external converters
  - Reduces wiring time
  - Ideal for multiple unit configuration
- Setpoint Capability
  - Relay, solid state and triac cards
  - Up to 16 alarms with Boolean Logic functionality

industrial automation

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PROCESS CONTROL EQUIPMENT

►►► PAX2C PID Controller Specifications

DISPLAY PROPERTIES
Negative image LCD with tri-color backlight.
The display is divided into seven independently programmable color zones: Line 1, Line 2, Universal Annunciators (1-4) & Mnemonics
Vertical Model: Line 1 - 0.51" (13.0 mm), Line 2 - 0.44" (11.2 mm)
Horizontal Model: Line 1 - 0.62" (15.7 mm), Line 2 - 0.47" (12.0 mm)
Display Range: -1999 to 9999

POWER
AC Power: 40 to 250 VAC, 50/60 Hz, 20 VA
DC Power: 21.6 to 250 VDC, 8 W

KEYPAD
2 programmable function keys, 4 keys total

A/D CONVERTER
24 bit resolution

UPDATE RATES
A/D conversion rate: programmable 5 to 40 readings/sec.

INPUT CAPABILITIES
Current Input: ± 250 µADC, ± 2.5 mADC, ± 25 mADC, ± 250 mADC, and ±2 ADC
Voltage Input: ± 250 mVDC, ± 2.0 VDC, ± 10 VDC, ± 25 VDC, ± 100 VDC, and ± 200 VDC
Thermocouple Input: T, E, J, K, R, S, B, N, and C
RTD Input: 100Ω Pt (Alpha 0.00385 and 0.00392) 120Ω Nickel (Alpha 0.00672) and 10Ω Copper (Alpha 0.00427)
Resistance Input: 100Ω, 1,000Ω, and 10 K Ω

EXCITATION POWER
Jumper selectable
Transmitter Power: +18 VDC @ 50 mA
Reference Voltage: +2 VDC, ± 2%
Reference Current: 1.05 mADC, ± 2%

CUSTOM LINEARIZATION
Data Point Pairs: Selectable from 2 to 16
Display Range: -1999 to 9999
Decimal Point: 0 to 0.000

SETPOINT PROFILE
Profiles: 16
Segments per Profile: 20 ramp or hold segments (linkable up to 320 segments)
Segment Time: 0 to 999.9 or 9999 minutes; can be extended by linking
Ramp Rate: 0 to 9999 process units per minute (optional selection replaces Segment Time)
Error Band Conformity: Delays profile execution; Off or 1 to 9999 process unit's of deviation
Power-On Modes: Stop, start, or profile resume
Profile End Modes: End (control to last executed profile setpoint), Stop (terminate profile and disable PID control), OFF (terminate profile and control to setpoint selected by SPSL), SP1-SP6 (terminate profile and control to chosen setpoint)
Profile Auto Cycle: 0 to 250, 0 = continuous
Event Outputs: 4 Event Flags, profile segment activated (can be mapped to Outputs)
Setpoint Profile Selection/Control: Front panel buttons, user input, or MODBUS communications

CONTROL SETS
Setpoints: 7; SP1-SP6 and SPu
Control Sets: 6, CS1-CS6; (linked combination of setpoint, SPx value and PID Set PSx)
PID gain sets: 6, PS1-PS6; includes PID constants, Output Power Offset, Output power filter, and Heat/Cool gains
Control Set Selection: Front panel buttons or user input, or MODBUS communications

MEMORY
Nonvolatile FRAM memory retains all programmable parameters and display values

INPUTS
Two programmable user inputs

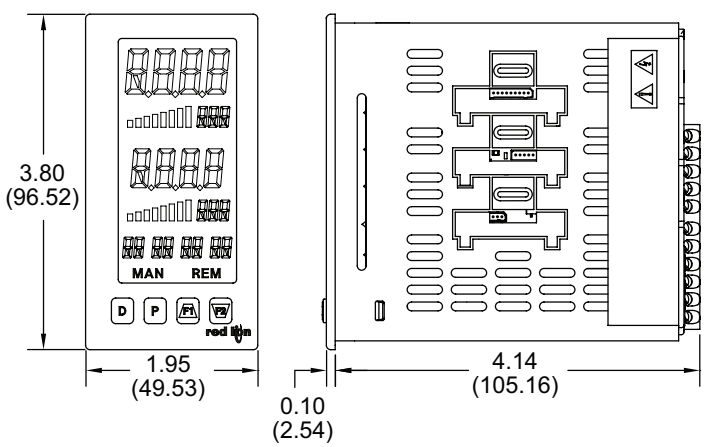
CERTIFICATION & COMPLIANCE
Refer to EMC Installation Guidelines section of the bulletin for additional information
UL Listed: File #E179259

CONNECTIONS
High compression cage-clamp terminal block

ENVIRONMENTAL
Operating Temperature Range: 0 to 50 °C
Storage Temperature Range: -40 to 60 °C
Operating and Storage Humidity: 0 to 85% max. relative humidity non-condensing
Altitude: Up to 2000 meters

MECHANICAL
Construction: This unit is rated for NEMA 4X/IP65 indoor use; IP20 Touch safe; Installation Category II, Pollution Degree 2; One piece bezel/case; Flame resistant; Synthetic rubber keypad; Panel gasket and mounting clip included
Weight: 8 oz. (226.8 g)

DIMENSIONS *In inches (mm)*



Note: To determine dimensions for horizontal units, swap height and width.

ORDERING INFORMATION

PART NUMBER	MODEL	DESCRIPTION
PX2CHZ00	PAX2C	Universal Input Temperature/Process Profile Controller, with Flexbus™ Capability, Horizontal
PX2CVR00		Universal Input Temperature/Process Profile Controller, with Flexbus™ Capability, Vertical
PAXCDS10	PAXCDS	Dual Form C Relay Digital Output Card
PAXCDS20		Quad Form A Relay Digital Output Card
PAXCDS30		Quad Sinking Open Collector Digital Output Card
PAXCDS40		Quad Sourcing Open Collector Digital Output Card
PAXCDS50		Dual Triac/Dual SSR Drive Digital Output Card
PAXCDS60		Quad Form C Relay Digital Output Card
PAXCDC10	PAXCDC	RS485 Serial Communications Card with Terminal Block
PAXCDC1C		Extended RS485 Serial Communications Card with Dual RJ11 Connector
PAXCDC20		RS232 Serial Communications Card with Terminal Block
PAXCDC2C		Extended RS232 Serial Communications Card with 9 Pin D Connector
PAXCDC30		DeviceNet Communications Card
PAXCDC50		Profibus-DP Communications Card
PAXCDL10	PAXCDL	Analog Output Card
PX2FCA00	PX2FCA	Process Input/Remote Setpoint/PID Card with Digital Outputs
PX2FCA10		Heater Current Monitor Input Card, with Digital Outputs

Specifications are subject to change.

Dual Line Strain Gage Meter

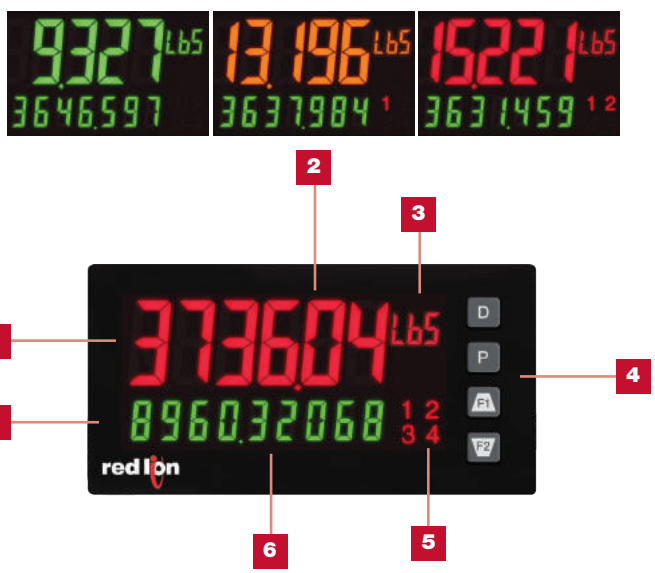
Red Lion PAX®2 Series

▶▶▶ PAX2S - Dual Line Strain Gage Meter

With 9 dual line display and strain gage input, the PAX2S delivers an ideal solution for applications that require two parameters to be visualized at the same time.

The input, gross, tare, total, min, max or setpoints can be displayed on the 0.7" high 6-digit Line 1 of the LCD display. The color change can be tied to the setpoints; providing the operator with a visual display of changing conditions in the application. Line 2 of the display is a 0.35" high 9-digit, green LCD that can be programmed for any of the above parameters as well.

The strain gage input easily connects to load cell, strain gage or pressure sensors. The PAX2S also features a universal power input. Whether it's 40 to 250 VAC or 21.6 to 250 VDC, polarity does not matter.



1. Top Line: 6-Digit 0.7" (18 mm) Display
2. Programmable for Red, Orange or Green
3. Custom Unit Indicator
4. Tactile Feel Buttons
5. Setpoint Annunciators
6. Bottom Line: 9-Digit 0.35" (9 mm) Green Display
7. Built-In USB Port

PRODUCT HIGHLIGHTS

- Load cells, Strain Gage, and Pressure Sensors
- Universal Power Supply: 40 to 250 VAC or 21.6 to 250 VDC
- Built-in USB Port
- Meter Update Rate up to 160/Second
- Built-in Modbus Communications
- Setpoints: Dual and Quad Relay; Quad Sinking; Quad Sourcing/SSR Drive; and Dual Triac/Dual SSR Drive
- Retransmitted Analog Output
- Communications: RS232, RS485, DeviceNet, and Profibus

FEATURES & BENEFITS

- Line 1 of the display offers three programmable easy-to-read colors: red, orange and green
- The display color can be tied to the setpoints
- The 9-digit display accommodates totalizing applications that easily exceed the normal 6-digit displays
- Offers a 3-digit programmable mnemonic; add identification to the display value
- Stock one meter for multiple applications

▶▶▶ PAX2S - Dual Line Strain Gage Meter Specifications

DISPLAY
Positive image LCD
Top Line: 6-digit, 0.71" (18 mm) tri-color backlight
(red, green or orange)
Display range: -199,999 to 999,999
Bottom Line: 9 digit, 0.35" (8.9 mm) green backlight
Display range: -199,999,999 to 999,999,999

POWER
AC Power: 40 to 250 VAC, 50/60 Hz, 20 VA
DC Power: 21.6 to 250 VDC, 8 W

ANNUNCIATORS
Backlight color: Red
1 - setpoint alarm 1 is active
2 - setpoint alarm 2 is active
3 - setpoint alarm 3 is active
4 - setpoint alarm 4 is active
Units Label: programmable 3 digit units annunciator
with tri-color backlight (red, green or orange)

KEYPAD
2 programmable function keys, 4 keys total

A/D CONVERTER
24 bit resolution

UPDATE RATES
A/D conversion rate: programmable 5 to 160 readings/sec.

INPUT CAPABILITIES
Connection Type: 4-wire bridge (differential) or
2-wire bridge (single-ended)
Range: Selectable for ± 24 mVDC or ± 240 mVDC

EXCITATION POWER
Jumper selectable
+5VDC @ 65mADC, +/- 2%
+10VDC @ 125mADC, +/- 2%

TOTALIZER
Time Base: second, minute, hour or day
Batch: Can accumulate (gate) input display from a user input
Time Accuracy: 0.01% typical
Decimal Point: 0 to 0.0000
Scale Factor: 0.001 to 65.000
Low Signal Cut-out: -199,999 to 999,999
Total: 6 digits on Line 1; 9 digits on Line 2

CUSTOM LINEARIZATION
Data Point Pairs: Selectable from 2 to 16
Display Range: -199,999 to 999,999
Decimal Point: 0 to 0.0000

MEMORY
Nonvolatile memory retains all programmable
parameters and display values

INPUTS
Three programmable user inputs

ENVIRONMENTAL
Operating Temperature Range: 0 to 50 °C
Storage Temperature Range: -40 to 60 °C
Operating and Storage Humidity: 0 to 85% max.
RH non-condensing
Altitude: Up to 2000 meters

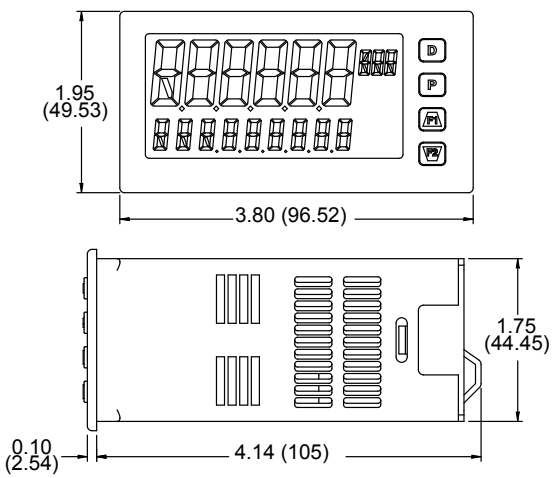
All specifications are subject to change. Consult the company website for more information.

