TITLE:

AVAILABLE LANGUAGE: ES

Control System (local SCADA, PPC & IED included)

Equipment Data Sheet

ISSUED FOR CONSTRUCTION

Green Power

File: **GRE.EEC.R.99.CL.P.08602.12.129– Control System (local SCADA, PPC & IED included) Equipment DATA SHEET**

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GRE VALIDATION		
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COLLABORATORS	VERIFIED BY	VALIDATED BY

PROJECT / PLANT	*GRE CODE*																		
El Manzano	*GROUP*	*FUNCION*	*TYPE*	*ISSUER*		*COUNTRY*		*TEC*	*PLANT*				*SYSTEM*		*PROGRESSIVE*			*REVISION*	
	GRE	**EEC**	**R**	**9**	**9**	**C**	**L**	**P**	**0**	**8**	**6**	**0**	**2**	**1**	**2**	**1**	**2**	**9**	**0**	**0**

CLASSIFICATION	**FOR VALIDATION**	*UTILIZATION SCOPE*	**ISSUED FOR CONSTRUCTION**

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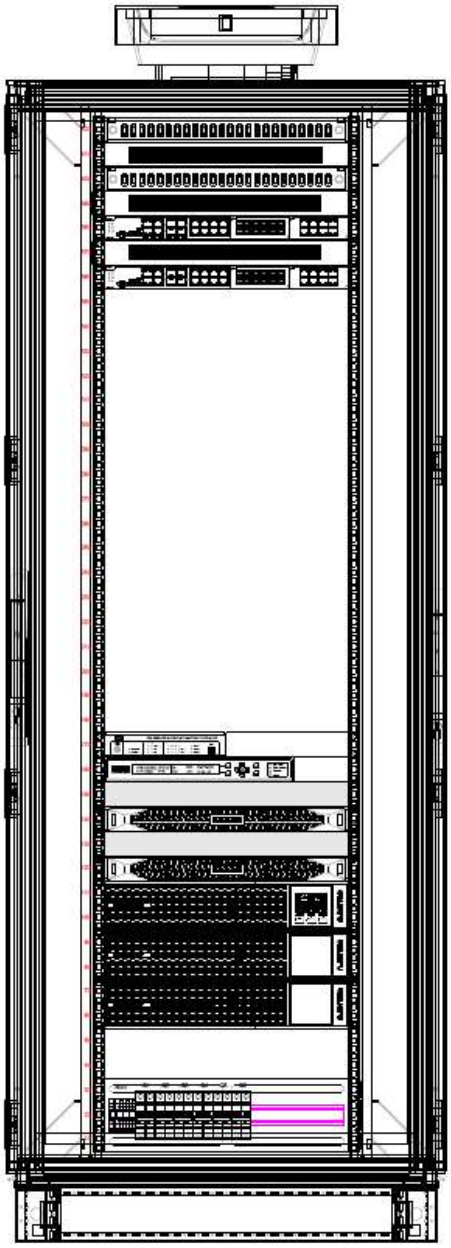
1. POWER PLANT CONTROLLER (PPC RACK)

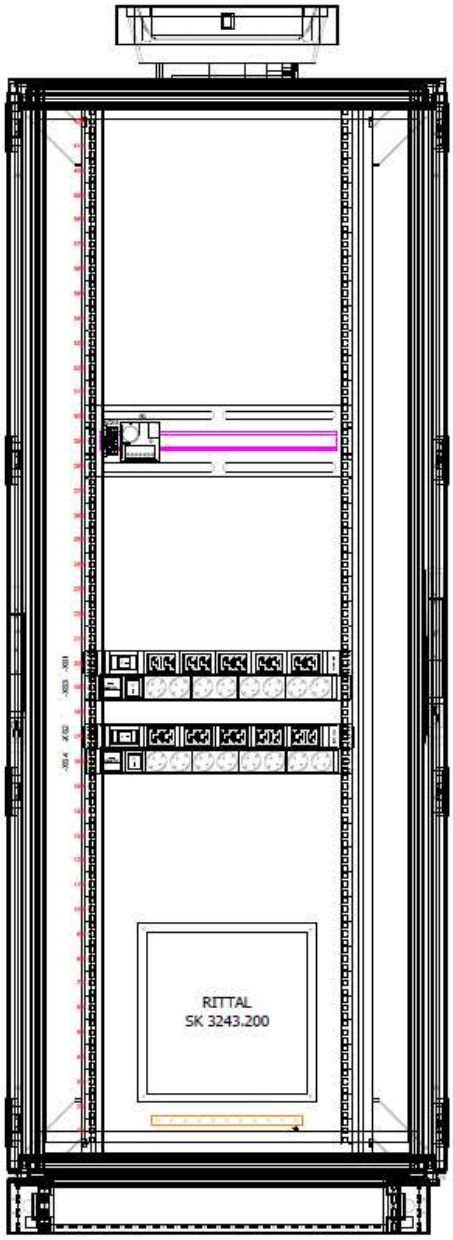
The GPM Power Plant Controller is a control system that can manage real and reactive power from solar, wind and diesel-hybrid plants.

Developed to be integrated into a power plant as a main governor, it can be configured as a master controller
for isolated power systems or to act as the interface with the grid's system operator when configured for grid-connected power plant integration.

It is not only intended for power generation monitoring and control but can also manage real power compensation based on Energy Storage Systems and deliver the VAR support required of the new generation of flexible grid-connected plants.

1.1. RITTAL NETWORK SERVER ENCLOSURE 42U





Material:	Sheet steel Aluminium
Surface finish:	Enclosure frame: Dipcoat-primed Interior installation: Dipcoat-primed Doors and roof: Dipcoat-primed, powder-coated
Colour:	Enclosure frame and panels: RAL 7035
Protection category IP to IEC 60 529:	IP 55 only in conjunction with baying seal or screw-fastened side panels
Supply includes:	TS 8 enclosure frame with doors and roof plate Glazed aluminium door at the front, 180° hinges Sheet steel door at the rear, 180° hinges Lock front and rear: Comfort handle for profile half-cylinders and security lock 3524 E Roof plate, one-piece, solid Base tray with gland plate, multi-piece, solid Two 482.6 mm (19") mounting frames, front and rear, depth-variable Baying seal and sealing kit for gland plates (supplied loose) Connection accessories for potential equalisation with earthing point (supplied loose) 12 x 482.6 mm (19") fastener, 1 U, conductive (supplied loose) 50 multi-tooth screws, conductive (supplied loose) IPPC pallet
Note:	Depending on how and where it is sited, the door opening angle may vary for selected applications For enclosures with height and depth 2000 x 1200 mm / 2200 x 1000 mm / 2200 x 1200 mm, the matching side panels are optionally available and are supplied fitted to the enclosure
Basic material:	Aluminium
Dimensions:	Width: 800 mm Height: 2000 mm Depth: 1000 mm
Installation height for components:	42 U
Distance between levels as delivered:	545 mm
482.6 mm (19") version:	Without 482.6 mm (19") interior installation
Construction doors:	Sealed, IP 55
Packs of:	1 pc(s).
Weight/pack:	104 kg
EAN:	4028177703117
Customs tariff number:	94032080
ETIM 7.0:	EC002499
ETIM 6.0:	EC002499
eCl@ss 8.0/8.1:	27180207
eCl@ss 6.0/6.1:	27180207
Product description:	TS IT, without 482.6 mm (19") interior installation, glazed door, WHD: 800 x 2000 x 1000 mm, 42 U, IP 55

*Nota: El Rack dispondrá de puerta metálica para así poder montar el Panel PC.

1.2. PPC - MOXA UC-8112 (4 UNITS)

Specifications

Computer	
CPU	Armv7 Cortex-A8 1 GHz
DRAM	UC-8112-ME-T-LX: 512 MB DDR3 UC-8112-ME-T-LX1: 1 GB DDR3
Storage Pre-installed	4 GB eMMC
Pre-installed OS	Linux Debian 9 (kernel v4.4)
Computer Interface	
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Expansion Slots	mPCIe slot x 1
Number of SIMs	1
SIM Format	Mini
Buttons	Reset button
Ethernet Interface	
Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2
Magnetic Isolation Protection	1.5 kV (built-in)
LED Indicators	
System	Power x 1 SD slots x 1 Programmable x 4
Wireless Signal Strength	Cellular/Wi-Fi x 3
Serial Interface	
Serial Ports	2 x RS-232/422/485
Console Port	1 x 4-pin header to DB9 console port
Data Bits	5, 6, 7, 8
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2

Serial Signals	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
Power Parameters	
Input Voltage	12 to 36 VDC
Input Current	500 mA @ 12 VAC
Power Consumption	6 W
Reliability	
Alert Tools	External RTC (real-time clock)
Automatic Reboot Trigger	External WDT (watchdog timer)
Physical Characteristics	
Housing	Metal
Dimensions	141 x 125.6 x 54.8 mm (5.55 x 4.94 x 2.15 in)
Weight	550 g (1.22 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Vibration	2 Grms @ IEC 60068-2-64, random wave, 5-500 Hz, 1 hr per axis (without USB devices attached)
Shock	IEC 60068-2-27
Standards and Certifications	
Safety	UL 60950-1
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Green Product	RoHS, CRoHS, WEEE
Hazardous Locations	Class I Division 2
MTBF	
Time	535,916 hrs
Standards	Telcordia (Bellcore) Standard

1.3. POWER SUPPLY WEIDMULLER PROECO TP 120W 24V 5A (2 UNITS)

Dimensiones y pesos

Profundidad	100 mm	Profundidad (pulgadas)	3,937 inch
Altura	125 mm	Altura (pulgadas)	4,921 inch
Anchura	40 mm	Anchura (pulgadas)	1,575 inch
Peso neto	675 g		

Temperaturas

Temperatura de almacenamiento	-40 °C...85 °C	Temperatura de servicio	-25 °C...70 °C
Temperatura de servicio, min.	-25 °C	Temperatura de servicio, max.	70 °C

Entrada

Consumo de corriente AC	1,26 A @ 230 V AC / 2,24 A @ 110 V AC	Consumo de corriente DC	0,39 A @ 370 V DC / 1,16 A @ 120 V DC
Frecuencia de entrada	47...63 Hz	Fusible de entrada (interno)	Sí
Fusible previo recomendado	4 A / DI, fusible 6 A, Char. B, interruptor de protección 3...5 A, Char. C, interruptores automáticos	Gama de tensión de entrada DC	80...370 V DC (Derating @ 120 V DC)
Intensidad de conexión	máx. 40A	Potencia admitida nominal	137,9 VA
Protectores de sobretensión, entrada	Varistor	Rango de tensión de entrada AC	85...264 V AC (deriva térmica a 100 V AC)
Sistema de conexión	Conexión brida-tornillo	Tensión nominal de entrada	100...240 VCA
Zona de frecuencia AC	47...63 Hz		

Salida

Carga capacitiva	ilimitado	Conmutado paralelo	sí, máx. 5
Corriente de salida continua @ $U_{Nominal}$	5 A @ 55 °C, 3,75 A @ 70 °C	Corriente de salida nominal para $U_{nominal}$	5 A a 55 °C
Potencia de salida	120 W	Protección contra tensión inversa	Sí
Protección de sobrecarga	Sí	Rizado residual, picos de tensión de desconexión	< 50 mV_{PP} @ 24 V DC, I_N
Sistema de conexión	Conexión brida-tornillo	Tensión de salida, max.	28 V
Tensión de salida, min.	22 V	Tensión de salida, observacione	(ajustable con potenciómetro)
Tensión nominal de salida	24 V DC ± 1 %	Tiempo de subida	≤ 100 ms