CERTIFICATION & COMPLIANCE
Refer to EMC Installation Guidelines section of the bulletin for
additional information

CONNECTIONS
High compression cage-clamp terminal block

MECHANICAL
Construction: This unit is rated for NEMA 4X/IP65 indoor use;
IP20 Touch safe; Installation Category II, Pollution Degree 2;
One piece bezel/case; Flame resistant; Synthetic rubber keypad;
Panel gasket and mounting clip included
Weight: 8 oz. (226.8 g)

DIMENSIONS *In inches (mm)*



ORDERING INFORMATION

PART NUMBER	MODEL	DESCRIPTION
PAX2S000	PAX2S	Dual Line Display Strain Gage Meter
PAXCDS10	PAXCDS	Dual Setpoint Relay Output Card
PAXCDS20		Quad Setpoint Relay Output Card
PAXCDS30		Quad Setpoint Sinking Open Collector Output Card
PAXCDS40		Quad Setpoint Sourcing Open Collector Output Card
PAXCDS50		Dual Triac/Dual SSR Drive Digital Output Card
PAXCDS60		Quad Form C Relay Digital Output Card
PAXCDC10	PAXCDC	RS485 Serial Communications Card with Terminal Block
PAXCDC1C		Extended RS485 Serial Communications Card with Dual RJ11 Connector
PAXCDC20		RS232 Serial Communications Card with Terminal Block
PAXCDC2C		Extended RS232 Serial Communications Card with 9 Pin D Connector
PAXCDC30		DeviceNet Communications Card
PAXCDC50		Profibus-DP Communications Card
PAXCDL10	PAXCDL	Analog Output Card

red lion®

Connect. Monitor. Control.

PXU PID Controller

Red Lion Automation Series

▶▶▶ Temperature/Process Controllers

The PXU series is the newest addition to the Red Lion PID controller portfolio, offering outstanding control in a small form-factor for industrial environments.

Available in 1/16, 1/8 and 1/4 DIN models, our PXU PID controllers accept a wide variety of thermocouple and RTD sensor inputs to meet varying application requirements. Featuring one of the industry's largest dual line 4-digit displays, the PXU allows for simultaneous viewing of temperature/process and setpoint values. The PXU also offers on demand auto-tuning for easy set up and provides two control outputs, which can be individually configured for reverse or direct applications using front panel push-button or Crimson® software.

With IP65 ingress protection, flush-mounting installation and easy-to-read displays, our robust PID controllers deliver the reliability and ease of use required for temperature and process control applications.

APPLICATIONS

> Food & Beverage
> Factory Automation
> Manufacturing
> Plastic Extrusion

PRODUCT HIGHLIGHTS

> Full PID Control
> Dual Relay Alarms
> Universal Inputs (Temperature or Process)
> UL Listed, 61010-1 Approved

FEATURES & BENEFITS

> Universal Inputs
  - Thermocouple
  - RTD
  - 0-10 VDC
  - 4 – 20 mA (0 – 50 mA)
> Full PID Control
  - On demand auto-tuning
  - Independently configured outputs
> Easy Programming
  - Front panel push-button or Crimson software
> Digital Pot Functionality
> AC or DC Powered Models
  - 100 to 240 VAC
  - 24 VDC
> Reduced Case Depth
> IP 65 Ingress Protection

industrial automation

CE

c UL US LISTED
13RW
PROCESS CONTROL EQUIPMENT

►►► PXU PID Controller Specifications

DISPLAY PROPERTIES
LCD negative image transmissive with backlighting. Top (process) display with orange backlighting, bottom (parameter) display with green backlighting.
4 digits each line
1/4 DIN Model Digit Size: Line 1 - 0.87" (22 mm); Line 2 - 0.55" (14 mm)
1/8 DIN Model Digit Size: Line 1 - 0.47" (12 mm); Line 2 - 0.47" (12 mm)
1/16 DIN Model Digit Size: Line 1 - 0.43" (11 mm); Line 2 - 0.27" (7.0 mm)

POWER CONNECTION
AC Power: 100 to 240 VAC -20/+8 %, 50/60 Hz, 5 VA
DC Power: 24 VDC, ±10%, 5 W

INPUT CAPABILITIES
Temperature/RTD Indication Accuracy: ± (0.3% of span, +1°C) at 25°C
Thermocouple Inputs:
Types: T, E, J, K, R, S, B, N, L, U, and TXK
Resolution: 1° for types R, S, B and 1° or 0.1° for all other types
RTD Inputs:
Type: 2 or 3 wire
Excitation: 180 µA
Process Inputs:
0-5 or 0-10 VDC
0-20 or 4-20 mA
0-50 mV

COMMUNICATION
RS-485 Serial Communication (optional)

OUTPUTS
Time proportioning or DC Analog (mA and mV)
Alarms: 2 relay alarm outputs.
Type: Form A or Form C, model and alarm dependent
Contact Rating: 3 A @ 250 VAC

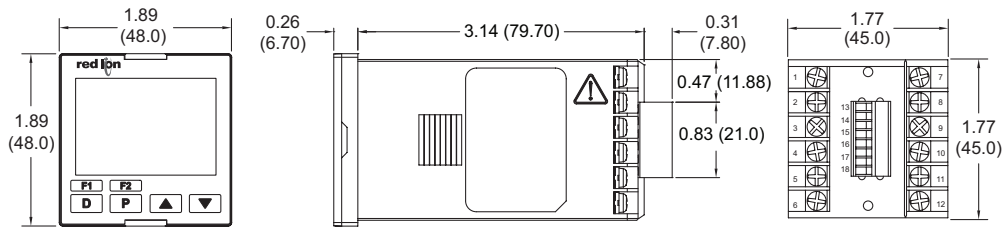
CERTIFICATIONS & COMPLIANCES
CE Approved
EN 61326-1 Immunity to Industrial Locations
Emission CISPR 11 Class A
EN 61010-1
RoHS Compliant
UL Listed: File #E179259
IP65 Enclosure rating (Face only)

ENVIRONMENTAL
Operating Temperature Range: 0 to 50°C
Storage Temperature Range: -20 to 65°C
Operating and Storage Humidity: 80% max relative humidity (non-condensing) from 0°C to 50°C
Vibration Resistance: Operational 10 to 55 Hz, 1 g
Shock Resistance: Operational 30 g
Altitude: Up to 2000 meters

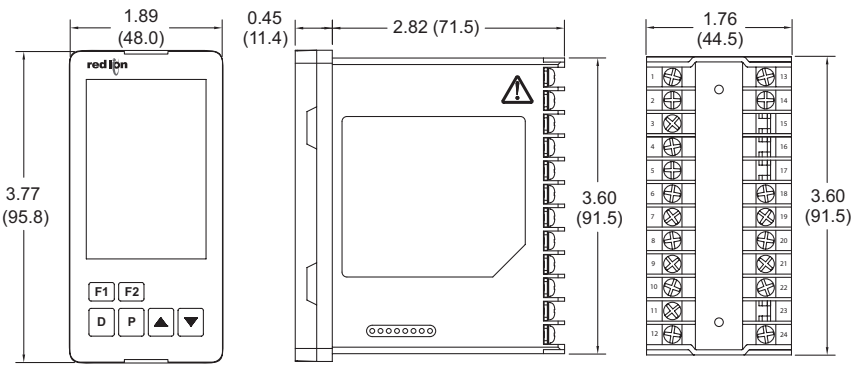
MECHANICAL
Construction: Black plastic alloy case and panel latch. Black plastic textured bezel with transparent display window. Controller meets IP65 requirements for indoor use when properly installed. Installation Category II, Pollution Degree 2.
Weight: 1/4 DIN: 11.0 oz (312 g)
1/8 DIN: 7.8 oz (221 g)
1/16 DIN: 5.3 oz (150 g)

DIMENSIONS *In inches (mm)*

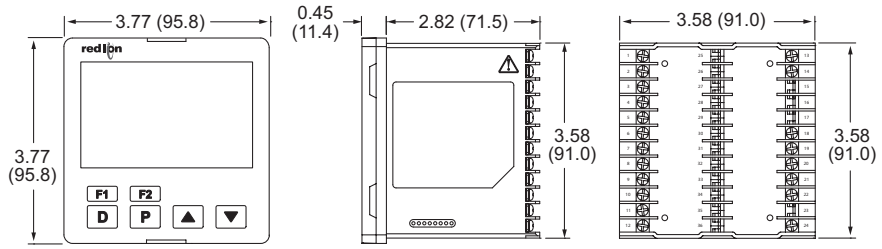
1/16 DIN



1/8 DIN



1/4 DIN



ORDERING GUIDE

PART NUMBER	DIN SIZE	MAIN CONTROL	SECONDARY CONTROL	RS485 COMMS	USER INPUTS	POWER
PXU30020	1/16 DIN	4 to 20 mA	-	-	-	AC
PXU300B0	1/16 DIN	4 to 20 mA	-	-	-	DC
PXU31A20	1/16 DIN	4 to 20 mA	Relay	Yes	Yes	AC
PXU31AB0	1/16 DIN	4 to 20 mA	Relay	Yes	Yes	DC
PXU11A20	1/16 DIN	Dual Relay Output	Relay	Yes	Yes	AC
PXU11AB0	1/16 DIN	Dual Relay Output	Relay	Yes	Yes	DC
PXU40020	1/16 DIN	Linear Voltage	-	-	-	AC
PXU400B0	1/16 DIN	Linear Voltage	-	-	-	DC
PXU41A20	1/16 DIN	Linear Voltage	Relay	Yes	Yes	AC
PXU41AB0	1/16 DIN	Linear Voltage	Relay	Yes	Yes	DC
PXU21A20	1/16 DIN	Logic/Relay	Relay	Yes	Yes	AC
PXU21AB0	1/16 DIN	Logic/Relay	Relay	Yes	Yes	DC
PXU10020	1/16 DIN	Relay Output	-	-	-	AC
PXU100B0	1/16 DIN	Relay Output	-	-	-	DC
PXU20020	1/16 DIN	Solid State Output	-	-	-	AC
PXU200B0	1/16 DIN	Solid State Output	-	-	-	DC
PXU31A30	1/8 DIN	4 to 20 mA	Relay	Yes	Yes	AC
PXU31AC0	1/8 DIN	4 to 20 mA	Relay	Yes	Yes	DC
PXU11A30	1/8 DIN	Dual Relay Output	Relay	Yes	Yes	AC
PXU11AC0	1/8 DIN	Dual Relay Output	Relay	Yes	Yes	DC
PXU40030	1/8 DIN	Linear Voltage	-	-	-	AC
PXU400C0	1/8 DIN	Linear Voltage	-	-	-	DC
PXU21A30	1/8 DIN	Logic/Relay	Relay	Yes	Yes	AC
PXU21AC0	1/8 DIN	Logic/Relay	Relay	Yes	Yes	DC
PXU10030	1/8 DIN	Relay Output	-	-	-	AC
PXU100C0	1/8 DIN	Relay Output	-	-	-	DC
PXU200C0	1/8 DIN	Solid State Output	-	-	-	AC
PXU20030	1/8 DIN	Solid State Output	-	-	-	AC
PXU31A50	1/4 DIN	4 to 20 mA	Relay	Yes	Yes	AC
PXU31AE0	1/4 DIN	4 to 20 mA	Relay	Yes	Yes	DC
PXU11A50	1/4 DIN	Dual Relay Output	Relay	Yes	Yes	AC
PXU11AE0	1/4 DIN	Dual Relay Output	Relay	Yes	Yes	DC
PXU41A50	1/4 DIN	Linear Voltage	Relay	Yes	Yes	AC
PXU41AE0	1/4 DIN	Linear Voltage	Relay	Yes	Yes	DC

SER-485-FXC Industrial Isolated Converter

N-Tron Networking Series

Industrial Isolated Converter

The SER-485-FXC is our premium Industrial Serial to Multi-mode Fiber Optic Converter. Designed for rugged industrial environments, it is UL approved and certified for use in Class 1 Division 2 environments. In addition to direct point-to-point connectivity, it is capable of operating in a multi-drop mode. This allows one serial device to communicate with up to 31 other devices around a fiber ring. Since it supports mixed standards, you can replace other converters and isolators and add the EMI / RFI protection inherent to fiber optic communications.

PRODUCT FEATURES

- Data Rates up to 115.2 kbps
- 10 – 48 VDC Input Power Range
- Wide Operating Temperature
- 3-Way 2000V Optical Isolation
- MODBUS ASCII/RTU Compatible
- EMI / RFI Protection
- UL Class 1 DIV 2
- Built-in, Switchable Termination & Bias

PRODUCT OVERVIEW

In RS-232 mode, the converter supports transmit and receive data. Handshaking signals are not passed through. An Automatic Send Data Control circuit controls the RS-422/485 driver chip, eliminating the requirement for external software.

Easy to install and configure, it has a 12 position DIP Switch on the bottom to configure RS-422/485 parameters. The serial data and power cables connect to removable terminal blocks. ST connectors are used for the fiber.

Specifications

Serial Technology

RS-232	TD, RD, GND
RS-485 2-Wire	Data A(-), Data B(+), GND
RS-422/485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), GND
Serial Connector	5 Position, Removable Terminal Block
Data Rate	9.6 to 115.2 kbps
Isolation	2KV RMS, 1 minute
Surge Protection	600 W Peak Power Dissipation Clamping time < 1 pico-second
Industrial Bus	MODBUS ASCII/RTU
Bias	Built-in, Switchable, 1.2KΩ
Termination	Built-in, Switchable, 120Ω

Fiber Optic Technology

Type / Wavelength	Multimode / 820 nm
Output Power	-16dBm min, -12dBm typ. -9dBm max
Receive Sensitivity	-24dBm min, -25.4dBm max
Cable	62.5/125 micro-meter
Connector	ST
Data Rate	9.6 TO 115.2 kbps
Maximum Distance	2.5 miles (4 km)
Idle State	Transmitter Light ON

Power

Source	External
Power Connector	2 Position, Removable Terminal Block
Input Voltage	10 to 48 VDC (56 VDC max)
Power Consumption	0.5 W (Typical), 1.3W (w/ Termination)
Power Supply Part #	NTPS 24-1.3

Terminal Blocks

Wire Size Accepted	28 to 12 AWG
Pitch	5.08 mm
Insulation Resistance	≥ 500 MΩ @ 500 VDC
Maximum Torque	5 Kg / cm

Indicators

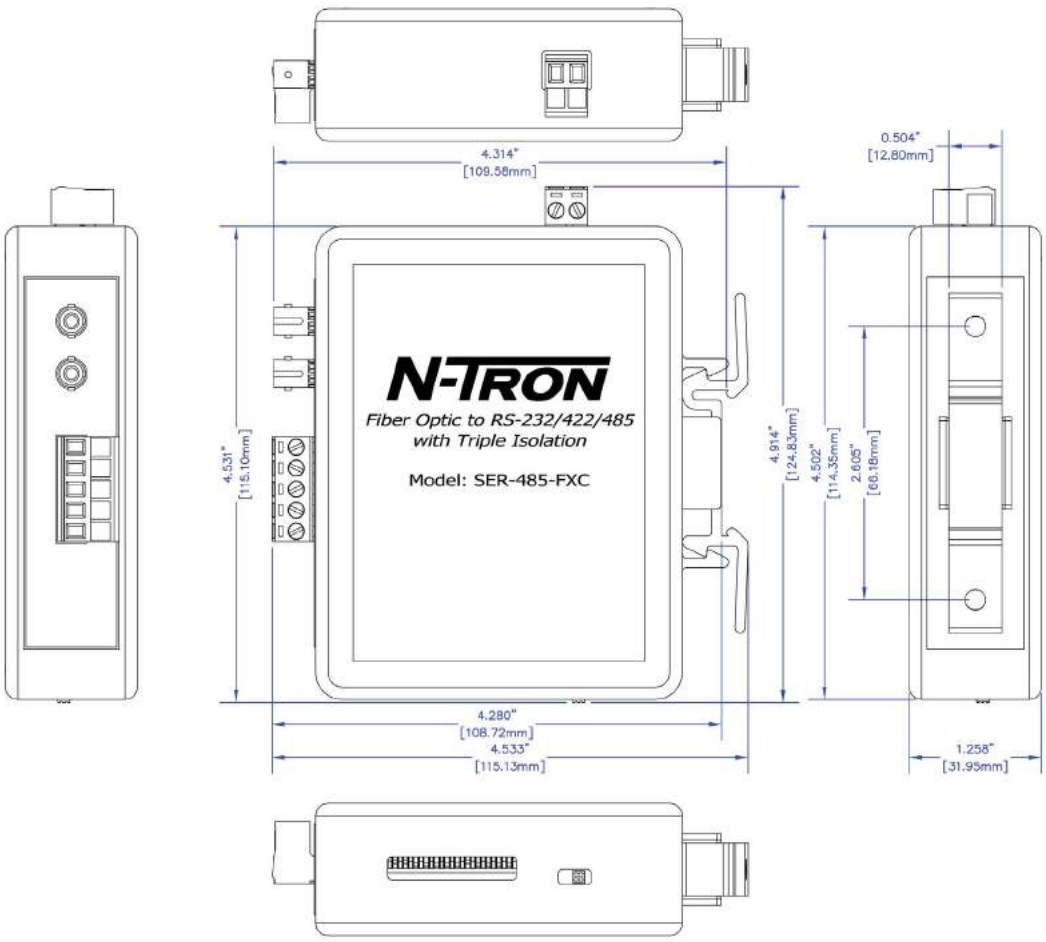
Power	Red LED
FO Receive	Red LED
FO Transmit	Red LED

Mechanical

Dimensions	4.9 x 4.5 x 1.3 in (12.3 x 11.3 x 3.2 cm)
Enclosure	IP 20 Plastic, 35 mm DIN Mount
Weight	0.44 lbs (199.6 g)
MTBF	138904 hours
MTBF Calc. Method	Parts Count Reliability Prediction

Environmental

Op Temperature	- 40 to 80°C (-40 to 176°F)
Storage Temp	- 40 to 85°C (-40 to 185°F)
Op Humidity	0 to 95% Non-condensing
RegulatoryApprovals	FCC, CE, UL Class 1 DIV 2 Groups A, B, C, D


4.314"
[109.58mm]
0.504"
[12.80mm]
N-TRON
Fiber Optic to RS-232/422/485
with Triple Isolation
Model: SER-485-FXC
4.531"
[115.10mm]
4.914"
[124.83mm]
4.502"
[114.35mm]
2.605"
[66.18mm]
4.280"
[108.72mm]
4.533"
[115.13mm]
1.258"
[31.95mm]

Sixnet
VersaTRAK® IPM™

PRODUCT HIGHLIGHTS

- Datalogging and timestamping
- Trending, alarm logging, & sequence of events
- Stand alone control of remote sites
- IEC 61131 PLCopen & high level C++ programming
- Limitless multi-user connectivity
- Telephone, internet, and wireless telemetry
- Advanced communication capabilities
- Report on exception, store & forward, peer to peer
- Ethernet TCP, modbus, LINUX, OPC & more
- Small to large applications
- Scalable from 1 to 1,000+ stations
- Unlimited I/O expansion
- Grow from a few points to more than 50,000
- Master terminal unit / concentrator
- Collect data from unlimited remote stations
- Embedded LINUX open source software
- Web servers, custom com drivers & much more

PERFORMANCE SPECIFICATIONS

- Industrial PowerPC (32 bit data bus)
- Operating system Embedded LINUX
- Dynamic memory (RAM) 16 Megabytes – 32bit, 0 wait states
- Program memory (Flash) 16 Megabytes
- Datalogging memory (RAM) 512K or 2 MB (battery-backed) Maximum local I/O 640
- Maximum distributed I/O 50,000+ (application dependent) Datalogging support – Sixnet Sixlog
- IEC 61131 programming Yes – Sixnet ISaGRAF
- High Level C programming – LINUX open software

SERIAL PORTS

- Up to 115,200 baud
- RS232 Port A RJ45 (TD, RD, CTS, RTS, CD, DTR, DSR, GND)
- RS232 Port B RJ45 (TD, RD, CTS, RTS, CD, DTR, DSR, GND)
- RS485 Port C Screws (485+, 485-, GND) (2-wire half-duplex)
- RS232 Port D Screws (TD, RD, CTS, RTS, GND)
- Protocols (master & slave) Sixnet & Modbus RTU/ASCII; many others available in LINUX
- Flow Control Hardware, software, RTS-party (for radios and RS485)

ETHERNET PORT

- 10/100BaseTx (auto-detecting)
- Connection RJ45 (auto-crossover) protocols TCP/IP, ARP, UDP, ICNP, DHCP, Modbus/TCP, Sixnet, and more

ENVIRONMENTAL

- DIN rail or flat panel mount
- Input power 10-30 VDC
- Input current 100 mA @ 24 VDC (typical)
- Temperature -40 to 70°C (-40 to 85°C storage)
- Humidity 5% to 95% RH (non-condensing)
- Flammability UL 94V-0 materials
- Vibration IEC68-2-6000
- Electrical Safety UL 508, CSA C22.2/14; EN61010-1 (IEC1010)
- EMI emissions FCC part 15, ICES-003, Class A; CE
- EN55022; EN61326-1; CE
- EMC immunity EN61326-1 (EN61000-4-2,3,4,6); CE
- Vibration IEC68-2-6000
- Hazardous locations UL 1604, CSA C22.2/213, (Class 1, Div 2, Category 3, Groups A,B,C,D) Cenelec EN50021 Zone 2

All specifications are subject to change. Consult factory for latest info.

ORDERING GUIDE

VT-IPM-1410	512K Static RAM; 16MB Dyn. RAM; 16MB Flash
VT-IPM-2410	2 MB Static RAM; 16MB Dyn. RAM; 16MB Flash

Watchdog Relay

Red Lion Automation Series

▶▶▶ Rugged Hardware-Based Solution for Fail-Safe Shutdown

Red Lion's Watchdog Relay is the industry's only rugged hardware-based solution that reliably monitors and provides fail-safe shutdown of processes controlled by RTUs, PLCs and other automation devices.

By monitoring the pulsing output heartbeat of a connected device, Watchdog Relay adds an extra level of safety that helps protect critical processes. If the heartbeat stops for reasons that may include power surges, extreme weather or device malfunctions, Watchdog's built-in form C relay will immediately energize and provide a signal that can be used to safely shut down the process. The signal sent upon loss of control helps to avoid costly damage to materials and equipment.

APPLICATIONS

> Oil & Gas
> Maritime
> Power & Energy

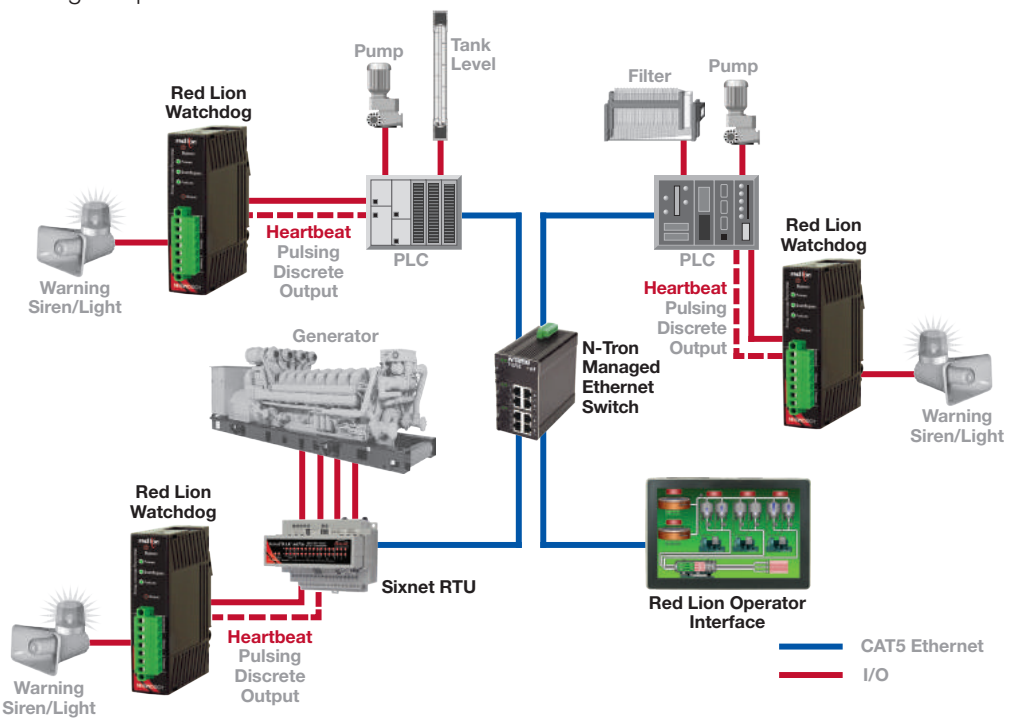
PRODUCT HIGHLIGHTS

> Rugged Hardware-Based Solution
> Fail-Safe Shutdown
> Heartbeat Monitoring
> Hazardous Location Certifications
> Extreme Operating Temperatures