Datos generales

Corriente de descarga a tierra, máx.	3,5 mA	Factor de potencia (aprox.)	> 0,5 @ 230 V AC / > 0,53 @ 115 V AC
Grado de eficiencia	87 %	Máx. humedad rel. del aire (en servicio)	5 %...95 % RH
Posición de montaje, instrucciones de montaje	Montaje sobre carril TS 35	Protección contra cortocircuito	Sí
Protección contra exceso de temperatura	Sí	Protección contra tensión inversa de la carga	30...35 V DC
Pérdida de potencia, carga nominal	15 W	Pérdida de potencia, sin carga	4 W
Señalización	LED verde (U_{salida} > 21,6 V DC), LED amarillo (I_{salida} > 90 % $I_{Nominal}$ tip.), LED rojo (sobrecarga, sobretemperatura, cortocircuito, U_{salida} < 20,4 V DC)	Tiempo de puenteado de fallo de CA @ $I_{nominal}$	> 80 ms @ 230 V AC / > 20 ms @ 115 V AC
Tipo de protección	IP20	Versión especial de la capota	Metal, resistente a la corrosión

Coordenadas de aislamiento

Clase de protección	I, con conexión de tierra	Entrada de tensión de aislamiento / tierra	2 kV
Entrada de tensión de aislamiento / tierra	0,5 kV	Grado de polución	2
Tensión de aislamiento entrada /salida	3 kV		

EMC / choque / vibración

Emisión de ruidos de conformidad con la norma EN55032	Clase B	Limitación de corrientes de armónicos de red	Conforme a la norma EN 61000-3-2
Prueba de resistencia a interferencias según	EN 61000-4-2 (ESD), EN 61000-4-3 (RS), EN 61000-4-4 (encendido), EN 61000-4-5 (sobretensión), EN 61000-4-6 (dirigido), EN61000-4-8 (Fields), EN61000-4-11 (Dips)	Resistencia a la vibración según IEC 60068-2-6	1 g conforme a la norma EN 50178
Resistencia al impacto según IEC 60068-2-27	15 g en todas las direcciones		

Seguridad eléctrica (normas aplicadas)

Equipamiento eléctrico de las máquinas	según EN60204	Equipos electrónicos con componentes electrónicos	según EN50178 / VDE0160
Protección contra corrientes peligrosas	Según VDE 0106-101	Separación segura / protección frente a choques eléctricos	VDE0100-410 / según DIN57100-410
Tensión baja de protección	SELV según IEC 60950-1, PELV conforme a la norma EN 60204-1	Transformadores de seguridad para fuentes de alimentación conmutadas	Conforme a la norma EN 61558-2-16

Datos de conexión (entrada)

Sección de conexión del conductor AWG/kcmil , max.	12	Sección de conexión del conductor AWG/kcmil , min.	26
Sección de conexión del conductor, flexible , max.	2,5 mm²	Sección de conexión del conductor, flexible , min.	0,5 mm²
Sección del conductor, rígido , máx.	6 mm²	Sección del conductor, rígido , mín.	0,5 mm²
Sistema de conexión	Conexión brida-tornillo		

Datos de conexión (salida)

Número de bornes	6 (++,–,13,14)	Sección de conexión del conductor AWG/kcmil , max.	12
Sección de conexión del conductor AWG/kcmil , min.	26	Sección de conexión del conductor, flexible , max.	2,5 mm²
Sección de conexión del conductor, flexible , mín.	0,5 mm²	Sección del conductor, rígido , máx.	6 mm²
Sección del conductor, rígido , mín.	0,5 mm²	Sistema de conexión	Conexión brida-tornillo

PA52_7 Señalización

Carga de contacto (CNA)	max. 30 V DC / 1 A	Contacto libre de potencial	Sí
Relé encendido/apagado	Tensión de salida >21,6 V DC/ <20,4 V DC, sobrecarga		

Homologaciones

Instituto (cULus)	CULUS	N.º de certificado (cULus)	E258476

Clasificaciones

ETIM 6.0	EC002540	ETIM 7.0	EC002540
ETIM 8.0	EC002540	ECLASS 9.0	27-04-07-01
ECLASS 9.1	27-04-07-01	ECLASS 10.0	27-04-07-01
ECLASS 11.0	27-04-07-01	ECLASS 12.0	27-04-07-01

Conformidad medioambiental del producto

REACH SVHC	Lead 7439-92-1
SCIP	6d8cdf22-8230-4af8-86c8-3558c716666d

1.4. CP DC UPS 24V 20A/10A SERVICE

Dimensiones y pesos

Profundidad	150 mm	Profundidad (pulgadas)	5,905 inch
Altura	130 mm	Altura (pulgadas)	5,118 inch
Anchura	66 mm	Anchura (pulgadas)	2,598 inch
Peso neto	1.139 g		

Temperaturas

Temperatura de almacenamiento	-40 °C...85 °C	Temperatura de servicio	-25 °C...70 °C
Temperatura de servicio, min.	-25 °C	Temperatura de servicio, max.	70 °C
Humedad	5...95 % (sin condensación)		

Cargador de batería integrado

Coeficiente de temperatura	- 48 mV / °C	Corriente de carga	0,15 cA
Función de carga	Curva característica IU	Tensión de carga (compensación en función de la temperatura)	27, 48 V a 20°C
Test de disponibilidad de batería	cada minuto		

Elementos operativos y entradas de mando

Conmutador DIP de funciones	Inversión de salidas de transistor, Funcionamiento sin sonda de temperatura	Desconexión remota (enclavamiento)	Sí
Selector corriente de salida	20 A, 10 A	Selector de batería	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Sin batería, Servicio
Selector de tiempos de autonomía	0,5 min, 1 min, 3 min, 5 min, 10 min, 20 min, 30 min, 45 min, ∞, ∞ w/0	Sonda de temperatura	NTC 100 kΩ

Módulo batería

Conexión en paralelo opcional	Sí, máx. 2	Medio de almacenamiento	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Seleccionable con conmutador rotativo
Tensión nominal	24 V		

Entrada

Consumo de corriente DC	máx. 200 mA (sin batería), máx. 0,5 A (con batería totalmente cargada)	Corriente de entrada	≤ 13 A (para 10 A), ≤ 23 A (para 20 A)
Corriente de entrada máxima admisible	28 A	Fusible de entrada (interno)	Sí
Gama de tensión de entrada DC	20...30 V DC	Tensión nominal de entrada	24 V DC
Técnica de conexión de conductores	Conexión brida-tornillo		

Salida

Coeficiente de temperatura	- 48 mV / °C	Conmutado paralelo	Sí, máx. 2, sí, con módulo del diodo
Corriente de salida continua @ $U_{Nominal}$	24 A @ 45 °C, 20 A @ 60 °C, 15 A @ 70 °C	Corriente de salida nominal para $U_{nominal}$	20 A @ 60 °C
Intensidad de salida, max.	24 A	Protección contra tensión inversa	Sí
Protección de sobrecarga	Sí	Rizado residual, picos de tensión de desconexión	< 50 mV_{PP} @ 24 V DC, I_N
Sonda de temperatura	NTC 100 kΩ	Tensión de salida, observacione	Vo = Vin - 0,2 V funcionamiento normal (Imáx), Vo = Vin - 0,3 V alimentación batería (Imáx)
Tensión nominal de salida	24 V DC ± 1 %	Técnica de conexión de conductores	Conexión brida-tornillo

Datos generales

Categoría de sobretensión	III	Grado de eficiencia	≥ 96% modo normal, batería cargándose, ≥ 98% modo normal, batería cargada, ≥ 98% modo memoria tampón
Humedad	5...95 % (sin condensación)	Limitación de intensidad	> 120 % I_N
Margen	En función de la batería conectada	Medio de almacenamiento	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Seleccionable con conmutador rotativo
Pie de enclavamiento	Metálico	Posición de montaje, instrucciones de montaje	Horizontal en un carril TS35, 50 mm de espacio en parte superior e inferior para circ. de aire. Se pueden montar en línea sin espacio intermedio.
Protección contra cortocircuito	Sí	Protección contra tensión inversa de la carga	32...34 V DC
Pérdida de potencia	< 10 W	Tipo de protección	IP20
Versión especial de la capota	Metal, resistente a la corrosión		

Coordenadas de aislamiento

Categoría de sobretensión	III	Clase de protección	III, sin conexión PE, para SELV
Grado de polución	2	Separación galvánica de entrada-tierra	1 kV
Separación galvánica de salida-tierra	1 kV	Tensión de aislamiento	1 kV DC

EMC / choque / vibración

Emisión de ruidos de conformidad con la norma EN55032	Clase B	Prueba de resistencia a interferencias según	EN 61000-4-2 (ESD)| EN 61000-4-3 y EN 61000-4-8 (campos)|EN 61000-4-4 (encendido)| EN 61000-4-5 (sobretensión)|EN 61000-4-6 (dirigido)|EN 61000-4-11 (inmersiones)
Resistencia a la vibración según IEC 60068-2-6	2,3 g	Resistencia al impacto según IEC 60068-2-27	30 g en todas las direcciones

1.5. UPS BATTERY WEIDMULLER CP A BATTERY 24V DC3.4AH (2

Dimensions and weights

Depth	137 mm	Depth (inches)	5.394 inch
Height	144 mm	Height (inches)	5.669 inch
Width	108 mm	Width (inches)	4.252 inch
Net weight	3,478 g		

Temperatures

Storage temperature	-15 °C...40 °C	Ambient temperature	0°...+40°C (Charging); -15° ...+50°C (Discharging)
Operating temperature	0 °C...40 °C	Operating temperature, min.	0 °C
Operating temperature, max.	40 °C		

Operating interfaces and control inputs

Temperature probe	NTC 100 kΩ

Input

Charging current, max.	0.51 A	Nominal capacity	3.4 Ah
Rated input voltage	24 V DC		

Output

Buffer time 10A	11.3 min	Buffer time 20A	5 min
Output current, max.	25 A	Overload and short circuit protection	25 A fuse
Parallel connection option	Yes	Protection against inverse voltage	Yes
Temperature probe	NTC 100 kΩ		

General data

Clip-in foot	metal	Max. perm. air humidity (operational)	5 %...95 % RH
Protection degree	IP20	Shock wall acc. to IEC 68227	30 g
Vibration DIN rail/wall in accordance with IEC 68-2-6	0.7 / 0.7 g		

Insulation coordination

Protection class	III, with no ground connection, for SELV

Connection data (input)

Conductor cross-section, AWG/kcmil , max.	10	Conductor cross-section, AWG/kcmil , min.	22
Conductor cross-section, flexible , min.	0.5 mm²	Conductor cross-section, rigid , max.	6 mm²
Conductor cross-section, rigid , min.	0.2 mm²	Wire connection cross section, flexible (input), max.	6 mm²

Connection data (output)

Conductor cross-section, AWG/kcmil , max.	10	Conductor cross-section, AWG/kcmil , min.	22
Conductor cross-section, flexible , max.	6 mm²	Conductor cross-section, flexible , min.	0.5 mm²
Conductor cross-section, rigid , max.	6 mm²	Conductor cross-section, rigid , min.	0.2 mm²
Number of terminals	2 (+ / -)		

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Technical data

Connection data (signal)

Number of terminals	2	Wire connection method	Pluggable screw connection
Wire cross-section, AWG/kcmil , max.	16	Wire cross-section, AWG/kcmil , min.	28
Wire cross-section, solid , max.	1.5 mm²	Wire cross-section, solid , min.	0.2 mm²