FEATURES & BENEFITS

> Reliable, rugged design
- -40º C to 80º C operating temperature
- Class 1, Div II and ATEX hazardous location certifications
- Marine and offshore tested and/or verified to meet standards such as ABS, DNV No. 2.4 and Lloyds

> Fail-safe shutdown
- Monitors heartbeats from RTUs, PLCs and controllers
- Automatically powers down systems when malfunction occurs
- Adds a level of safety to the network



industrial automation

CE

▶▶▶ Watchdog Relay Specifications

ENVIRONMENTAL

Power supply voltage: 12 – 24 VDC
Operating temperature: -40˚ C to +80˚ C (-40˚ to +85˚ C Storage)
Humidity: 5 to 95% RH (non-condensing)

STANDARDS COMPLIANCE

Electrical Safety UL 508, CSA C22.2/142;
IEC61010-1; CE
EMI Emissions FCC part 15, ICES-003, Class A; EN55022 IEC 61000-6-4; CE
EMC Immunity IEC 61000-6-2 (EN61000-4-2,3,4,5,6,8); CE
Vibration: IEC 60068-2-6
Shock: IEC 60068-2-27
Hazardous locations (Class 1, Div II, Groups A, B, C, D) ISA 12.12.01, CSA C22.2/213, ATEX (Zone 2)
IEC 60079-0, -15 (pending)
Marine and offshore tested and/or verified to meet various marine and maritime standards such as ABS, DNV No. 2.4 and Lloyds
Packaging impact resistant Lexan® polycarbonate
Ingress protection: IP30
Dimensions: 1.00” (2.54 cm) width x 4.00” (10.16 cm) height x 3.72” (9.45 cm) length

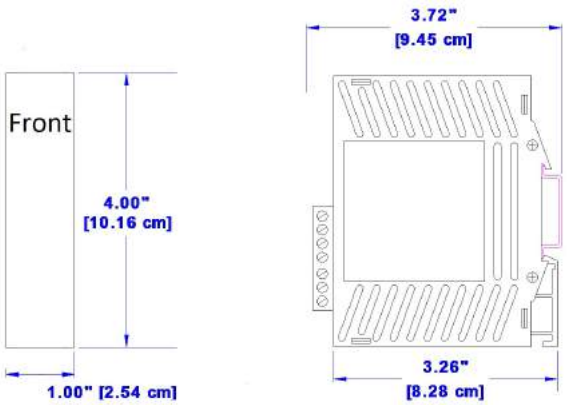
HEARTBEAT INPUT

Voltage range: 10 – 30 VDC
Input polarity: Sourcing
Input isolation: 150 Volts
Guaranteed ON voltage: 9 VDC
Guaranteed OFF voltage: 1.0 VDC
Guaranteed OFF current: 1.0 mA DC
Input resistance (@24VDC): 2.6Kohms
Input current (@ 24 VDC) 10 mA
Input protection: High Impedance with overvoltage protection
Heartbeat frequency: 1 – 50Hz*
Heartbeat timeout (configurable): 1s to 200s*
** 1Hz may not work at fastest heartbeat timeout time of 1 second*

OUTPUT CIRCUIT

Relay type: Form C
Maximum switching voltage: 30 VDC
Rated operational current: 2A@30 VDC

DIMENSIONS *In inches (cm)*



ORDERING INFORMATION

PART NUMBER	DESCRIPTION
6HBWDOG1	Heartbeat Watchdog Relay with form C relay
ST-PS-024-05	DIN rail mounted power supply; 115-220AC to 24VDC with 5 Amp capacity

PID контроллеры TSC/PSC RED LION. Техническое описание

Description:

Red Lion's TSC/PSC line of PID controllers are 1/8 DIN setpoint controllers suitable for time versus temperature/process control applications. The TSC/PSC PID controllers accept signals from a variety of temperature sensors (thermocouple and RTD sensors) and process signals, then precisely displays the temperature and process while providing an accurate output control signal (time proportional or linear) to maintain a process at the desired control point. The user input can be programmed to perform a variety of controller functions.

Display:

The display consists of dual 4-digit rows of text which allows for simultaneous viewing of the measured temperature and process value and setpoint or temperature/ process and profile status. Front panel indicators inform the operator of controller status and output states.

Output Modules:

Replaceable output modules (relay, logic/SSR drive or Triac) can be fitted to the main control output, alarm output(s) or timed event output(s), and cooling output.

Модульные контроллеры RED LION. Техническое описание

Overview:

Red Lion's CSMSTR Modular Controller allows for a custom controller to be configured for unique applications. The CSMSTR allows up to 16 slave modules to be connected and powered by a single master controller.

Performance:

The Modular Controller provides a platform that can be updated to operate in a wide variety of applications by simply plugging in I/O modules that meet the requirements of the application. Upon installation of modules, the CSMSTR automatically identifies and addresses connected slave modules simplifying deployments and reducing technical requirements. The CSMSTR automatically configures modules if they are replaced, by storing configuration files of each associated module.

Communication:

The CSMSTR Modular Controller provides two high-speed RS-232 serial ports, one RS-422/485 communication port and one 10/100Base-T(X) Ethernet port for connection to PCs, PLCs, and SCADA systems. An extensive list of master and slave protocol drivers are available to allow the CSMSTR to share and exchange variable data with external devices.

Options:

The CSMSTR offers a virtual HMI feature allowing for monitoring and control of an HMI from any networked PC. The virtual HMI is available in two different resolutions (320 x 240 or 640 x 480). For higher performance applications, an expansion slot with increased SDRAM is available.

PID контроллеры DLC RED LION. Техническое описание

Overview:

Red Lion's DLC line of PID controllers offer two independent input channels which can be configured to accept a wide range of thermocouple, RTD, 0-10 V, 0/4-20 mA, or resistive signals. Each channel can be independently configured to extract the square root of the input in both process voltage or process current modes for applications such as flow measurement using a differential flow sensor. Channel B can be assigned as a remote setpoint for channel A.

Alarms:

The dual time proportioning or DC analog outputs can be programmed to control two independent processes and feature up to two alarms per channel which can be configured for various alarm modes, or can provide a secondary control output for heat/cool applications. The control and alarm outputs are N channel open drain MOSFETs which are capable of switching up to 1 amp DC.

Operation:

The DLC controller operates in the PID control mode for both heating and cooling with on-demand auto-tune which establishes the tuning constants. The PID tuning constants may be fine-tuned through the serial interface. The controller employs a unique overshoot suppression feature, which allows the quickest response without excessive overshoot. It can also be transferred to operate in the manual mode, providing the operator with direct control of the output, or the on/ off control mode with adjustable hysteresis.

Панели оператора G3 HMIs RED LION. Техническое описание

The Red Lion G3 HMI operator panels are far more than ordinary HMIs, offering functionality above and beyond the industry standard. The G3s are field proven with a remarkable track record of durability in harsh environments.

Display:

Red Lion's G3 HMIs feature a keypad and/or resistive analog touchscreen and is available in display dimensions of 3.2 inch to 15 inch. Most models are available in color, while the smaller units are available in monochrome. The 3.2 inch, 5.7 inch and 10 inch models are available in outdoor versions which include a UV rated finish and sunlight visible displays. Keypads are standard on all models, and range from 8 to 32 buttons.

Connectivity:

The G3 comes standard with one 10/100Base-T(X) Ethernet, two RS-232 and one RS-422/485 serial ports and support serial to Ethernet conversion. Additional Ethernet, RS-422/485 and USB Host ports are also available on specific models. A maximum of up to five high-speed serial ports are available. CANopen, serial ports, DeviceNet, and Profibus communication cards can be installed after purchase to further expand the G3's connectivity.

Communication:

Communicating with over 300 different protocols, G3 HMIs are among the most powerful HMI communication platforms available today. They can manage vendor-specific applications and provide the ability to network-enable existing equipment. Select the PLCs, drives, motion controllers or PID controllers that work best with your application, and control them all from one Red Lion G3 HMI.

Collection:
With its built-in data logger, G3 HMIs offer a powerful means for recording continuous data as well as events and alarms. Data can be acquired from any or all connected devices and compiled into CSV-formatted files, where it can be stored, displayed, emailed or automatically synchronized with a server.

Remote Monitoring and Control:
The G3 HMI line excels at keeping personnel informed of machine and process performance. With its built-in web server, remote personnel can monitor as well as control equipment from virtually any networked device. G3 series HMIs can also alert personnel about existing or pending issues via email or SMS text messages to ensure problems are addressed quickly in order to minimize downtime.

Crimson Software:
Red Lion's powerful Crimson® 3.0 software is a remarkable programming platform that unlocks the unique power of the G3 with just simple drag-and-drop, point-and-click configuration. Unlike competitive HMIs that charge extra for cumbersome software, Red Lion's Crimson software is readily available for download.

Панели оператора G3 Kadet HMIs RED LION. Техническое описание

Red Lion's G3 Kadet HMI operator panels provide best-in-class communications capabilities with up to three serial ports and one Ethernet port capable of supporting four protocols simultaneously, G3 Kadet HMIs can seamlessly integrate with PLCs, drives, motion controllers and other automation devices.

Display:
The G3 Kadet HMIs feature widescreen displays with dimensions of 4.3 inches or 7 inches. Offering 32K colors from a TFT backlit LCD display, and three front panel LED indicators for easy visibility to HMI status, the G3 Kadet is easy view in all environments.

Connectivity:
Red Lion's G3 Kadet HMIs feature one 10/100Base-T(X) Ethernet port, one RS-232 and one RS-422/485 serial interfaces. The 7 inch model provides an additional RS-422/485 serial port. The Ethernet port supports up to four protocols simultaneously for easy communication to and from multiple vendor devices at once and also supports serial to Ethernet conversion.

Communication:
Communicating with over 300 different protocols, G3 Kadet HMIs are among the most powerful HMI communication platforms available today. They can manage multiple-vendor applications and provide the ability to network-enable existing equipment. Select the PLCs, drives, motion controllers or PID controllers that work best with your application, and control them all from one Red Lion G3 Kadet HMI operator panel.

Crimson Software:
Red Lion's powerful Crimson® 3.0 software is a remarkable programming platform that unlocks the unique power of the G3 Kadets with simple drag-and-drop, point-and-click configuration.

Unlike competitive HMIs that charge you extra for cumbersome software, Red Lion’s Crimson software is included.

Панельные измерители C48 RED LION. Техническое описание

Overview:

Red Lion's C48 counter/timer panel meters are available as a standard counter/timer or a batch counter/timer. The standard unit is available with single or dual presets while the batch model has a main process counter or timer with dual presets and a secondary counter with a single preset. The secondary counter can be selected to function as a batch or a total counter.

Display:

The C48 has a dual line display with six digit LCD display available in positive image reflective or negative image transmissive with red (top line) and green (bottom line) with backlighting.

Inputs:

The C48 offers a selectable input that accepts signals from a variety of different sensors. This line also features programmable user inputs and front panel function key. The user inputs can be configured as sinking (active low) or sourcing (active high) inputs via a single plug jumper. The user inputs and the front panel function key can be configured to provide a variety of functions.

Performance:

All C48 models offer solid-state outputs with NPN current sinking or PNP current sourcing (select models), open-collector transistor outputs. All relay output boards are field replaceable.

Панельные измерители CUB5 RED LION. Техническое описание

Overview:

Red Lion's CUB®5 is the ultimate in panel meter flexibility, from its complete user programming to the optional setpoint control and communication capability. The meter can also be programmed as a single or dual setpoint control. With its size and capabilities, the CUB5 is one of the most powerful meter on the market.

Display:

The CUB5 series features a five or eight digit reflective LCD display or a red/ green display with backlight. The intensity of the display can be adjusted from dark room applications to bright light applications. This easy to read display offers 12 mm character height, and offers NEMA 4X/IP65 protection.

Inputs:

The CUB5 provides a wide variety of inputs for industrial applications. CUB5 models cover both digital and analog signals including count, voltage, current, time, process, rate and temperature inputs.

Option Cards:

The capability of the CUB5 can be easily expanded with the addition of up to two option cards. Setpoint capability is field installable with the addition of the single setpoint relay output card or the dual setpoint solid state output card. Communication option cards include RS-232, RS-485, and USB.

Performance:
Power input is from a 9 to 28 VDC power source.

Панельные измерители CUB4 RED LION. Техническое описание

Overview:

Red Lion's CUB®4 offers a large display in a miniature package.
No programming is required for these units making them ideal for basic applications.

Display:
The CUB4 features 3 1/2 to eight digit reflective LCD displays with red or green backliting. This easy-to-read display offers 12 mm character height and is NEMA 4X/IP65 rated.

Inputs:
The CUB4 provides a wide variety of inputs for industrial applications. CUB4 models cover both digital and analog signals including count, voltage, current and process inputs.

Performance:
Power input is from a 9 to 28 VDC power source.

Панельные измерители CUB7 RED LION. Техническое описание

Overview:

Red Lion's CUB®7 is a dedicated function eight digit miniature panel meter. The CUB7 panel meter is battery powered, easy to use, and built with features not expected from a unit with such a small form factor.

Display:
The CUB7 has an LCD display available in positive image reflective, negative image transmissive with yellow/green or red backlighting. Backlit units require an external power source. This easy to read display offers nine mm character height, and offers NEMA 4X/IP65 protection. Models are available with one or two buttons on the face of the unit for programming or function execution.

Inputs:
The CUB7 provides contact, logic, open collector, or high voltage inputs. The counter model is available with a low speed contact or high speed input. The timer models feature nine programmable timer ranges.

Performance:
The CUB7 counter and timer models are available with low voltage input (28 VDC max) or an isolated high voltage input (50-250 VDC/VAC). The standard CUB7 unit uses 22 gauge wires for external connections, an optional plug-in terminal block is also available for more secure connections.

Специальные панельные измерители RED LION. Техническое описание

Overview:
Red Lion offers a full line of component displays, which enable custom meters to be built for specific applications. Various display sizes, colors, and mounting options are available to built the perfect meter. The component displays are a perfect solution for counting, timing and DC voltage measurement applications.

Counting:
Red Lion offers several models covering various counting applications. Our PC board mount units can be supplied with a PC board header or solderless elastomeric connections. The SUBCUB PC board mount counters are available in two sizes and provide a reflective LCD display. The MDMU features models with reflective, red or green backlight displays and supports both PC board mount and panel mount options.

Timing:
The MDMU offers nine timing modes ranging from the smallest .001 second up to the longest one hour and supports both PC board mount and panel mount applications.

Большие дисплеи LD2 RED LION. Техническое описание

Red Lion's LD2 2.25 inch (57 mm) high LED displays are easily read from a distance of up to 130 feet. Housed in an extremely rugged aluminum case the product meets NEMA 4X/IP65 specification making this display perfect for industrial applications. Various models for count/rate, time, voltage/current/process, strain gage and serial slave display are available. Some models provide dual setpoints for control and RS-232 or RS-485 communication ports to allow the displayed data to be networked.

Большие дисплеи LD4 RED LION. Техническое описание

Red Lion's LD4 4 inch (101 mm) high LED display is easily read from a distance of up to 180 feet. Housed in an extremely rugged aluminum case the product provides NEMA 4X/IP65 protection making this display perfect for industrial applications. Various models for count/rate, time, voltage/current/process, strain gage and serial slave display are available. Some models provide dual setpoints for control and RS-232 or RS-485 communication to allow the displayed data to be networked.

Большие дисплеи LPAX RED LION. Техническое описание

Red Lion's LPAX 1.5 inch (38 mm) high LED displays are easily read from a distance of up to 70 feet. The input to this display is selected from a variety of input modules that can be field installed. The input modules include count, rate, time, voltage, current, process, temperature, and strain gage modules. Each of the input modules have the capability of adding setpoint, retransmitted analog, and communication output cards providing the maximum in versatility. The front panel is NEMA 4X/IP65 protected and display can be installed into an enclosure for complete NEMA 4X/IP65 protection.

Большие дисплеи EPAX RED LION. Техническое описание

Red Lion's EPAX 4 inch (101 mm) high LED displays are easily read from a distance of up to 180 feet. The input to this display is selected from a variety of input modules that can be installed in the field. The input modules include count, rate, time, voltage,

current, process, temperature, and strain gage modules. Each of the input modules have the capability of adding setpoint, retransmitted analog, and communication output cards providing the maximum in flexibility. The front panel provides NEMA 4X/IP65 protection and can be installed into an enclosure for a complete NEMA 4X/IP65 protected solution.

Дисплеи RED LION. Техническое описание

Overview:

Red Lion's ProducTVity Station is a ready-to-deploy plant floor visual management system that displays real-time Key Performance Indicator (KPI) data and Andon messages on large televisions to drive efficiency. Ideal for factory floors, processing plants or any place where performance needs to be tracked and monitored, this visual management system lets you create sophisticated production scoreboards using standard, consumer-grade LCD, LED or plasma TVs.

Data Management:

The ProducTVity Station's built-in data logger with timestamping can record key performance indicators, as well as Andon events for later review or analysis. The ProducTVity Station includes a 2GB CompactFlash card for recording data and events.

Connectvity:

Red Lion's ProducTVity Station comes standard with one 10/100Base-T(X) Ethernet port, two RS-232 and one RS-422/485 serial ports, and one USB Host port. Additionally one DVI video output port can output 720p resolution to any large television. The included expansion slot allows for modular communication options cards including CANopen, DeviceNet, Profibus, or additional serial and Ethernet ports.

Communication:

Communicating with over 300 different protocols, the ProducTVity Station can connect to automation equipment including PLCs, drives, motion controllers and/or PID controllers making integration into new or existing applications easy.

Collection:

With its built-in data logger, Red Lion's ProducTVity Station offers a powerful means for recording continuous data as well as KPI events and Andon messages. Data can be acquired from any connected devices and compiled into CSV-formatted files, where it can be stored, displayed, emailed or automatically synchronized with an FTP or Microsoft SQL server.

Crimson Software:

Red Lion’s powerful Crimson® 3.0 software is a remarkable programming platform that unlocks the power of the ProducTVity Station with simple drag-and-drop, point-and-click configuration. And unlike competitive solutions that charge you extra for cumbersome software, Red Lion’s Crimson software is included with each ProducTVity Station.

Аналоговые датчики тока RED LION. Техническое описание

Whether you are measuring heater current or simply the current in a line, we have the right solution. Our sensors include current transducers, current

transformers and current shunts in various inputs. Our product offering includes fixed or split-core models for easy installation.

Датчики температуры RED LION. Техническое описание

Red Lion® offers a wide variety of temperature sensors. Both RTD and thermocouples sensors are available in various mounting configurations to satisfy your application requirements. They are available with quick disconnect ends and field-cuttable cables, with optional amplifiers.

Датчики давления RED LION. Техническое описание

Pressure transducers are designed to provide accurate and dependable pressure measurement, even in the most demanding applications. A few of the basic sensors we offer can cover a large majority of the applications, all coming in stainless steel with IP67 protection.

Кодеры RED LION. Техническое описание

Red Lion® offers shaft encoders in both flange mount and servo mount styles and light to heavy duty models with single or bi-directional output capability.

Our thru-bore encoder offering includes various mounting options and shaft hole diameters to fit your application. The range also includes models with single or bi-directional output capability.

Датчики длины RED LION. Техническое описание

Red Lion's wheeled sensors are perfect for full contact measuring, whether used for counting or speed indication. Select from our miniature, general or heavy duty models, all of which are available with various wheels and mounting brackets.

Фотоэлектрические датчики RED LION. Техническое описание

Parts, people, or product counting can be made easy with our line of photo electric sensors. Retroreflective, proximity, and opposed beam models along with all the accessories.

Бесконтактные датчики RED LION. Техническое описание

Proximity sensors detect the presence of metal objects which come within range of their oscillating field and provide target detection to *“zero speed”*. We offer various sizes and diameters to meet many applications.

Магнитные датчики RED LION. Техническое описание

These low cost sensors are ideal for speed sensing applications. Used commonly with sensing gears, we offer various sizes for your application whether you need a threaded or non-threaded model.

Кронштейны RED LION. Техническое описание

Our complete line of sensing gears and motor mounts include ARC rings with magnetic sensors or encoders depending on your application requirements.

Блоки преобразования сигналов IFMA RED LION. Техническое описание

Description:

The IFMA signal conditioners accept frequency inputs, and output analog voltage or current in proportion to the input frequency with 0.1% accuracy. The IFMA can accept any frequency source input from 1 Hz to 25 KHz. Signal conditioning with our IFMA products can be easily configured using a seven position DIP switch, rotary switch and/or push-button. The input circuitry is also DIP switch selectable for a variety of sources.

LED lights on the face of the unit illuminate under normal operation to display the input and output status of the IFMA. These LEDs are also used to provide visual feedback for device configuration. The unit is equipped with a universal mounting foot and can be mounted to either a top hat (EN 50 022) or a G profile (EN 50 035 – G32) DIN rail.

Блоки преобразования сигналов IFMR RED LION. Техническое описание

Description:

The IFMR signal conditioner accepts frequency inputs, and controls a single relay (SPDT) based on the value of the input frequency. The relay can be set to trip based on any input value from 0.1 Hz to 25 KHz. The IFMR can be set to trip on overspeed or underspeed (including zero speed). Offset and hysteresis values can be incorporated into the trip setting to eliminate false outputs. Two separate input connections are available for external push-buttons are provided and override to the relay trip detection. This override holds the relay in the release state as long as the input is connected. The other external input clears a latched trip condition when pulled.

The IFMR signal conditioners can be easily configured using a seven position DIP switch, rotary switch and/or push-button. The input circuitry is also DIP switch selectable for a variety of sources.

The IFMR operates in one of six user selectable output modes. The programmable minimum response time provides optimum response versus input filtering for any input frequency. The offset and hysteresis settings provide flexible adjustment of the relay trip and release points.

LED lights on the face of the unit are illuminated during normal operation to display the input and output status of the IFMA. These LEDs are also used to provide visual feedback during device configuration. The unit is equipped with a universal mounting foot and can be mounted to either a top hat (EN 50 022) or a G profile (EN 50 035 – G32) DIN rail.

Блоки преобразования сигналов IAMS RED LION. Техническое описание

Description:
The IAMS are universal signal conditioners with unmatched capability and provide more than 100 combinations of I/O combination configurations. The IAMS provides complete isolation and conversion capabilities to satisfy any application. The universal input accepts process, DC current, DC voltage, thermocouples, RTDs, potentiometers and linear resistance signals allowing the module to be connected to most sensors.

Setpoint models allow for dual setpoint control capability through dual form A relays. The analog model provides a retransmitted analog signal. A third model provides both analog and dual setpoint control capabilities.

The IAMS can be configured using the PGMMOD programming module. The module is required to program the IAMS, but only one programming module is required regardless of the quantity of IAMS signal conditioners. The module can store programming from one unit and mirror it to a second unit reducing set-up time for multiple installations.

The unit's accuracy typically exceeds 0.1 % depending on the range selection and scaling. The microprocessor based design provides ease of field scaling and the onboard E2PROM stores scaling values for future recall. All units are factory calibrated for all I/O ranges. Factory or custom field scaling can be selected in the advanced programming loop. The IAMS is flexible enough; it can even be recalibrated in the field.

The unit is equipped with a universal mounting foot and can be mounted to a top hat (EN 50 022) DIN rail.

Блоки преобразования сигналов IRMA RED LION. Техническое описание

Description:
The IRMA signal conditioner accepts RTD or resistance inputs and converts them into a voltage or current output. The output is linearly proportional to the temperature or resistance input. This output is ideal for interfacing to indicators, chart recorders, controllers, or other instrumentation equipment.

The IRMA is DC powered and provides full isolation from the signal input and analog output. The analog output may be configured for one of the following: 0 to 20 mA, 4 to 20 mA, or 0 to 10 VDC.

They can easily be configured using an eight position DIP switch. A simple range setting technique (field calibration) is used so the actual input signal adjusts the output for scaling. This technique eliminates the need for potentiometers which are vulnerable to changes due to vibration.

The unit is equipped with a universal mounting foot and can be mounted to either a top hat (EN 50 022) or a G profile (EN 50 035 – G32) DIN rail.