Approbations

Certificate no. (cULus)	E349959	Institute (cULus)	CULUS

Classifications

ETIM 6.0	EC002850	ETIM 7.0	EC002850
ETIM 8.0	EC002850	ECLASS 9.0	27-04-06-92
ECLASS 9.1	27-04-92-01	ECLASS 10.0	27-04-06-92
ECLASS 11.0	27-04-06-92	ECLASS 12.0	27-04-06-92

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
SCIP	30bf869c-8adc-4ed2-ad02-c1fec963e943

1.6. MÓDULO DE REDUNDANCIA PRO RM 10

Dimensions and weights

Depth	125 mm	Depth (inches)	4.921 inch
Height	130 mm	Height (inches)	5.118 inch
Width	30 mm	Width (inches)	1.181 inch
Net weight	47 g		

Temperatures

Storage temperature	-40 °C...85 °C	Operating temperature	-40 °C...70 °C
Operating temperature, min.	-40 °C	Operating temperature, max.	70 °C
Humidity	5-95% relative humidity, T_u = 40°C, without condensation		

Input

Connection system	PUSH IN	DC input voltage range	10 ... 32 V DC
Input current	2 × 12 A (-40 °C ¯ +45 °C), 2 × 10 A (+45 °C ¯ +60 °C), 2 × 7.5 A (+70 °C)	Nominal power consumption	240 VA
Rated input voltage	24 V DC		

Output

Connection system	PUSH IN	Continous output current @ $U_{Nominal}$	1 × 24 A (-40 °C ¯ +45 °C), 1 × 20 A (+45 °C ¯ +60 °C), 1 × 15 A (+70 °C)
Output current, max.	24 A	Output power	477.4 W
Output voltage, max.	32 V	Output voltage, min.	9.87 V
Rated output voltage	V_{INPUT}-typ. 0.13 V		

General data

Degree of efficiency	> 98%	Derating	> 60°C / 75% @ 70°C
Humidity	5-95% relative humidity, T_u = 40°C, without condensation	Mounting position, installation notice	Horizontal on TS35 mounting rail. 50 mm of clearance at top & bottom for air circ. Can mount side by side with no space in between.
Protection degree	IP20	Short-circuit protection	No
Weight	497 g		

EMC / shock / vibration

Shock resistance IEC 60068-2-27	30 g in all directions	Vibration resistance IEC 60068-2-6	2.3 g (on DIN rail)

Insulation coordination

Insulation voltage input / earth	0.5 kV	Insulation voltage output / earth	0.5 kV
Protection class	III, with no ground connection, for SELV		

Connection data (input)

Conductor cross-section, AWG/kcmil , max.	12	Conductor cross-section, AWG/kcmil , min.	26
Conductor cross-section, flexible , min.	0.2 mm²	Conductor cross-section, rigid , max.	2.5 mm²
Conductor cross-section, rigid , min.	0.2 mm²	Connection system	PUSH IN
Wire connection cross section, flexible (input), max.	2.5 mm²		

Connection data (output)

Conductor cross-section, AWG/kcmil , max.	8	Conductor cross-section, AWG/kcmil , min.	24
Conductor cross-section, flexible , max.	6 mm²	Conductor cross-section, flexible , min.	0.2 mm²
Conductor cross-section, rigid , max.	10 mm²	Conductor cross-section, rigid , min.	0.2 mm²
Connection system	PUSH IN	Number of terminals	2 (+ / -)

Connection data (signal)

Wire connection method	PUSH IN	Wire cross-section, AWG/kcmil , max.	16
Wire cross-section, AWG/kcmil , min.	24	Wire cross-section, solid , max.	1.5 mm²
Wire cross-section, solid , min.	0.2 mm²		

Approbations

Certificate no. (cULus)	E258476	Institute (cULus)	CULUS

Classifications

ETIM 6.0	EC002850	ETIM 7.0	EC002850
ETIM 8.0	EC002850	ECLASS 9.0	27-04-06-92
ECLASS 9.1	27-04-92-90	ECLASS 10.0	27-04-06-92
ECLASS 11.0	27-04-06-92	ECLASS 12.0	27-04-06-92

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
SCIP	cc374e6c-371c-484b-a36d-6c65c5030ae7

Approvals

1.7. INDUSTRIAL PANEL PC EPATEC QD

NOTA: Todos los equipos aplicables estan alineados con las políticas de ciberseguridad de EGP.

Size	7"	8"	10.1"	10.4"	11.6"	12"	15"	15.6"	17"	17.3"	19"	19.1"W	21.5"
Model Feature	Aluminum Alloy Enclosure,7mm front Bezel, IP65 front, Black & Silver Color.												
Display													
Signal	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS	LVDS
Panel Type	High Quality Industrial LCD Panel with LED backlight, A Grade												
Aspect Ratio	16:9	4:3	16:10	4:3	16:9	4:3	4:3	16:9	4:3	16:9	4:3	16:10	16:9
Resolution	1024*600	1024*768	1280x800	1024x768	1920*1080	1024*768	1024x768	1920*1080	1280x1024	1920*1080	1280x1024	1440x900	1920x1080
Contrast	800:1	800:1	800:1	800:1	800:1	800:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1	1000:1
Brightness	250nit	250nit	300nit	300nit	350nit	350nit	350nit	350nit	350nit	350nit	350nit	350nit	400nit
Active Area (mm)	154.81x86.52	163.04x122.54	217.3x136.3	213.6x161	257*145	248.9x174.4	305x229	345.2x194.6	337.9x270.3	383.3x211.2	377.32x302.06	409.5x257.4	476.64x268
Viewing Angle	Horizonal -75~80 Vertical -80~80												
Display Colors	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M	16.7M
PC													
Configuration													
Processor	Intel® Celeron® J4105 Processor												
Chipset	INTEL GEMINI LAKE												
Memorry	**4 GB DDR4, max. 8 GB**												
Storage	**64 GB mSATA, max. 512 GB**												
Ethernet Card	Realtek PCI-E NIC RTL811F FOR 1000Mbps												
Audio Card	Realtek ALC662 5.1 Channel HDA Codec												
Rear Ports													
USB2.0	1	1	1	1	1	3	3	3	3	3	3	3	3
USB3.0	1	1	1	1	1	1	1	1	1	1	1	1	1
RS232	1	1	1	1	1	2	2	2	2	2	2	2	2
RS485	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized
VGA	1	1	1	1	1	1	1	1	1	1	1	1	1
HDMI	1	1	1	1	1	1	1	1	1	1	1	1	1
RJ45	1	1	1	1	1	1	1	1	1	1	1	1	1
MIC-in & Line-Out	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
DC IN	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V	12V 5A ... 24V
WiFi	802.11a/b/g/n												
Dual Lan/RJ45	Customized	Customized	Customized	Customized	Customized	Customized	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3G/4G Module	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized	Customized
Touchscreen													
Touch Type	Projected Capacitive Multitouch	10 points Projected Capacitive Touchscreen Multi Touch											
Others													
Speaker	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2	8Ω 4W X2
OS SUPPORT	**Windows 10 / Ubuntu**												
Operating Tempretature	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°	-10°---55°
Operating Humidity	20-85	20-85	20-85	20-85	20-85	20-85	20-85	20-85	20-85	20-85	20-85	20-85	20-85
Net Weight(KG)	1.8	1.8	1.8	1.8	1.8	1.8	2.3	3	3	4.5	4.5	4.3	4.9
Mount Method	75x75,100x100 VESA; Desktop, Wall Mount, Embedded, Open Frame												
Package	Foam+Carton												
Accessory	AC Cable, Power Adapter, Wall Mount, Desktop, Mount Clips, Driver and Manual												

1.8. MOXA SWITCH EDS-408A-SS-SC (2 UNITS)

EDS-408A Series

8-port entry-level managed Ethernet switches

Features and Benefits

- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and RSTP/STP for network redundancy
- IGMP Snooping, QoS, IEEE 802.1Q VLAN, and port-based VLAN supported
- Easy network management by web browser, CLI, Telnet/serial console, Windows utility, and ABC-01
- PROFINET or EtherNet/IP enabled by default (PN or EIP models)
- Supports MXstudio for easy, visualized industrial network management

Certifications

Introduction

The EDS-408A Series is designed especially for industrial applications. The switches support a variety of useful management functions, such as Turbo Ring, Turbo Chain, ring coupling, IGMP snooping, IEEE 802.1Q VLAN, port-based VLAN, QoS, RMON, bandwidth management, port mirroring, and warning by email or relay. The ready-to-use Turbo Ring can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the EDS-408A switches.

Additional Features and Benefits

- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, Modbus TCP and PROFINET[1] protocols for device management and monitoring
- EtherNet/IP EDS (Electronic Data Sheet) file, custom AOI (Add-On Instructions) and FactoryTalk® View faceplate available
- PROFINET GSDML file and SIMATIC STEP 7 device icons available[1]
- Port mirroring for online debugging
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p and TOS/DiffServ) to increase determinism
- RMON for proactive and efficient network monitoring
- SNMPv1/v2c/v3 for different levels of network management security
- Bandwidth management to prevent unpredictable network status

Specifications

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	EDS-408A/408A-T, EDS-408A-EIP/PN models: 8 EDS-408A-MM-SC/MM-ST/SS-SC models: 6 EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC models: 5 All models support: Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection
100BaseFX Ports (multi-mode SC connector)	EDS-408A-MM-SC/2M1S-SC models: 2 EDS-408A-3M-SC models: 3 EDS-408A-1M2S-SC models: 1
100BaseFX Ports (multi-mode ST connector)	EDS-408A-MM-ST models: 2 EDS-408A-3M-ST models: 3
100BaseFX Ports (single-mode SC connector)	EDS-408A-SS-SC/1M2S-SC models: 2 EDS-408A-2M1S-SC models: 1 EDS-408A-3S-SC/3S-SC-48 models: 3

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol

Optical Fiber

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	50/125 µm 800 MHz·km	G.652
Typical Distance		4 km	5 km	40 km
Wavelength	Typical (nm)	1300		1310
	TX Range (nm)	1260 to 1360		1280 to 1340
	RX Range (nm)	1100 to 1600		1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20		0 to -5
	RX Range (dBm)	-3 to -32		-3 to -34
	Link Budget (dB)	12		29
	Dispersion Penalty (dB)	3		1

Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.
Note: Compute the "typical distance" of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Ethernet Software Features

Filter	802.1Q VLAN, GMRP, GVRP, IGMP v1/v2, Port-based VLAN
Industrial Protocols	EtherNet/IP, Modbus TCP, EDS-408A-PN models: PROFINET IO Device (Slave)
Management	Back Pressure Flow Control, BOOTP, DHCP Option 66/67/82, DHCP Server/Client, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP
MIB	Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB
Redundancy Protocols	RSTP, STP, Turbo Chain, Turbo Ring v1/v2
Time Management	NTP Server/Client, SNTP

Ethernet Software Features	
Filter	802.1Q VLAN, GMRP, GVRP, IGMP v1/v2, Port-based VLAN
Industrial Protocols	EtherNet/IP, Modbus TCP, EDS-408A-PN models: PROFINET IO Device (Slave)
Management	Back Pressure Flow Control, BOOTP, DHCP Option 66/67/82, DHCP Server/Client, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP
MIB	Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB
Redundancy Protocols	RSTP, STP, Turbo Chain, Turbo Ring v1/v2
Time Management	NTP Server/Client, SNTP
Switch Properties	
IGMP Groups	256
MAC Table Size	8 K
Max. No. of VLANs	64
Packet Buffer Size	1 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094
Serial Interface	
Console Port	RS-232 (TxD, RxD, GND), 10-pin RJ45 (115200, n, 8, 1)