Блоки преобразования сигналов ITMA RED LION. Техническое описание

Description:
The ITMA accepts thermocouple or millivolt inputs and converts them into a voltage or current output. The voltage or current output is linearly proportional to the temperature or millivolt input. This output is ideal for interfacing to indicators, chart recorders, controllers or other instrumentation equipment.

The ITMA is available in two versions, loop-powered or DC powered. The loop-powered unit means that the same two wires are carrying both the power and the output signal. The unit controls the output current draw from 4 to 20 mA in direct proportion to the input change while consuming less than 4 mA for power. The DC powered unit has the DC power input isolated from the signal input and the analog output. The DC unit scales the analog output proportionally to the thermocouple or millivolt input signal. The analog output may be configured for one of the following: 0 to 20 mA, 4 to 20 mA, or 0 to 10 VDC.

The ITMA signal conditioners can be easily configured using a ten position DIP switch. A simple range setting technique (field calibration) is used so the actual input signal adjusts the output for scaling. This technique eliminates the need for potentiometers which are vulnerable to changes due to vibration.

The unit is equipped with a universal mounting foot and can be mounted to either a top hat (EN 50 022) or a G profile (EN 50 035 – G32) DIN rail.

Блоки преобразования сигналов IAMA RED LION. Техническое описание

Description:
IAMA universal signal conditioning modules isolate and convert over 100 combinations of analog signal ranges. The IAMA3535 signal conditioning product converts and transmits signals linearly proportional to the input, while the IAMA6262 transmits the scaled square root of the input signal. This allows the IAMA6262 to provide a signal that is linear to flow rate in applications utilizing a differential pressure transducer.

The IAMA features a DIP switch for range selection which eliminates the need to order and stock different modules for each input and output signal range. The DIP switch also allows for quick and convenient setup for over 100 standard signal conditioning combinations. By utilizing the field mode of calibration, the user can customize the input and output scaling for non-standard applications, including reversal of the output relative to the input.

In addition to the signal conditioning capabilities, the IAMA modules feature optically isolated input/output signal circuits and transformer isolated power to input, power to output circuits.

The unit’s accuracy typically exceeds 0.05% depending on the range selection and scaling. The microprocessor based design provides ease of field scaling and the onboard E2PROM stores scaling values for future recall. All units are factory calibrated for all input and output ranges. Factory or custom field scaling can be selected in the advanced programming loop. The IAMS is flexible enough; it can even be recalibrated in the field.

The unit is equipped with a universal mounting foot and can be mounted to top hat (EN 50 022) and G profile (EN 50 035 – G32) DIN rail.

Коммутаторы N-Tron 100 RED LION. Техническое описание

Red Lion’s N-Tron® series 100 unmanaged Ethernet switches offer an array of port configurations and feature a wide operating temperature range. The budget-saving 100 line provides excellent EMI protection and offer hardened metal DIN-rail mountable enclosures to expand your industrial Ethernet network.

Коммутаторы N-Tron 300 RED LION. Техническое описание

Red Lion's N-Tron® series 300 unmanaged Ethernet switches offer high reliability and up to 17 ports of connectivity. The 300 line offers excellent EMI protection and hardened metal DIN-rail mountable enclosures to expand your industrial Ethernet network. These switches are also optionally available with N-View™ monitoring technology, which can be found in our Monitored family of products.

Connectivity:
The 300 provides Fast Ethernet connectivity from 4 to 17 ports. These unmanaged switches are available in copper and fiber port combinations for maximum deployment flexibility.

Performance:
The 300 provides uncompromising performance in harsh environments including features like redundant power inputs and plug-and-play operation. These networking features provide best-in-class uptime performance.

Environmental:
The 300 switches are housed in DIN-rail mountable enclosures, and offer a wide operating temperature range of up to -40° to 85°C. With UL/cUL Class 1, Div. 2 hazardous locations, CE conformity, and NEMA TS1/TS2 and IEC 1613 compliance, these switches are built to last in the most demanding environments.

Коммутаторы N-Tron 500 RED LION. Техническое описание

Red Lion's N-Tron® series 500 unmanaged Ethernet switches offer high reliability, up to 26 ports of connectivity, and options for DIN-rail mountable or rack mounting. The 500 series offers excellent EMI protection and are housed in metal enclosures. These switches are also available with N-View™ monitoring technology, which can be found in our Monitored family of products, or with advanced Ethernet management features including VLAN, IGMP Snooping, QoS, trunking and port mirroring, which can be found in our Managed family of products.

Connectivity:
The 500 unmanaged switches feature between 8 and 26 ports, offering 10/100BaseT(X) port speeds. These unmanaged switches provide copper and fiber port combinations for maximum deployment flexibility.

Performance:
The 500 line of unmanaged switches include redundant power inputs, plug-and-play operation and provide best-in-class performance in harsh environments.

Environmental:
The 500 line of unmanaged switches are housed in a DIN-rail mountable enclosure, and offer a wide operating temperature range of -40° to 85°C. With UL Class I, Div. 2 listing, CE and IEC 1613 certifications, these switches are built to last in the most demanding applications.

Коммутаторы N-Tron 1000 RED LION. Техническое описание

Red Lion's N-Tron® series 1000 unmanaged Gigabit Ethernet switches offer fiber and copper port configurations, wide operating temperature range support and excellent EMI protection. Housed in a hardened metal DIN-rail mountable enclosure, these industrial switches are ideal for mission-critical data acquisition, security surveillance, control and Ethernet I/O applications.

Connectivity:
The 1000 unmanaged switches feature up to eight auto-sensing Gigabit ports for reliable connectivity. Copper and fiber port combinations are available for maximum deployment flexibility. Jumbo frame support can be found on the 1005TX and 1008TX models.

Performance:
Featuring redundant power inputs, all 1000 unmanaged switches provide uncompromising performance and uptime in harsh environments. Plug-and-play operation and a space-saving compact footprint also make deployment easy.

Environmental:
The 1000 switches are housed in rugged DIN-rail mountable metal enclosures that support a wide operating temperature range of -40° to 85°C. With UL Class I, Div. 2 listing, CE approval and designed to comply with IEC 1613 certifications, these switches are built to last in the most demanding environments.

Коммутаторы SL RED LION. Техническое описание

Red Lion's Sixnet® series SL unmanaged industrial Ethernet switches are ideal for light to moderate industrial applications. Available with Ethernet and fiber options, unmanaged SL Ethernet switches offer protected circuitry and Lexan DIN-rail mountable enclsoures.

Connectivity:
SL unmanaged Ethernet switches offer up to nine 10/100Base-T(X) Ethernet ports with copper and fiber port combinations.

Performance:
Unmanaged SL Ethernet switches provide uncompromising performance in industiral environments. Best-in-class features include redundant power input, plug-and-play operation and 1,000,000 MTBF.

Environmental:
Housed in DIN-rail mountable Lexan IP30 protected enclosures, SL unmanaged Ethernet switches feature up to a -40° to 60°C operating temperature range. With UL Class I, Div. 2 listing, CSA, ABS and CE certifications, these switches are built to last in demanding environments.

Коммутаторы SLX RED LION. Техническое описание

Red Lion's Sixnet® series SLX unmanaged industrial Ethernet switches are designed to meet the highest demands of extreme applications. Available with Ethernet and fiber options, the unmanaged SLX switches offer protected circuitry and tough metal DIN-rail mountable enclosures to ensure rugged reliability.

Connectivity:
The SLX unmanaged ethernet switches offer up to nine Ethernet ports with a combination of 10/100Base-T(X) and 10/100/1000Base-T(X) port speeds and are available with copper, fiber and SFP port combinations. Power over Ethernet (PoE) capable models are also available.

Performance:
SLX ethernet switches provide uncompromising performance in harsh environments. Featuring redundant power input terminals, plug-and-play operation and 1,000,000 hour MTBF, the SLX series provides best-in-class uptime performance.

Environmental:
Housed in metal IP40 protected enclosures, Sixnet series SLX unmanaged Ethernet switches have a -40° to 85°C operating temperature range. With UL Class I, Div. 2 listing, CSA and CE certifications, these Ethernet switches are built to last in the most demanding environments.

Коммутаторы с мониторингом N-Tron 500-A RED LION. Техническое описание

Red Lion's N-Tron® series 500-A industrial Ethernet switches offer up to 26 ports of Fast Ethernet connectivity and are specifically designed to meet the requirements of mission critical PLC and process control applications. Designed for plug-and-play performance with EtherNet/IP, Modbus TCP and PROFINET applications, the 500-A series monitored switches provide best-in-class reliable connectivity. The 500-A series offers N-View™

monitoring technology, IGMP snooping, VLAN, QoS, port control, trunking and port mirroring required by many advanced I/O control applications.

Connectivity:
The 500-A monitored switches feature between 8 and 26 ports, offering 10/100Base-T(X) port speeds. These monitored switches provide copper and fiber port combinations for maximum deployment flexibility.

Performance:
The 500-A line of monitored switches provide uncompromising performance in harsh environments including features like redundant power inputs, plug-and-play operation and N-View monitoring technology. These networking features provide best-in-class uptime performance.

Monitoring:
The 500-A provides N-View advanced network performance monitoring technology. N-View provides 47 different status points on switch and port conditions and displays that information on a networked computer using the N-View Windows application. The N-View OPC server application also allows integration with third-party OPC Client applications.

Environmental:
The 500-A line of monitored switches are housed in DIN-rail mountable metal enclosures and offer a wide operating temperature range of -40° to +85°C. With UL Class I, Div. 2 listing, CE certifications and TS1/TS2, IEC 61850-3 and IEC 1613 compliance, these switches are built to last in the most demanding environments.

Коммутаторы с мониторингом N-Tron 500-N RED LION. Техническое описание

The N-Tron® series 500-N monitored industrial Ethernet switches offer high reliability, up to 26 ports of Fast Ethernet connectivity and options for DIN-rail or rack mounting. Our switches offer excellent EMI protection and are housed in a metal enclosure, while offering network performance monitoring using free N-View™ OPC monitoring technology.

Connectivity:
The 500-N monitored switches feature between 8 and 26 ports, offering 100Base port speeds. These monitored switches provide copper and fiber port combinations for maximum deployment flexibility.

Performance:
The 500-N line of monitored switches provide uncompromising performance in harsh environments including features like redundant power inputs, plug-and-play operation and N-View monitoring technology. These networking features provide best-in-class uptime performance.

Monitoring:
The -N provides network performance monitoring using N-View OPC monitoring technology, which provides 47 different status points on switch and port conditions and displays that information on a networked computer.

Environmental:
The 500-N line of monitored switches are housed in a DIN-rail mountable metal enclosure and

offers a wide operating temperature range of -40 to +85°C. With UL Class I, Div. 2 listing, CE certifications and TS1/TS2, IEC 1613 compliance, these switches are built to last in the most demanding environments.

Коммутаторы с мониторингом N-Tron 300-N RED LION. Техническое описание

The N-Tron® series 300-N monitored industrial Ethernet switches provide excellent EMI protection and DIN-rail metal housing to expand your industrial Ethernet network. These switches offer high reliability and up to 17 ports of Fast Ethernet connectivity. The -N provides network performance monitoring using N-View™ monitoring software.

Connectivity:
These 300-N monitored switches feature between 4 and 17 ports, offering 100Base port speeds. These monitored switches provide copper and fiber port combinations for maximum deployment flexibility.

Performance:
The 300-N monitored switches provide uncompromising performance in harsh environments including features like redundant power inputs, plug-and-play operation and N-View OPC monitoring. These networking features provide best-in-class uptime performance.

Monitoring:
The -N provides network performance monitoring using N-View monitoring technology, which provides 47 different status points on switch and port conditions and displays that information on a networked computer.

Environmental:
The 300-N line of monitored switches are housed in a DIN-rail mountable metal enclosure and offers a wide operating temperature range of up to -40 to +85°C. With UL Class I, Div. 2 listing, CE and TS1/TS2 certifications, IEC 61850-3 and IEC 1613 compliance, these switches are built to last in the most demanding environments.

Коммутаторы N-Tron NT24k RED LION. Техническое описание

Red Lion's N-Tron® series NT24k® Gigabit managed industrial Ethernet switches are available in rackmount or DIN-rail mountable configurations. The NT24k platform offers a wide array of port configurations, media types and Power over Ethernet Plus (PoE+) models including 10/100/1000 copper, and Fast Ethernet and Gigabit fiber options. All NT24k switches are plug-and-play installable with IGMP auto-configuration, media/port auto-detection and simple ring configuration, making the NT24k platform one of the easiest to deploy managed switches in the industry. Housed in rugged hardened enclosures, the NT24k switches feature extended shock and vibration specifications, wide operating temperature ratings and best-in-class ring technology.

Connectivity:
Modular NT24k industrial Ethernet switches feature hot-swappable port modules available in Fast or Gigabit speeds and are optionally available with copper, fiber and/or SFP ports. The modular

NT24k platform accepts up to three port modules for a maximum of 24 mix and match network ports. For maximum flexibility, IEEE 802.3af/at PoE models are also available.

Performance:
NT24k industrial Ethernet switches provide uncompromising performance in harsh environments, including network features like N-Ring™, VLAN, Quality of Service (QoS), port mirroring, IGMP, SNTP and SNMP. Additionally the NT24k offers IEEE 802.1x with RADIUS remote server authentication to ensure port security. These network management features provide best-in-class visibility, security and uptime performance.

Environmental:
The ultra-reliable NT24k industrial Ethernet switches are available in rack or DIN-rail mountable configurations with operating temperatures up to -40° to 85°C. With UL Class I, Division 2 listing and CE certifications, these industrial switches are built to last in the most demanding and hazardous environments.

Monitoring:
NT24k industrial Ethernet switches come with N-View™ monitoring technology which provides 47 different status points on switch and port conditions and displays that information on any networked computer.

Security:
Red Lion's NT24k line provides a high level of security that utilizes IEEE 802.1x with RADIUS remote server authentication and SNMPv3 communication protocol.

Коммутаторы N-Tron 700 RED LION. Техническое описание

For applications in extreme environments, check out Red Lion's N-Tron® series 700 managed industrial Ethernet switches. Our 700 managed industrial Ethernet switches support SNMP, web management, Fast Ethernet and N-View™ monitoring technology. Housed in rugged enclosures, the 700 managed Ethernet switches feature extended shock and vibration specifications, wide operating temperature ratings and best-in-class ring technology, providing 30 ms healing times.

Connectivity:
The 700 managed industrial Ethernet switches feature between eight and 16 ports, offering 100Base port speeds. These managed switches provide a combination of copper and fiber ports for maximum flexibility. Available in waterproof IP67 protected enclosures with M12 style connectors, the 700 series switches provide extreme reliability in high moisture/vibration environments.

Performance:
The N-Tron 700 line of managed industrial Ethernet switches provide uncompromising performance in harsh environments including features like N-Ring™, VLAN, Quality of Service (QoS), port mirroring, IGMP and SNMP. These network management features provide best-in-class visibility and uptime performance.

Environmental:
700 managed industrial Ethernet switches are housed in metal enclosures, and feature a -40° to

+85°C operating temperature. With UL Class I, Div. 2 listing, CE, EN50155 and ABS certifications, these switches are built to last in the most demanding environments.

Monitoring:
The -N models provide network performance monitoring using N-View monitoring technology, which provides 47 different status points on switch and port conditions and displays that information on a networked computer.

Security:
The 700 managed industrial Ethernet switches provide a high level of security utilizing port-based MAC address filtering and SNMPv3 communication protocol to ensure the safest connections.

Коммутаторы N-Tron 7000 RED LION. Техническое описание

Red Lion's N-Tron® series 7000 managed industrial Ethernet switches provide Gigabit connectivity ideally suited for connecting Ethernet enabled industrial and security equipment. The 7000 Gigabit Ethernet switches are well suited for use as a fiber optic ring manager or an aggregation switch. With SNMP, web management and N-View™ support, remote diagnostics and monitoring are easy.

Connectivity:
The 7000 managed industrial Ethernet switches feature between six and 26 ports, offering 10/1000/1000Base-T(X) port speeds. These managed switches provide a combination of copper, fiber and SFP ports for maximum flexibility.

Performance:
N-Tron's 7000 managed industrial Ethernet switches provide uncompromising performance in harsh environments including features like N-Ring™, VLAN, Quality of Service (QoS), port mirroring, IGMP and SNMP. These network management features provide best-in-class visibility and uptime performance.

Environmental:
The 7000 managed industrial Ethernet switches are housed in metal enclosures and feature -40° to 85°C operating temperatures. With UL Class I, Div. 2 listing, CE, EN50155 and ABS certifications, these switches are built to last in the most demanding environments.

Monitoring:
N-View provides network performance monitoring using N-View technology. N-View software provides 47 different status points on switch and port conditions and displays that information on a networked computer.

Security:
The 7000 managed industrial Ethernet switches provide a high level of security utilizing port-based MAC address filtering and SNMPv3 communication protocol to ensure the safest connections.

Коммутаторы EL RED LION. Техническое описание

Red Lion's Sixnet® series EL326 industrial Ethernet switches provide Layer 3 network management with enterprise-class features in rugged packaging. Featuring powerful

security, built-in redundancy, data control and prioritization functionality, EL326 advanced managed switches deliver superior performance and industry-leading hardware-based routing for advanced support of multiservice networks.

Connectivity:
EL326 advanced managed switches feature 24 Gigabit copper ports, 4 combo SFP ports and optional 10 Gigabit Ethernet uplinks. Dedicated stacking ports allow stacking of up to eight switches for added capacity and redundancy.

Performance:
EL326 switches deliver uncompromising performance in harsh environments. Advanced security, Real-Time Ring, priority queuing, IGMP, RMON and SNMP functionality provides best-in-class performance and network uptime.

Environmental:
Housed in metal IP50 protected enclosures, the rugged EL326 industrial switches support -40° to 85°C operating temperatures. With CE, CSA and UL Class I, Div 2 ratings, these switches are built to last in the most demanding environments.

Security:
EL326 advanced industrial managed switches provide a high level of security utilizing RADIUS authentication, TLS/SSL encryption and port-based MAC address filtering. These switches also offer HTTPS, SSH, SSL and SNMPv3 communication protocols to ensure the safest connections.

Коммутаторы EK RED LION. Техническое описание

The Sixnet® series EK managed industrial Ethernet switches are designed for extreme applications requiring high port counts. Our EK rackmount managed switches are available with copper and fiber connectivity options, and feature Gigabit port speeds. EK switches offer rugged metal packaging to ensure reliability in even the most extreme environments.

Connectivity:
These EK switches feature between 26 and 32 ports, offering a combination of Fast and Gigabit port speeds. These managed switches provide copper, fiber and/or SFP port combinations for maximum flexibility.

Performance:
The EK line of managed switches provides uncompromising performance in harsh environments including features like Real-Time Ring, Priority Queuing, IGMP, RMON and SNMP. These network management features provide best-in-class visibility and uptime performance.

Environmental:
The EK line of managed switches are housed in a metal IP40 rated enclosure, and have a -40˚ to +85°C operating temperature. With CSA, CE, and maritime ratings, these switches are built to last in the most demanding environments.

Security:
The EK provides a high level of security utilizing TLS/ SSL encryption and port-based MAC address filtering. These switches also offer HTTPS, SSH, SSL and SNMPv3 communication protocols to ensure the safest connections.

Industrial Switch Options

Part Number

EK26 = 26 port rack switch including eight Gigabit ports

EK32 = 32 port rack switch including eight Gigabit ports

Style

F = Front style with Ethernet ports in front; console ports and power connections in back

R = Reverse style with LEDs and console ports in front; Ethernet and power in back (special order - contact sales for availability)

Case

S = Sealed IP50 protection (conduction cooled – no fans) for -40˚ to 85°C operation (see derating in specifications)

T = High temperature (fan cooled) for -40˚ to 85°C operation (no derating) (fans on right side)

Power

D6N = Dual 24/48/60 VDC inputs (18-75 VDC)

A0N = Single VAC/VDC input (90-264 VAC or 130-370 VDC)

AAN = Dual VAC/VDC inputs with dual internal power supplies

Other Options

-1 = All copper model

IP67 коммутаторы MIL 300 RED LION. Техническое описание

Red Lion's Sixnet® series MIL 300 Ethernet switches feature Layer 3 management in an ultra-rugged housing providing mission critical communication in extreme environments. With up to 16 Gigabit ports, and up to two 10G uplink ports, the MIL 300 switches feature MIL-DTL-38999 series III connectors providing an ideal Commercial Off-The-Shelf (COTS) military-grade solution for harsh environments which include battlefield communications, combat vehicles and shipboard avionics.

Connectivity: Sixnet's MIL 300 switches offer up to 16 10/100/1000Base water-tight MIL-DTL-38999 Ethernet ports with MIL-STD-1275/MIL-STD-704 power protection. Select

models offer up to two 10G fiber connectors to meet demanding deployment requirements.

Performance: The Layer 3 MIL 300 Ethernet switches provide uncompromising performance in rugged environments. Featuring MIL-STD power protection, water-tight IP67 Ethernet ports, advanced security and Layer 3 network management, the MIL 300 offers the best-in-class performance.

Environmental: Sixnet's MIL 300 switches are housed in aluminum IP67 protected enclosures, feature water-tight connectors, and offer up to -40° to 75°C operating temperature ranges. These switches have been tested to meet MIL-STD-461F, MIL-STD-810F, MIL-STD-1275 and MIL-STD-704. These products also feature altitude ratings 50,000ft and 200G shock.

IP67 коммутаторы ET RED LION. Техническое описание

The Red Lion Sixnet® series ET industrial Ethernet switches are available with either Layer 2 managed or unmanaged network functionality in an ultra-rugged housing. Available with five or eight 10/100Base RJ-45 Ethernet connectors and include optional Gigabit and MIL-DTL-38999 series III connectors, the ET switches offer IP67/NEMA 6 protection.

IP67 коммутаторы 100M12 RED LION. Техническое описание

Red Lion's N-Tron® series 100M12 unmanaged industrial Ethernet switches offer an array of port configurations, plug-and-play installation and features wide operating temperature ranges. The 100M12 unmanaged Ethernet switches feature M12 cable connectors extended shock and vibration specifications making extending your network to any harsh environment easy.

IP67 коммутаторы 700M12 RED LION. Техническое описание

Red Lion's N-Tron® series 700M12 managed industrial Ethernet switches are designed for applications in extreme environments. Our 700 series support SNMP, web management, Fast Ethernet, and N-View™ which facilitate remote configuration and diagnostics. Housed in rugged waterproof IP67 enclosures, the 700 managed Ethernet switches feature extended shock and vibration specifications, wide operating temperature ratings and best-in-class ring technology, providing 30ms healing times.

IP67 коммутаторы ET OEM RED LION. Техническое описание

Red Lion Sixnet® series ET OEM board-level switches are available in five or eight port configurations with layer 2 managed functionality. Models include 10/100 or 10/100/1000 port speeds. This powerful board-level solution enables organizations to save time and money by utilizing a pre-engineered proven platform reducing engineering time and product risk.

Промышленные маршрутизаторы RED LION. Техническое описание

Overview:

Red Lion’s Sixnet® series RAM® 6021 industrial wired routers offer secure and reliable communication to remotely deployed assets. The rugged RAM 6021 routers are ideal for connecting to Modbus or DNP3 devices such as SCADA servers, PLCs and other automation equipment located in harsh environments.

Connectivity:

RAM 6021 wired routers natively support Modbus and DNP3 protocols, and also include an I/O concentrator for local collection of sensor data. Available with five 10/100Base-T(X) Ethernet ports and one RS-232 port, these industrial routers support AT commands and Serial-to-IP communications.

Security:

Designed to deliver secure communications to remote locations, our RAM 6021 routers support robust security features such as VPN (client or server), Port Forwarding, Stateful Firewall, Packet Filtering, Data Encryption and an Access Control List (ACL).

Management:

Each RAM 6021 router can be managed locally or remotely utilizing a web interface or command line interface (CLI). Local management is easily established using Ethernet, serial or USB. Remote management can be accessed via SNMP, HTTPS and SSH protocols.

Wi-Fi радио RED LION. Техническое описание

Overview:

Red Lion’s N-Tron® 702-W industrial Wi-Fi radios offer outstanding performance and extreme reliability under the harshest conditions. IEEE 802.11n support allows our Wi-Fi radios to utilize three antennas and Multiple-In, Multiple-Out (MIMO) technology for increased data throughput, while also providing 802.11a/b/g backwards compatibility.

Operation:

Our versatile 702-W Wi-Fi radios can be configured in a variety of ways. These include configuration as a mobile station, station wireless distribution system (WDS), access point or access point WDS. They can also operate as a transparent Layer 2 bridge or a Layer 3 router within the network.

Station: in "station" configuration, the 702-W connects a single device (MAC address) to a wireless access point and may be configured as a roaming station between access points. This allows the client to roam from one access point to another as signal strength becomes weak or service gets interrupted.