DIP Switch Configuration	
Ethernet Interface	Turbo Ring, Master, Coupler, Reserve
Input/Output Interface	
Alarm Contact Channels	Relay output with current carrying capacity of 1 A @ 24 VDC
Power Parameters	
Connection	1 removable 6-contact terminal block(s)
Input Voltage	All models: Redundant dual inputs EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC/EIP/PN models: 12/24/48 VDC EDS-408A-3S-SC-48/408A-3S-SC-48-T models: ±24/±48 VDC
Operating Voltage	EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC/EIP/PN models: 9.6 to 60 VDC EDS-408A-3S-SC-48 models: ±19 to ±60 VDC[2]
Input Current	EDS-408A, EDS-408A-EIP/PN/MM-SC/MM-ST/SS-SC models: 0.61 @ 12 VDC 0.3 @ 24 VDC 0.16 @ 48 VDC EDS-408A-3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC models: 0.73 @ 12 VDC 0.35 @ 24 VDC 0.18 @ 48 VDC EDS-408A-3S-SC-48 models: 0.33 A @ 24 VDC 0.17 A @ 48 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Physical Characteristics	
Housing	Metal
IP Rating	IP30
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	EDS-408A, EDS-408A-MM-SC/MM-ST/SS-SC/EIP/PN models: 650 g (1.44 lb) EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC models: 890 g (1.97 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
Safety	All models: EN 60950-1, UL 508 EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC models, EDS-EIP/PN models: UL 60950-1
EMC	EN 55032/24

EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	EDS-408A, EDS-408A-MM-SC/MM-ST/SS-SC/EIP/PN models: ATEX, Class I Division 2 EDS-408A, EDS-408A-MM-SC/MM-ST/SS-SC models: IECEx
Maritime	EDS-408A, EDS-408A-MM/SS-SC models: NK EDS-408A, EDS-408A-MM/SS-SC/EIP/PN models: DNV
Railway	EN 50121-4
Traffic Control	NEMA TS2
Freefall	IEC 60068-2-31
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	EDS-408A, EDS-408A-EIP/PN models: 1,339,439 hrs EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC models: 1,253,072 hrs EDS-408A-3S-SC-48 models: 989,940 hrs
Standards	Telcordia (Bellcore), GB

Warranty

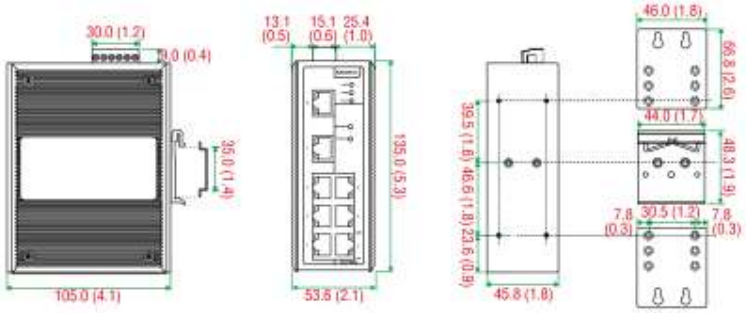
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDS-408A Series switch
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	4 x cap, plastic, for RJ45 port
Documentation	1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese 1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Side View | Front View | Rear View | DIN-Rail/Panel-Mounting Kit

Ordering Information

Model Name	Layer	Total No. of Ports	10/100BaseT(X) Ports RJ45 Connector	100BaseFX Ports Multi-Mode, SC Connector	100BaseFX Ports Multi-Mode, ST Connector	100BaseFX Ports Single-Mode, SC Connector	Operating Temp.
EDS-408A	2	8	8	-	-	-	-10 to 60°C
EDS-408A-T	2	8	8	-	-	-	-40 to 75°C
EDS-408A-MM-ST	2	8	6	-	2	-	-10 to 60°C
EDS-408A-MM-ST-T	2	8	6	-	2	-	-40 to 75°C
EDS-408A-MM-SC	2	8	6	2	-	-	-10 to 60°C
EDS-408A-MM-SC-T	2	8	6	2	-	-	-40 to 75°C
EDS-408A-SS-SC	2	8	6	-	-	2	-10 to 60°C
EDS-408A-SS-SC-T	2	8	6	-	-	2	-40 to 75°C
EDS-408A-3M-ST	2	8	5	-	3	-	-10 to 60°C
EDS-408A-3M-ST-T	2	8	5	-	3	-	-40 to 75°C
EDS-408A-3M-SC	2	8	5	3	-	-	-10 to 60°C
EDS-408A-3M-SC-T	2	8	5	3	-	-	-40 to 75°C
EDS-408A-3S-SC	2	8	5	-	-	3	-10 to 60°C
EDS-408A-3S-SC-T	2	8	5	-	-	3	-40 to 75°C
EDS-408A-3S-SC-48	2	8	5	-	-	3	-10 to 60°C
EDS-408A-3S-SC-48-T	2	8	5	-	-	3	-40 to 75°C
EDS-408A-1M2S-SC	2	8	5	1	-	2	-10 to 60°C
EDS-408A-1M2S-SC-T	2	8	5	1	-	2	-40 to 75°C
EDS-408A-2M1S-SC	2	8	5	2	-	1	-10 to 60°C
EDS-408A-2M1S-SC-T	2	8	5	2	-	1	-40 to 75°C

1.9. I/O CARD - IOLOGIK 1210/1214

ioLogik E1200 Series

Ethernet remote I/O with 2-port Ethernet switch

Features and Benefits

- User-definable Modbus TCP Slave addressing
- Supports RESTful API for IIoT applications
- Supports EtherNet/IP Adapter
- 2-port Ethernet switch for daisy-chain topologies
- Saves time and wiring costs with peer-to-peer communications
- Active communication with MX-AOPC UA Server
- Supports SNMP v1/v2c
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplifies I/O management with MXIO library for Windows or Linux
- Class I Division 2, ATEX Zone 2 certification[1]
- Wide operating temperature models available for -40 to 75°C (-40 to 167°F) environments

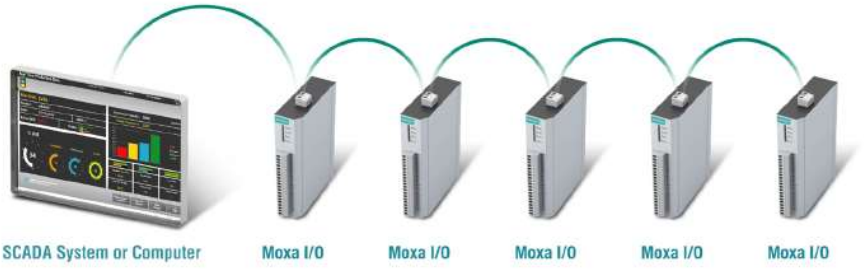
Certifications

Introduction

The ioLogik E1200 Series supports the most often-used protocols for retrieving I/O data, making it capable of handling a wide variety of applications. Most IT engineers use SNMP or RESTful API protocols, but OT engineers are more familiar with OT-based protocols, such as Modbus and EtherNet/IP. Moxa's Smart I/O makes it possible for both IT and OT engineers to conveniently retrieve data from the same I/O device. The ioLogik E1200 Series speaks six different protocols, including Modbus TCP, EtherNet/IP, and Moxa AOPC for OT engineers, as well as SNMP, RESTful API, and Moxa MXIO library for IT engineers. The ioLogik E1200 retrieves I/O data and converts the data to any of these protocols at the same time, allowing you to get your applications connected easily and effortlessly.

Daisy-Chained Ethernet I/O Connection

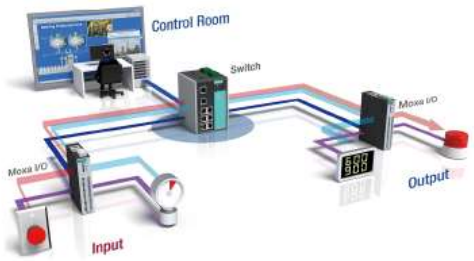
This industrial Ethernet remote I/O comes with two switched Ethernet ports to allow for the free flow of information downstream to another local Ethernet device, or upstream to a control server via expandable daisy-chained Ethernet I/O arrays. Applications such as factory automation, security and surveillance systems, and tunneled connections can make use of daisy-chained Ethernet for building multidrop I/O networks over standard Ethernet cables. Many industrial automation users are familiar with multidrop as the configuration most typically used in fieldbus solutions. The daisy-chain capabilities supported by ioLogik Ethernet remote I/O units not only increase the expandability and installation possibilities for your remote I/O applications, but also lower overall costs by reducing the need for separate Ethernet switches. Daisy-chaining devices in this way will also reduce overall labor and cabling expenses.



1. Class I Division 2 and ATEX currently do not apply to the E1213/E1213-T models.

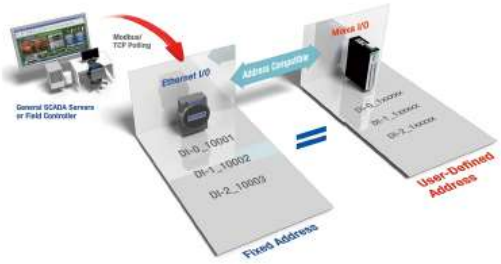
Save Time and Wiring Costs with Peer-to-Peer Communications

In remote automation applications, the control room and sensors are often far removed, making wiring over long distances a constant challenge. With peer-to-peer networking, users may now map a pair of ioLogik Series modules so that input values will be directly transferred to output channels, greatly simplifying the wiring process and reducing wiring costs.



User-Definable Modbus TCP Addressing for Painless Upgrading of Existing Systems

For Modbus devices that are controlled and detected by fixed addresses, users need to spend a vast amount of time researching and verifying initial configurations. Users need to locate each device's networking details, such as I/O channels or vendor-defined addresses, to enable the initial or start address of a SCADA system or PLC. Devices that support user-definable Modbus TCP addressing offer greater flexibility and easier setup. Instead of worrying about individual devices, users simply configure the function and address map to fit their needs.



Push Technology for Events

When used with MX-AOPC UA Server, devices can use active push communications when communicating changes in state and/or events to a SCADA system. Unlike a polling system, when using a push architecture for communications with a SCADA system, messages will only be delivered when changes in state or configured events occur, resulting in higher accuracy and lower amounts of data that need to be transferred.

Specifications

Input/Output Interface

Digital Input Channels	ioLogik E1210 Series: 16 ioLogik E1212/E1213 Series: 8 ioLogik E1214 Series: 6 ioLogik E1242 Series: 4
Digital Output Channels	ioLogik E1211 Series: 16 ioLogik E1213 Series: 4
Configurable DIO Channels (by jumper)	ioLogik E1212 Series: 8 ioLogik E1213/E1242 Series: 4
Relay Channels	ioLogik E1214 Series: 6
Analog Input Channels	ioLogik E1240 Series: 8 ioLogik E1242 Series: 4
Analog Output Channels	ioLogik E1241 Series: 4
RTD Channels	ioLogik E1260 Series: 6

Thermocouple Channels	ioLogik E1262 Series: 8
Isolation	3k VDC or 2k Vrms
Buttons	Reset button

Digital Inputs

Connector	Screw-fastened Euroblock terminal
Sensor Type	Dry contact Wet contact (NPN or PNP)
I/O Mode	DI or event counter
Dry Contact	On: short to GND Off: open
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC
Counter Frequency	250 Hz
Digital Filtering Time Interval	Software configurable
Points per COM	ioLogik E1210/E1212 Series: 8 channels ioLogik E1213 Series: 12 channels ioLogik E1214 Series: 6 channels ioLogik E1242 Series: 4 channels

Digital Outputs

Connector	Screw-fastened Euroblock terminal
I/O Type	ioLogik E1211/E1212/E1242 Series: Sink ioLogik E1213 Series: Source
I/O Mode	DO or pulse output
Current Rating	ioLogik E1211/E1212/E1242 Series: 200 mA per channel ioLogik E1213 Series: 500 mA per channel
Pulse Output Frequency	500 Hz (max.)
Over-Current Protection	ioLogik E1211/E1212/E1242 Series: 2.6 A per channel @ 25°C ioLogik E1213 Series: 1.5 A per channel @ 25°C
Over-Temperature Shutdown	175°C (typical), 150°C (min.)
Over-Voltage Protection	35 VDC

Relays

Connector	Screw-fastened Euroblock terminal
Type	Form A (N.O.) power relay
I/O Mode	Relay or pulse output
Pulse Output Frequency	0.3 Hz at rated load (max.)
Contact Current Rating	Resistive load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Contact Resistance	100 milli-ohms (max.)
Mechanical Endurance	5,000,000 operations
Electrical Endurance	100,000 operations @ 5 A resistive load

Breakdown Voltage	500 VAC
Initial Insulation Resistance	1,000 mega-ohms (min.) @ 500 VDC
Note	Ambient humidity must be non-condensing and remain between 5 and 95%. The relays may malfunction when operating in high condensation environments below 0°C.

Analog Inputs

Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
I/O Type	Differential
Resolution	16 bits
Input Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA 4 to 20 mA (with burn-out detection)
Accuracy	ioLogik E1240/E1242: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1240-T/E1242-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ±0.5% FSR @ -40 to 75°C
Sampling Rate	ioLogik E1240: 12 samples/sec per module (shared between up to 8 channels)[2] ioLogik E1242: 12 samples/sec per module (shared between up to 4 channels)[2]
Built-in Resistor for Current Input	120 ohms
Input Impedance	10 mega-ohms (min.)

Analog Outputs

Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
Output Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA
Resolution	12-bit
Accuracy	ioLogik E1241: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1241-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Load (Current Mode)	Internal power: 400 ohms (max.) 24 V external power: 1000 ohms (max.)
Voltage Output Short-Circuit Protection	10 mA

RTDs

Connector	Screw-fastened Euroblock terminal
Sensor Type	PT1000 (-200 to 350°C)

2. If N channels are enabled, the sampling rate for each enabled channel = 12/N samples/sec.

	PT50, PT100, PT200, PT500 (-200 to 850°C)
Resistance Type	310, 620, 1250, and 2200 ohms
Input Connection	2- or 3-wire
Sampling Rate	ioLogik E1260: 12 samples/sec per module (shared between up to 6 channels)[3]
Resolution	0.1°C or 0.1 ohms
Accuracy	ioLogik E1260: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1260-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Input Impedance	625 kilo-ohms (min.)
Thermocouples	
Connector	Screw-fastened Euroblock terminal
Sensor Type	J, K, T, E, R, S, B, N
Millivolt Type	±19.532 mV ±39.062 mV ±78.126 mV Fault and over-voltage protection: -35 to +35 VDC (power off); -25 to +30 VDC (power on)
Resolution	16 bits
Millivolt Accuracy	ioLogik E1262: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1262-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
TC Accuracy	Types J, T, E, S, B: ±5°C Types K, R, N: ±8°C
CJC Accuracy	±0.5°C @ 25°C ±1.5°C @ -40 to 75°C
Sampling Rate	ioLogik E1262: 12 samples/sec per module (shared between up to 8 channels)[3]
Input Impedance	10 mega-ohms (min.)
Ethernet Interface	
10/100BaseT(X) Ports (RJ45 connector)	2, 1 MAC address (Ethernet bypass)
Magnetic Isolation Protection	1.5 kV (built-in)
Ethernet Software Features	
Configuration Options	Web Console (HTTP), Windows Utility (ioSearch), MCC Tool
Industrial Protocols	Modbus TCP Server (Slave), Moxa AOPC (Active Tag), MXIO Library, EtherNet/IP Adapter
Management	RESTful API, SNMPv1/v2c, SNMPv1 Trap, HTTP, DHCP Client, BOOTP, IPv4, TCP/IP, UDP

3. If N channels are enabled, the sampling rate for each enabled channel = 12/N samples/sec.

MIB	Device Settings MIB
Security	Access control list
Security Functions	
Authentication	Local database
LED Interface	
LED Indicators	Power, Ready, Port 1, Port 2
Modbus TCP	
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Mode	Server (Slave)
Max. No. of Client Connections	10
EtherNet/IP	
Mode	Adapter
Max. No. of Scanner Connections	9 (for read-only), 1 (for read/write)
Power Parameters	
Power Connector	Screw-fastened Euroblock terminal
No. of Power Inputs	1
Input Voltage	12 to 36 VDC
Power Consumption	ioLogik E1210 Series: 110 mA @ 24 VDC ioLogik E1211 Series: 200 mA @ 24 VDC ioLogik E1212 Series: 155 mA @ 24 VDC ioLogik E1213 Series: 130 mA @ 24 VDC ioLogik E1214 Series: 188 mA @ 24 VDC ioLogik E1240 Series: 121 mA @ 24 VDC ioLogik E1241 Series: 194 mA @ 24 VDC ioLogik E1242 Series: 139 mA @ 24 VDC ioLogik E1260 Series: 110 mA @ 24 VDC ioLogik E1262 Series: 118 mA @ 24 VDC
Physical Characteristics	
Housing	Plastic
Dimensions	27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)
Weight	200 g (0.44 lb)
Installation	DIN-rail mounting, Wall mounting
Wiring	I/O cable, 16 to 26 AWG Power cable, 12 to 24 AWG
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	4000 m[4]

4. Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

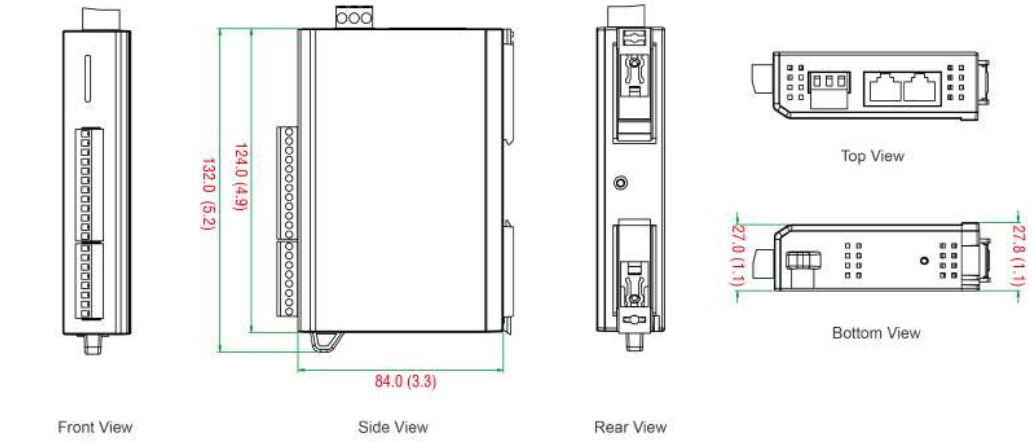
Standards and Certifications	
EMC	EN 55032/24, EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	ATEX, Class I Division 2[5]
Safety	UL 508
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	ioLogik E1210 Series: 671,345 hrs ioLogik E1211 Series: 923,027 hrs ioLogik E1212 Series: 561,930 hrs ioLogik E1213 Series: 715,256 hrs ioLogik E1214 Series: 808,744 hrs ioLogik E1240 Series: 474,053 hrs ioLogik E1241 Series: 888,656 hrs ioLogik E1242 Series: 502,210 hrs ioLogik E1260 Series: 660,260 hrs ioLogik E1262 Series: 631,418 hrs
Standards	Telcordia SR332

Warranty	
Warranty Period	ioLogik E1214: 2 years[6] ioLogik E1210/E1211/E1212/E1213/E1240/E1241/E1242/E1260/E1262: 5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x ioLogik E1200 Series remote I/O
Installation Kit	1 x terminal block, 8-pin, 3.81 mm 1 x terminal block, 12-pin, 3.81 mm 1 x terminal block, 3-pin, 5.00 mm
Documentation	1 x quick installation guide 1 x warranty card

5. ATEX and Class I Division 2 currently do not apply to the ioLogik E1213/E1213-T models.
6. Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

Dimensions

Unit: mm (inch)



Ordering Information

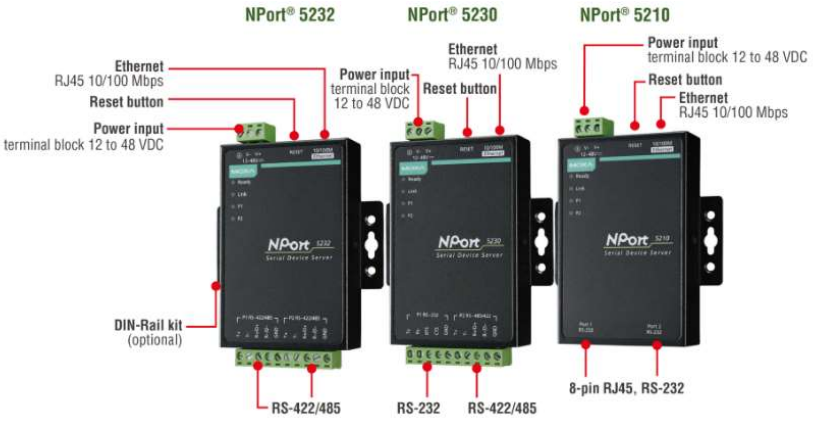
Model Name	Input/Output Interface	Digital Output Type	Operating Temp.
ioLogik E1210	16 x DI	–	-10 to 60°C
ioLogik E1210-T	16 x DI	–	-40 to 75°C
ioLogik E1211	16 x DO	Sink	-10 to 60°C
ioLogik E1211-T	16 x DO	Sink	-40 to 75°C
ioLogik E1212	8 x DI, 8 x DIO	Sink	-10 to 60°C
ioLogik E1212-T	8 x DI, 8 x DIO	Sink	-40 to 75°C
ioLogik E1213	8 x DI, 4 x DO, 4 x DIO	Source	-10 to 60°C
ioLogik E1213-T	8 x DI, 4 x DO, 4 x DIO	Source	-40 to 75°C
ioLogik E1214	6 x DI, 6 x Relay	–	-10 to 60°C
ioLogik E1214-T	6 x DI, 6 x Relay	–	-40 to 75°C
ioLogik E1240	8 x AI	–	-10 to 60°C
ioLogik E1240-T	8 x AI	–	-40 to 75°C
ioLogik E1241	4 x AO	–	-10 to 60°C
ioLogik E1241-T	4 x AO	–	-40 to 75°C
ioLogik E1242	4 DI, 4 x DIO, 4 x AI	Sink	-10 to 60°C
ioLogik E1242-T	4 DI, 4 x DIO, 4 x AI	Sink	-40 to 75°C
ioLogik E1260	6 x RTD	–	-10 to 60°C
ioLogik E1260-T	6 x RTD	–	-40 to 75°C
ioLogik E1262	8 x TC	–	-10 to 60°C
ioLogik E1262-T	8 x TC	–	-40 to 75°C