Station, WDS: in "station WDS" mode, the 702-W can be connected to a remote wired switch. This allows multiple devices (MAC address forwarding) to be connected to the wireless access

point when WDS is activated.

Access Point: in "access point" mode, the 702-W serves as a wireless “switch” for attached wireless stations. Wireless access points are commonly used to create a wireless local area network (WLAN) that spans an area around each access point. Each access point typically supports up to 250 stations.

Access Point, WDS: in "access point, WDS" mode, the 702-W provides wireless connections to a number of access points to expand wireless network coverage. In this configuration, the main base access point is extended using a series of relay access points (peer to peer) in WDS mode to create a wireless backbone (Extended Service Set) and, in turn, can form a WLAN consisting of thousands of stations. All stations should be configured in "station WDS" mode.
Correctly configured switches using WDS will create a single network, thereby providing station mobility throughout the wireless network.

Industrial Packaging:
702-W Wi-Fi radios are specifically designed to operate in industrial environments. With rugged enclosures and industrial specifications that include redundant power inputs, expanded shock tolerance, vibration, electrical noise and temperature fluctuations, our 702-W Wi-Fi radios easily meet and exceed the operating parameters of connected equipment in harsh environments. If deploying a Wi-Fi radio outdoors or in wet environments is a requirement, our 702M12-W offers an IP67 enclosure and M12 connectors.

Сотовые маршрутизаторы RED LION. Техническое описание

Overview:

Red Lion’s Sixnet® series IndustrialPro® SN-6000 cellular routers offer secure and reliable remote connectivity to deployed assets that utilize cellular carrier networks. Ideal for harsh environments, our rugged industrial routers provide easy wireless communication between SCADA servers, RTUs, PLCs, remote I/O and other Ethernet and serial connected devices such as security cameras or industrial sensors.

Cellular:
IndustrialPro cellular routers support the latest 4G LTE networks with fallback to 3G networks from leading global cellular carriers. This gives customers the flexibility to choose from a host of carriers that serve different locations.

Connectivity:
Red Lion's IndustrialPro cellular routers are available with multiple port configurations that include up to five 10/100Base-T(X) Ethernet ports. They also feature one RS-232 port and support for Serial-to-IP communications.

Security:
Designed to deliver secure communications to remote locations, our industrial cellular routers support robust security features such as VPN tunnels, port forwarding, stateful firewall, packet filtering, data encryption and an Access Control List (ACL).

Management:
IndustrialPro cellular routers can be managed locally through direct device connection or remotely via SixView Manager® software. Our flexible remote management software package is designed to increase productivity and reduce costs for organizations using Sixnet series industrial cellular routers. With a web-based console and customized dashboard, users are able to remotely access, configure and manage critical device information from a central location.

Сотовые RTU RAM 9000 RED LION. Техническое описание

Overview

Red Lion's Sixnet® series RAM® 9000 industrial cellular RTUs offer a secure and reliable method of remotely monitoring deployed assets that utilize cellular carrier networks. Ideal for harsh environments, our rugged RAM 9000 RTUs are ideal for connecting to Modbus or DNP3 devices such as SCADA servers, PLCs, remote I/O and other automation equipment.

Cellular

RAM 9000 cellular RTUs feature 4G LTE connectivity with software selectable multi-carrier support providing fallback to 3G networks. This provides the flexibility to change cellular carrier networks without the need to replace hardware.

Connectivity

Natively supporting Modbus, DNP3 and MQTT protocols, RAM 9000 industrial RTUs include high-density I/O with digital and analog and a relay. This helps to eliminate the need for external I/O to control applications. Our cellular RTUs are available with an optional split-LAN (WAN/LAN) architecture and features up to two 10/100Base-T(X) Ethernet ports. They also feature one RS-232 and one RS-485 serial port supporting serial-to-IP conversions.

Industrial Internet of Things (IIoT) Cloud Connectivity

Red Lion's RAM® industrial cellular RTUs feature cloud connectivity, which allows for reliable, secure and scalable communication to leading IIoT cloud platforms. RAMQTT, Red Lion's native MQTT client, simplifies implementations with pre-configured profiles for AT&T® M2X, Telenor Connexion, Amazon® AWS™ IoT, and AutoDesk® Fusion Connect. This functionality enables organizations to easily establish communication and start pushing data to select cloud platforms in minutes. Using the RAM software development kit (SDK), connectivity can be configured for additional platforms, including Telit® deviceWISE®, Set-Point IPwebcontrol, LEC IQ Web SCADA and Skkynet® Skkyhub™, to seamlessly connect, monitor and control equipment.

Event Engine

With an intuitive web-based, menu-driven interface that requires no knowledge of programming languages, the powerful RAM event engine can quickly be configured to trigger actions when pre-defined alarm values are met. For example, if a tank level is too high or a pressure level is out of range, the RAM event engine will not only cycle a relay to stop a pump or close a valve, but can also send text message notifications to alert when actions should be taken.

Security

Designed to deliver secure communications to remote locations, our industrial cellular RTUs support robust security features such as VPN tunnels, port forwarding, stateful firewall, packet filtering, data encryption and an Access Control List (ACL). In addition to these standard features, RAM industrial cellular RTUs and wired routers now provide enhanced communication security

using Distrix® Networks software-defined networking (SDN) technology. The addition of SDN technology provides flexibility, scalability and resiliency to legacy serial-based infrastructures or to present-day IP-based networks.

Management

Each RAM 9000 cellular RTU can be managed locally through direct device connection or remotely via SixView Manager® software. Our flexible remote management software package is designed to increase productivity and reduce cost for organizations using Sixnet series industrial cellular RTUs. With a web-based console and customized dashboard, users are able to remotely access, configure and manage critical device information from a central location.

Сотовые RTU RAM 6000 RED LION. Техническое описание

Overview

Red Lion's Sixnet® series RAM® 6000 cellular RTUs with GPS and multi-carrier 4G LTE support, feature up to five Ethernet ports and a RS-232 serial port. Featuring a web-based event engine that can trigger built-in I/O or send SMS text messages based on real-time operational data, RAM cellular RTUs can perform advanced control and communications for monitoring and controlling remote assets and processes in extreme conditions.

Cellular

RAM 6000 cellular RTUs are available in 4G LTE with multi-carrier support and single-carrier 3G support. 4G LTE multi-carrier models feature the ability to change cellular carrier networks via software selection without the need to replace physical hardware. This gives customers the flexibility to choose from a host of carriers that serve different locations.

Connectivity

Natively supporting Modbus, DNP3 and MQTT protocols, RAM 6000 industrial RTUs include digital and analog I/O. Built-in I/O helps to eliminate the need for external I/O to control applications. Our cellular RTUs are available with an optional split-LAN (WAN/LAN) architecture and features up to five 10/100Base-T(X) Ethernet ports. They also feature one RS-232 serial port supporting serial-to-IP conversion.

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Red Lion's RAM® industrial cellular RTUs feature cloud connectivity, which allows for reliable, secure and scalable communication to leading IIoT cloud platforms. RAMQTT, Red Lion's native MQTT client, simplifies implementations with pre-configured profiles for AT&T® M2X, Telenor Connexion, Amazon® AWS™ IoT, and AutoDesk® Fusion Connect. This functionality enables organizations to easily establish communication and start pushing data to select cloud platforms in minutes. Using the RAM software development kit (SDK), connectivity can be configured for additional platforms, including Telit® deviceWISE®, Set-Point IPwebcontrol, LEC IQ Web SCADA and Skkynet® Skkyhub™, to seamlessly connect, monitor and control equipment.

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Шлюз ICM8 RED LION. Техническое описание

Specifications:

The ICM8 is designed to act as an ethernet gateway offering protocol conversion for Red Lion panel meters. With two serial ports (one RS-232 and one RS-485) and a 10/100Base-T(X) Ethernet port, the unit performs protocol conversion, allowing Red Lion panel meters to communicate seamlessly to the ethernet network. Programming the unit can be accomplished via the RS-232 or the USB port using Crimson® software. It is important to note that this device is designed to function with Red Lion panel meters and will not offer protocol conversion if a Red Lion product is not connected to a serial port. The ICM8’S DIN-rail mounting saves time and panel space and snaps easily onto standard top hat (T) profile DIN rail.

Ethernet Gateway for Red Lion Panel Meters with RLC Serial Protocol

Programmable via Crimson 2.0 Software

USB Programming Port

Extensive Ethernet Driver List Allows Easy Data Mapping to PLCs, PCs, and SCADA Systems

10/100Base-T(X) Ethernet

Медиа преобразователи 102MC RED LION. Техническое описание

Red Lion's N-Tron® series 102MC media converters offer wide operating temperatures in a small footprint. With excellent EMI protection and a DIN rail-metal mountable housing, discover how our 102 media converters can easily expand your industrial Ethernet network.

Connectivity:
The 102MC media converters provides one RJ45 copper Ethernet port and one fiber optic cabling port. The RJ45 port is available in 10/100BaseTX. The fiber optic port is available with 10BaseFL or 100BaseFX speeds supporting industry standard SC or ST fiber connectors.

Environmental:
The N-Tron series 102MC industrial media converters feature an operating temperature up to -40° to 80°C for use in extreme environments. Housed in a metal enclosure with DIN-rail mounts and ESD protected circuitry, our media converters will remain running trouble-free for years.

Performance:
102MC media converters use built-in switching technology to distinguish port speeds. This means that 10Mbps devices can be connected to 100Mbps networks without issue. Our media converters will auto-sense network environments and provide the best performance possible. The 102MC-FL supports straight-through or cross-over cable communication.

Power Input:
Supporting redundant power inputs, the 102MC media converters accept 10 to 30 VDC input power.

Медиа преобразователи 302MC RED LION. Техническое описание

Red Lion's N-Tron® series 302 media converters offer high reliability and redundant power inputs. With excellent EMI protection and metal DIN-rail mountable housings, discover how our 302 media converters can easily expand your industrial Ethernet network. These media converters are also available with optional N-View™ OPC monitoring technology.

Connectivity:
The 302MC provides one RJ45 copper Ethernet port and one fiber optic cabling port. The RJ45 port is 10/100BaseT(X). The fiber optic port is 100BaseFX supporting industry standard SC or ST fiber connectors.

Environmental:
The N-Tron series 302MC industrial media converters feature an operating temperature of -20° to 70°C for use in extreme environments. Housed in a metal enclosure with DIN-rail mounts and ESD protected circuitry, our media converters will remain running trouble-free for years.

Performance:
The 302MC media converters use built-in switching technology to distinguish port speeds. This

means that 10Mbps or 100Mbps devices can be connected to 100Mbps networks with no problem. The media converters will auto-sense network environments and provide the best performance possible.

Monitoring:
The -N provides network performance monitoring using free N-View OPC monitoring software. The N-View monitoring technology provides more than 40 different status points on switch and port conditions and displays that information on a networked computer.

Power Input:
Supporting redundant power inputs, the 302MC products accept 10 to 30 VDC input power.

Преобразователи ICM RED LION. Техническое описание

Overview:

Red Lion's ICM4/5 serial converters provide the capability of connecting equipment with RS-485 serial communications to equipment with RS-232 communications. The ICM4/5 features user-selectable full or half duplex operation for ease of deployment. This serial converter module converts physical media types, but does not convert data formats. The ICM5 can be configured for DTE or DCE operation, allowing the use of modem or null-modem cables.

The ICM8 is designed as an Ethernet gateway offering conversion of multiple protocol conversion for Red Lion panel meters. With two serial ports (one RS-232 and one RS-485) and a 10/100Base-T(X) Ethernet Port, the unit performs protocol conversion, allowing Red Lion panel meters to communicate seamlessly to the Ethernet network.

Performance:
The ICM4/5 each provide three LED lights for status that can be viewed from the front of the converter. The serial converter LEDs display power, as well as transmit and receive activity. Power is provided by 9 to 26 VDC via removable terminal block. The ICM5 also provides robust 3-way signal isolation, preventing undesirable interference. The unit is equipped with a universal mounting foot for attachment to standard DIN rail, including top hat profile rail according to EN50022 - 35 x 7.5 mm and 35 x 15 mm, and G profile DIN rail according to EN50035 - G32.

Programming the ICM8 unit can be accomplished via the RS-232 or the USB port using Crimson® software. It is important to note that this device is designed to function with Red Lion panel meters only and will not function if a Red Lion product is not connected to at least one of the serial ports. The ICM8s DIN-rail mounting saves time and panel space and snaps easily onto standard top hat (T) profile DIN rail.

По вопросам продаж и поддержки обращайтесь:

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