1.10. RS485 TO ETHERNET CONVERTER – NPORT 5232i

Features and Benefits

- Compact design for easy installation
- Socket modes: TCP server, TCP client, UDP
- Easy-to-use Windows utility for configuring multiple device servers
- Patented ADDC® (Automatic Data Direction Control) for 2-wire and 4-wire RS-485
- SNMP MIB-II for network management

Certifications



Specifications

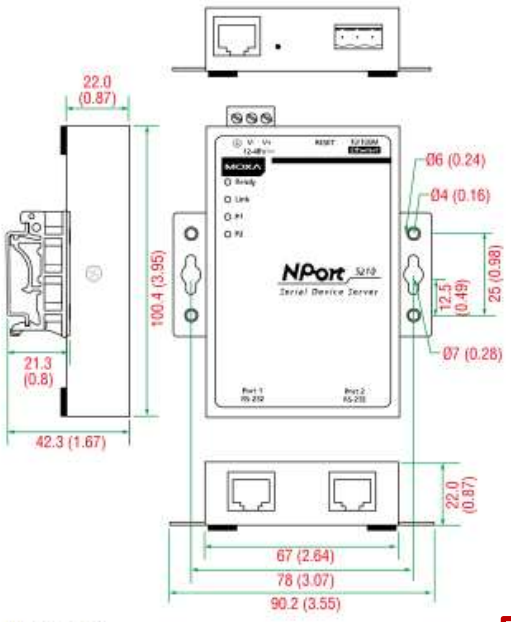
Ethernet Interface	
10/100BaseT(X) Ports (RJ45 connector)	1
Magnetic Isolation Protection	1.5 kV (built-in)
Ethernet Software Features	
Configuration Options	Windows Utility, Telnet Console, Web Console (HTTP), Serial Console
Management	DHCP Client, IPv4, SNTP, SMTP, SNMPv1, DNS, HTTP, ARP, BOOTP, UDP, TCP/IP, Telnet, ICMP
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded
Fixed TTY Drivers	SCO UNIX, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X
Linux Real TTY Drivers	Kernel version: 2.4.x, 2.6.x, 3.x, 4.x
Android API	Android 3.1.x and later
MIB	RFC1213, RFC1317
Serial Interface	
Connector	NPort 5210 Series: 8-pin RJ45 NPort 5230/5232 Series: Terminal block
No. of Ports	2
Serial Standards	NPort 5210 Series: RS-232 NPort 5230 Series: RS-232/422/485[1] NPort 5232 Series: RS-422/485
Operation Modes	Disabled, Ethernet Modem, Pair Connection, Real COM, Reverse Telnet, TCP Client, TCP Server, UDP
Baudrate	Supports standard baudrates (unit=bps): 110, 134, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 19200, 38400, 57600, 115200, 2304000

Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS (RS-232 only), DTR/DSR (RS-232 only), XON/XOFF
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
RS-485 Data Direction Control	ADDC® (automatic data direction control)
Terminator for RS-485	120 ohms
Isolation	NPort 5232I Series: 2 kV
Serial Signals	
RS-232	NPort 5210 Series: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND NPort 5230 Series: TxD, RxD, RTS, CTS, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
Power Parameters	
Input Current	NPort 5210/5230 Series: 325 mA @ 12 VDC NPort 5232/5232I Series: 280 mA @ 12 VDC, 365 mA @ 12 VDC
Input Voltage	12 to 48 VDC
No. of Power Inputs	1
Power Connector	1 removable 3-contact terminal block(s)
Reliability	
Automatic Reboot Trigger	Built-in WDT
Alert Tools	Built-in buzzer and RTC (real-time clock)
Physical Characteristics	
Housing	Metal
Dimensions (with ears)	NPort 5210/5230 Series, NPort 5232/5232-T: 90 x 100.4 x 22 mm (3.54 x 3.95 x 0.87 in) NPort 5232I/5232I-T: 90 x 100.4 x 35 mm (3.54 x 3.95 x 1.37 in)
Dimensions (without ears)	NPort 5210/5230 Series, NPort 5232/5232-T: 67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in) NPort 5232I/5232I-T: 67 x 100.4 x 35 mm (2.64 x 3.95 x 1.37 in)
Weight	NPort 5210 Series: 340 g (0.75 lb) NPort 5230 Series, NPort 5232/5232-T: 360 g (0.79 lb) NPort 5232I/5232I-T: 380 g (0.84 lb)
Installation	Desktop, DIN-rail mounting (with optional kit), Wall mounting
Environmental Limits	
Operating Temperature	Standard Models: 0 to 55°C (32 to 131°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications	
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 DIPs
Safety	UL 60950-1
Medical	NPort 5210 Series: EN 60601-1-2 Class B, EN 55011
Maritime	NPort 5230/5232 Series: DNV
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	NPort 5210 Series: 381,342 hrs NPort 5230 Series: 377,937 hrs NPort 5232 Series: 309,383 hrs
Standards	Telcordia (Bellcore) Standard TR/SR
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x NPort 5200 Series device server
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

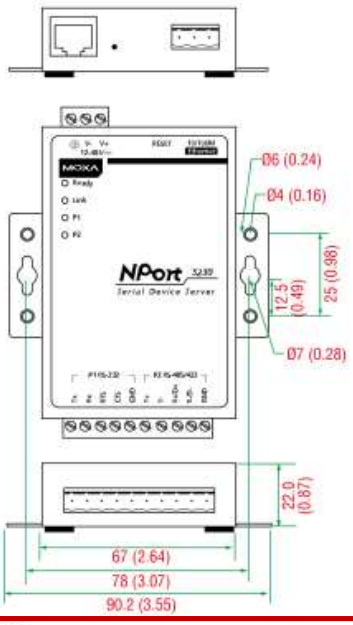
NPort 5210

Unit: mm (inch)



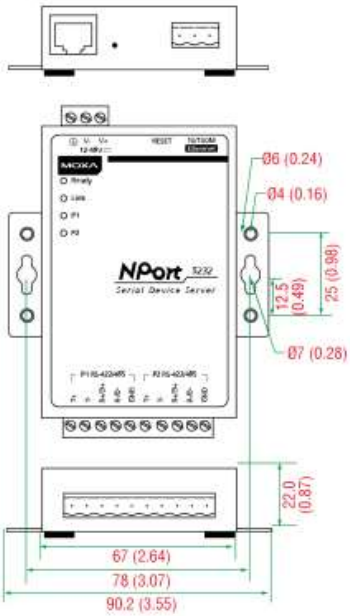
NPort 5230

Unit: mm (inch)



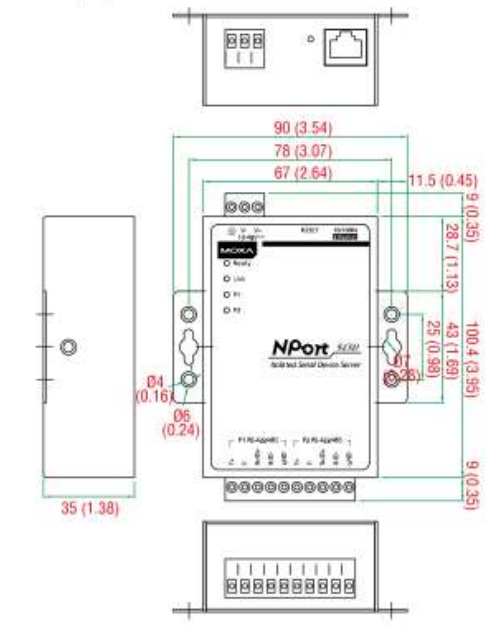
NPort 5232

Unit: mm (inch)



NPort 5232I

Unit: mm (inch)



2. REMOTE POI

2.1. ENCLOSURE PLM96

2.2. POWER SUPPLY WEIDMULLER PROECO TP 120W 24V 5A (2 UNITS)

Dimensiones y pesos

Profundidad	100 mm	Profundidad (pulgadas)	3,937 inch
Altura	125 mm	Altura (pulgadas)	4,921 inch
Anchura	40 mm	Anchura (pulgadas)	1,575 inch
Peso neto	675 g		

Temperaturas

Temperatura de almacenamiento	-40 °C...85 °C	Temperatura de servicio	-25 °C...70 °C
Temperatura de servicio, min.	-25 °C	Temperatura de servicio, max.	70 °C

Entrada

Consumo de corriente AC	1,26 A @ 230 V AC / 2,24 A @ 110 V AC	Consumo de corriente DC	0,39 A @ 370 V DC / 1,16 A @ 120 V DC
Frecuencia de entrada	47...63 Hz	Fusible de entrada (interno)	Sí
Fusible previo recomendado	4 A / DI, fusible 6 A, Char. B, interruptor de protección 3...5 A, Char. C, interruptores automáticos	Gama de tensión de entrada DC	80...370 V DC (Derating @ 120 V DC)
Intensidad de conexión	máx. 40A	Potencia admitida nominal	137,9 VA
Protectores de sobretensión, entrada	Varistor	Rango de tensión de entrada AC	85...264 V AC (deriva térmica a 100 V AC)
Sistema de conexión	Conexión brida-tornillo	Tensión nominal de entrada	100...240 VCA
Zona de frecuencia AC	47...63 Hz		

Salida

Carga capacitiva	ilimitado	Conmutado paralelo	sí, máx. 5
Corriente de salida continua @ $U_{Nominal}$	5 A @ 55 °C, 3,75 A @ 70 °C	Corriente de salida nominal para $U_{nominal}$	5 A a 55 ºC
Potencia de salida	120 W	Protección contra tensión inversa	Sí
Protección de sobrecarga	Sí	Rizado residual, picos de tensión de desconexión	< 50 mV_{pp} @ 24 V DC, I_N
Sistema de conexión	Conexión brida-tornillo	Tensión de salida, max.	28 V
Tensión de salida, min.	22 V	Tensión de salida, observacione	(ajustable con potenciómetro)
Tensión nominal de salida	24 V DC ± 1 %	Tiempo de subida	≤ 100 ms

Datos generales

Corriente de descarga a tierra, máx.	3,5 mA	Factor de potencia (aprox.)	> 0,5 @ 230 V AC / > 0,53 @ 115 V AC
Grado de eficiencia	87 %	Máx. humedad rel. del aire (en servicio)	5 %...95 % RH
Posición de montaje, instrucciones de montaje	Montaje sobre carril TS 35	Protección contra cortocircuito	Sí
Protección contra exceso de temperatura	Sí	Protección contra tensión inversa de la carga	30...35 V DC
Pérdida de potencia, carga nominal	15 W	Pérdida de potencia, sin carga	4 W
Señalización	LED verde (U_{salida} > 21,6 V DC), LED amarillo (I_{salida} > 90 % $I_{Nominal}$ tip.), LED rojo (sobrecarga, sobretemperatura, cortocircuito, U_{salida} < 20,4 V DC)	Tiempo de puenteado de fallo de CA @ $I_{nominal}$	> 80 ms @ 230 V AC / > 20 ms @ 115 V AC
Tipo de protección	IP20	Versión especial de la capota	Metal, resistente a la corrosión

Coordenadas de aislamiento

Clase de protección	I, con conexión de tierra	Entrada de tensión de aislamiento / tierra	2 kV
Entrada de tensión de aislamiento / tierra	0,5 kV	Grado de polución	2
Tensión de aislamiento entrada /salida	3 kV		

EMC / choque / vibración

Emisión de ruidos de conformidad con la norma EN55032	Clase B	Limitación de corrientes de armónicos de red	Conforme a la norma EN 61000-3-2
Prueba de resistencia a interferencias según	EN 61000-4-2 (ESD), EN 61000-4-3 (RS), EN 61000-4-4 (encendido), EN 61000-4-5 (sobretensión), EN 61000-4-6 (dirigido), EN61000-4-8 (Fields), EN61000-4-11 (Dips)	Resistencia a la vibración según IEC 60068-2-6	1 g conforme a la norma EN 50178
Resistencia al impacto según IEC 60068-2-27	15 g en todas las direcciones		

Seguridad eléctrica (normas aplicadas)

Equipamiento eléctrico de las máquinas	según EN60204	Equipos electrónicos con componentes electrónicos	según EN50178 / VDE0160
Protección contra corrientes peligrosas	Según VDE 0106-101	Separación segura / protección frente a choques eléctricos	VDE0100-410 / según DIN57100-410
Tensión baja de protección	SELV según IEC 60950-1, PELV conforme a la norma EN 60204-1	Transformadores de seguridad para fuentes de alimentación conmutadas	Conforme a la norma EN 61558-2-16

Datos de conexión (entrada)

Sección de conexión del conductor AWG/kcmil , max.	12	Sección de conexión del conductor AWG/kcmil , min.	26
Sección de conexión del conductor, flexible , max.	2,5 mm²	Sección de conexión del conductor, flexible , min.	0,5 mm²
Sección del conductor, rígido , máx.	6 mm²	Sección del conductor, rígido , mín.	0,5 mm²
Sistema de conexión	Conexión brida-tornillo		

Datos de conexión (salida)

Número de bornes	6 (++,–,13,14)	Sección de conexión del conductor AWG/kcmil , max.	12
Sección de conexión del conductor AWG/kcmil , min.	26	Sección de conexión del conductor, flexible , max.	2,5 mm²
Sección de conexión del conductor, flexible , mín.	0,5 mm²	Sección del conductor, rígido , máx.	6 mm²
Sección del conductor, rígido , mín.	0,5 mm²	Sistema de conexión	Conexión brida-tornillo

PA52_7 Señalización

Carga de contacto (CNA)	max. 30 V DC / 1 A	Contacto libre de potencial	Sí
Relé encendido/apagado	Tensión de salida >21,6 V DC/ <20,4 V DC, sobrecarga		

Homologaciones

Instituto (cULus)	CULUS	N.º de certificado (cULus)	E258476

Clasificaciones

ETIM 6.0	EC002540	ETIM 7.0	EC002540
ETIM 8.0	EC002540	ECLASS 9.0	27-04-07-01
ECLASS 9.1	27-04-07-01	ECLASS 10.0	27-04-07-01
ECLASS 11.0	27-04-07-01	ECLASS 12.0	27-04-07-01

Conformidad medioambiental del producto

REACH SVHC	Lead 7439-92-1
SCIP	6d8cdf22-8230-4af8-86c8-3558c716666d

2.3. CP DC UPS 24V 20A/10A SERVICE

Dimensiones y pesos

Profundidad	150 mm	Profundidad (pulgadas)	5,905 inch
Altura	130 mm	Altura (pulgadas)	5,118 inch
Anchura	66 mm	Anchura (pulgadas)	2,598 inch
Peso neto	1.139 g		

Temperaturas

Temperatura de almacenamiento	-40 °C...85 °C	Temperatura de servicio	-25 °C...70 °C
Temperatura de servicio, min.	-25 °C	Temperatura de servicio, max.	70 °C
Humedad	5...95 % (sin condensación)		

Cargador de batería integrado

Coeficiente de temperatura	- 48 mV / °C	Corriente de carga	0,15 cA
Función de carga	Curva característica IU	Tensión de carga (compensación en función de la temperatura)	27, 48 V a 20°C
Test de disponibilidad de batería	cada minuto		

Elementos operativos y entradas de mando

Conmutador DIP de funciones	Inversión de salidas de transistor, Funcionamiento sin sonda de temperatura	Desconexión remota (enclavamiento)	Sí
Selector corriente de salida	20 A, 10 A	Selector de batería	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Sin batería, Servicio
Selector de tiempos de autonomía	0,5 min, 1 min, 3 min, 5 min, 10 min, 20 min, 30 min, 45 min, ∞, ∞ w/0	Sonda de temperatura	NTC 100 kΩ

Módulo batería

Conexión en paralelo opcional	Sí, máx. 2	Medio de almacenamiento	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Seleccionable con conmutador rotativo
Tensión nominal	24 V		

Entrada

Consumo de corriente DC	máx. 200 mA (sin batería), máx. 0,5 A (con batería totalmente cargada)	Corriente de entrada	≤ 13 A (para 10 A), ≤ 23 A (para 20 A)
Corriente de entrada máxima admisible	28 A	Fusible de entrada (interno)	Sí
Gama de tensión de entrada DC	20...30 V DC	Tensión nominal de entrada	24 V DC
Técnica de conexión de conductores	Conexión brida-tornillo		

Salida

Coeficiente de temperatura	- 48 mV / °C	Conmutado paralelo	Sí, máx. 2, sí, con módulo del diodo
Corriente de salida continua @ $U_{Nominal}$	24 A @ 45 °C, 20 A @ 60 °C, 15 A @ 70 °C	Corriente de salida nominal para $U_{nominal}$	20 A @ 60 °C
Intensidad de salida, max.	24 A	Protección contra tensión inversa	Sí
Protección de sobrecarga	Sí	Rizado residual, picos de tensión de desconexión	< 50 mV_{PP} @ 24 V DC, I_N
Sonda de temperatura	NTC 100 kΩ	Tensión de salida, observacione	Vo = Vin - 0,2 V funcionamiento normal (Imáx), Vo = Vin - 0,3 V alimentación batería (Imáx)
Tensión nominal de salida	24 V DC ± 1 %	Técnica de conexión de conductores	Conexión brida-tornillo

Datos generales

Categoría de sobretensión	III	Grado de eficiencia	≥ 96% modo normal, batería cargándose, ≥ 98% modo normal, batería cargada, ≥ 98% modo memoria tampón
Humedad	5...95 % (sin condensación)	Limitación de intensidad	> 120 % I_N
Margen	En función de la batería conectada	Medio de almacenamiento	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Seleccionable con conmutador rotativo
Pie de enclavamiento	Metálico	Posición de montaje, instrucciones de montaje	Horizontal en un carril TS35, 50 mm de espacio en parte superior e inferior para circ. de aire. Se pueden montar en línea sin espacio intermedio.
Protección contra cortocircuito	Sí	Protección contra tensión inversa de la carga	32...34 V DC
Pérdida de potencia	< 10 W	Tipo de protección	IP20
Versión especial de la capota	Metal, resistente a la corrosión		

Coordenadas de aislamiento

Categoría de sobretensión	III	Clase de protección	III, sin conexión PE, para SELV
Grado de polución	2	Separación galvánica de entrada-tierra	1 kV
Separación galvánica de salida-tierra	1 kV	Tensión de aislamiento	1 kV DC

EMC / choque / vibración

Emisión de ruidos de conformidad con la norma EN55032	Clase B	Prueba de resistencia a interferencias según	EN 61000-4-2 (ESD)| EN 61000-4-3 y EN 61000-4-8 (campos)|EN 61000-4-4 (encendido)| EN 61000-4-5 (sobretensión)|EN 61000-4-6 (dirigido)|EN 61000-4-11 (inmersiones)
Resistencia a la vibración según IEC 60068-2-6	2,3 g	Resistencia al impacto según IEC 60068-2-27	30 g en todas las direcciones

2.4. BATTERY WEIDMULLER CP A BATTERY 24V DC3.4AH

Dimensions and weights			
Depth	137 mm	Depth (inches)	5.394 inch
Height	144 mm	Height (inches)	5.669 inch
Width	108 mm	Width (inches)	4.252 inch
Net weight	3,478 g		
Temperatures			
Storage temperature	-15 °C...40 °C	Ambient temperature	0°...+40°C (Charging); -15° ...+50°C (Discharging)
Operating temperature	0 °C...40 °C	Operating temperature, min.	0 °C
Operating temperature, max.	40 °C		
Operating interfaces and control inputs			
Temperature probe	NTC 100 kΩ		
Input			
Charging current, max.	0.51 A	Nominal capacity	3.4 Ah
Rated input voltage	24 V DC		
Output			
Buffer time 10A	11.3 min	Buffer time 20A	5 min
Output current, max.	25 A	Overload and short circuit protection	25 A fuse
Parallel connection option	Yes	Protection against inverse voltage	Yes
Temperature probe	NTC 100 kΩ		
General data			
Clip-in foot	metal	Max. perm. air humidity (operational)	5 %...95 % RH
Protection degree	IP20	Shock wall acc. to IEC 68227	30 g
Vibration DIN rail/wall in accordance with IEC 68-2-6	0.7 / 0.7 g		
Insulation coordination			
Protection class	III, with no ground connection, for SELV		
Connection data (input)			
Conductor cross-section, AWG/kcmil , max.	10	Conductor cross-section, AWG/kcmil , min.	22
Conductor cross-section, flexible , min.	0.5 mm²	Conductor cross-section, rigid , max.	6 mm²
Conductor cross-section, rigid , min.	0.2 mm²	Wire connection cross section, flexible (input), max.	6 mm²
Connection data (output)			
Conductor cross-section, AWG/kcmil , max.	10	Conductor cross-section, AWG/kcmil , min.	22
Conductor cross-section, flexible , max.	6 mm²	Conductor cross-section, flexible , min.	0.5 mm²
Conductor cross-section, rigid , max.	6 mm²	Conductor cross-section, rigid , min.	0.2 mm²
Number of terminals	2 (+ / -)		

www.weidmueller.com

Technical data

Connection data (signal)

Number of terminals	2	Wire connection method	Pluggable screw connection
Wire cross-section, AWG/kcmil , max.	16	Wire cross-section, AWG/kcmil , min.	28
Wire cross-section, solid , max.	1.5 mm²	Wire cross-section, solid , min.	0.2 mm²

Approbations

Certificate no. (cULus)	E349959	Institute (cULus)	CULUS

Classifications

ETIM 6.0	EC002850	ETIM 7.0	EC002850
ETIM 8.0	EC002850	ECLASS 9.0	27-04-06-92
ECLASS 9.1	27-04-92-01	ECLASS 10.0	27-04-06-92
ECLASS 11.0	27-04-06-92	ECLASS 12.0	27-04-06-92

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
SCIP	30bf869c-8adc-4ed2-ad02-c1fec963e943

2.5. MOXA SWITCH EDS-408A-SS-SC (2 UNITS)

EDS-408A Series

8-port entry-level managed Ethernet switches

Features and Benefits

- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and RSTP/STP for network redundancy
- IGMP Snooping, QoS, IEEE 802.1Q VLAN, and port-based VLAN supported
- Easy network management by web browser, CLI, Telnet/serial console, Windows utility, and ABC-01
- PROFINET or EtherNet/IP enabled by default (PN or EIP models)
- Supports MXstudio for easy, visualized industrial network management

Certifications

Introduction

The EDS-408A Series is designed especially for industrial applications. The switches support a variety of useful management functions, such as Turbo Ring, Turbo Chain, ring coupling, IGMP snooping, IEEE 802.1Q VLAN, port-based VLAN, QoS, RMON, bandwidth management, port mirroring, and warning by email or relay. The ready-to-use Turbo Ring can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the EDS-408A switches.

Additional Features and Benefits

- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, Modbus TCP and PROFINET[1] protocols for device management and monitoring
- EtherNet/IP EDS (Electronic Data Sheet) file, custom AOI (Add-On Instructions) and FactoryTalk® View faceplate available
- PROFINET GSDML file and SIMATIC STEP 7 device icons available[1]
- Port mirroring for online debugging
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p and TOS/DiffServ) to increase determinism
- RMON for proactive and efficient network monitoring
- SNMPv1/v2c/v3 for different levels of network management security
- Bandwidth management to prevent unpredictable network status

Specifications

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	EDS-408A/408A-T, EDS-408A-EIP/PN models: 8 EDS-408A-MM-SC/MM-ST/SS-SC models: 6 EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC models: 5 All models support: Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection
100BaseFX Ports (multi-mode SC connector)	EDS-408A-MM-SC/2M1S-SC models: 2 EDS-408A-3M-SC models: 3 EDS-408A-1M2S-SC models: 1
100BaseFX Ports (multi-mode ST connector)	EDS-408A-MM-ST models: 2 EDS-408A-3M-ST models: 3
100BaseFX Ports (single-mode SC connector)	EDS-408A-SS-SC/1M2S-SC models: 2 EDS-408A-2M1S-SC models: 1 EDS-408A-3S-SC/3S-SC-48 models: 3

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol

Optical Fiber

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	50/125 μm 800 MHz·km	G.652
Typical Distance		4 km	5 km	40 km
Wavelength	Typical (nm)	1300		1310
	TX Range (nm)	1260 to 1360		1280 to 1340
	RX Range (nm)	1100 to 1600		1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20		0 to -5
	RX Range (dBm)	-3 to -32		-3 to -34
	Link Budget (dB)	12		29
	Dispersion Penalty (dB)	3		1

Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.
Note: Compute the "typical distance" of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Ethernet Software Features

Filter	802.1Q VLAN, GMRP, GVRP, IGMP v1/v2, Port-based VLAN
Industrial Protocols	EtherNet/IP, Modbus TCP, EDS-408A-PN models: PROFINET IO Device (Slave)
Management	Back Pressure Flow Control, BOOTP, DHCP Option 66/67/82, DHCP Server/Client, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP
MIB	Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB
Redundancy Protocols	RSTP, STP, Turbo Chain, Turbo Ring v1/v2
Time Management	NTP Server/Client, SNTP

Ethernet Software Features	
Filter	802.1Q VLAN, GMRP, GVRP, IGMP v1/v2, Port-based VLAN
Industrial Protocols	EtherNet/IP, Modbus TCP, EDS-408A-PN models: PROFINET IO Device (Slave)
Management	Back Pressure Flow Control, BOOTP, DHCP Option 66/67/82, DHCP Server/Client, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP
MIB	Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB
Redundancy Protocols	RSTP, STP, Turbo Chain, Turbo Ring v1/v2
Time Management	NTP Server/Client, SNTP
Switch Properties	
IGMP Groups	256
MAC Table Size	8 K
Max. No. of VLANs	64
Packet Buffer Size	1 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094
Serial Interface	
Console Port	RS-232 (TxD, RxD, GND), 10-pin RJ45 (115200, n, 8, 1)

DIP Switch Configuration	
Ethernet Interface	Turbo Ring, Master, Coupler, Reserve
Input/Output Interface	
Alarm Contact Channels	Relay output with current carrying capacity of 1 A @ 24 VDC
Power Parameters	
Connection	1 removable 6-contact terminal block(s)
Input Voltage	All models: Redundant dual inputs EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC/EIP/PN models: 12/24/48 VDC EDS-408A-3S-SC-48/408A-3S-SC-48-T models: ±24/±48 VDC
Operating Voltage	EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC/EIP/PN models: 9.6 to 60 VDC EDS-408A-3S-SC-48 models: ±19 to ±60 VDC[2]
Input Current	EDS-408A, EDS-408A-EIP/PN/MM-SC/MM-ST/SS-SC models: 0.61 @ 12 VDC 0.3 @ 24 VDC 0.16 @ 48 VDC EDS-408A-3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC models: 0.73 @ 12 VDC 0.35 @ 24 VDC 0.18 @ 48 VDC EDS-408A-3S-SC-48 models: 0.33 A @ 24 VDC 0.17 A @ 48 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Physical Characteristics	
Housing	Metal
IP Rating	IP30
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	EDS-408A, EDS-408A-MM-SC/MM-ST/SS-SC/EIP/PN models: 650 g (1.44 lb) EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC models: 890 g (1.97 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
Safety	All models: EN 60950-1, UL 508 EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC models, EDS-EIP/PN models: UL 60950-1
EMC	EN 55032/24

EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	EDS-408A, EDS-408A-MM-SC/MM-ST/SS-SC/EIP/PN models: ATEX, Class I Division 2 EDS-408A, EDS-408A-MM-SC/MM-ST/SS-SC models: IECEx
Maritime	EDS-408A, EDS-408A-MM/SS-SC models: NK EDS-408A, EDS-408A-MM/SS-SC/EIP/PN models: DNV
Railway	EN 50121-4
Traffic Control	NEMA TS2
Freefall	IEC 60068-2-31
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	EDS-408A, EDS-408A-EIP/PN models: 1,339,439 hrs EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC models: 1,253,072 hrs EDS-408A-3S-SC-48 models: 989,940 hrs
Standards	Telcordia (Bellcore), GB

Warranty

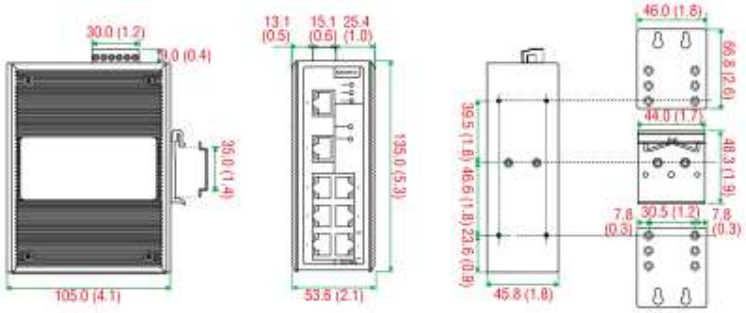
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDS-408A Series switch
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	4 x cap, plastic, for RJ45 port
Documentation	1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese 1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Side View | Front View | Rear View | DIN-Rail/Panel-Mounting Kit

Ordering Information

Model Name	Layer	Total No. of Ports	10/100BaseT(X) Ports RJ45 Connector	100BaseFX Ports Multi-Mode, SC Connector	100BaseFX Ports Multi-Mode, ST Connector	100BaseFX Ports Single-Mode, SC Connector	Operating Temp.
EDS-408A	2	8	8	-	-	-	-10 to 60°C
EDS-408A-T	2	8	8	-	-	-	-40 to 75°C
EDS-408A-MM-ST	2	8	6	-	2	-	-10 to 60°C
EDS-408A-MM-ST-T	2	8	6	-	2	-	-40 to 75°C
EDS-408A-MM-SC	2	8	6	2	-	-	-10 to 60°C
EDS-408A-MM-SC-T	2	8	6	2	-	-	-40 to 75°C
EDS-408A-SS-SC	2	8	6	-	-	2	-10 to 60°C
EDS-408A-SS-SC-T	2	8	6	-	-	2	-40 to 75°C
EDS-408A-3M-ST	2	8	5	-	3	-	-10 to 60°C
EDS-408A-3M-ST-T	2	8	5	-	3	-	-40 to 75°C
EDS-408A-3M-SC	2	8	5	3	-	-	-10 to 60°C
EDS-408A-3M-SC-T	2	8	5	3	-	-	-40 to 75°C
EDS-408A-3S-SC	2	8	5	-	-	3	-10 to 60°C
EDS-408A-3S-SC-T	2	8	5	-	-	3	-40 to 75°C
EDS-408A-3S-SC-48	2	8	5	-	-	3	-10 to 60°C
EDS-408A-3S-SC-48-T	2	8	5	-	-	3	-40 to 75°C
EDS-408A-1M2S-SC	2	8	5	1	-	2	-10 to 60°C
EDS-408A-1M2S-SC-T	2	8	5	1	-	2	-40 to 75°C
EDS-408A-2M1S-SC	2	8	5	2	-	1	-10 to 60°C
EDS-408A-2M1S-SC-T	2	8	5	2	-	1	-40 to 75°C

2.6. I/O CARD - IOLOGIK 1210/1214

ioLogik E1200 Series

Ethernet remote I/O with 2-port Ethernet switch

Features and Benefits

- User-definable Modbus TCP Slave addressing
- Supports RESTful API for IIoT applications
- Supports EtherNet/IP Adapter
- 2-port Ethernet switch for daisy-chain topologies
- Saves time and wiring costs with peer-to-peer communications
- Active communication with MX-AOPC UA Server
- Supports SNMP v1/v2c
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplifies I/O management with MXIO library for Windows or Linux
- Class I Division 2, ATEX Zone 2 certification[1]
- Wide operating temperature models available for -40 to 75°C (-40 to 167°F) environments

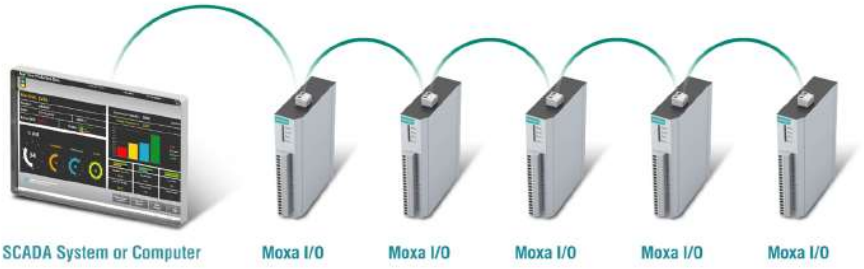
Certifications

Introduction

The ioLogik E1200 Series supports the most often-used protocols for retrieving I/O data, making it capable of handling a wide variety of applications. Most IT engineers use SNMP or RESTful API protocols, but OT engineers are more familiar with OT-based protocols, such as Modbus and EtherNet/IP. Moxa's Smart I/O makes it possible for both IT and OT engineers to conveniently retrieve data from the same I/O device. The ioLogik E1200 Series speaks six different protocols, including Modbus TCP, EtherNet/IP, and Moxa AOPC for OT engineers, as well as SNMP, RESTful API, and Moxa MXIO library for IT engineers. The ioLogik E1200 retrieves I/O data and converts the data to any of these protocols at the same time, allowing you to get your applications connected easily and effortlessly.

Daisy-Chained Ethernet I/O Connection

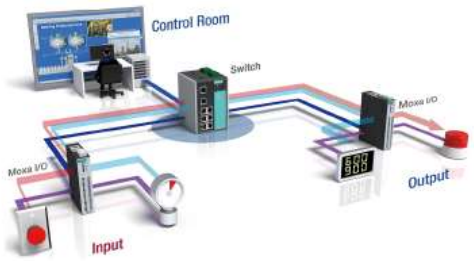
This industrial Ethernet remote I/O comes with two switched Ethernet ports to allow for the free flow of information downstream to another local Ethernet device, or upstream to a control server via expandable daisy-chained Ethernet I/O arrays. Applications such as factory automation, security and surveillance systems, and tunneled connections can make use of daisy-chained Ethernet for building multidrop I/O networks over standard Ethernet cables. Many industrial automation users are familiar with multidrop as the configuration most typically used in fieldbus solutions. The daisy-chain capabilities supported by ioLogik Ethernet remote I/O units not only increase the expandability and installation possibilities for your remote I/O applications, but also lower overall costs by reducing the need for separate Ethernet switches. Daisy-chaining devices in this way will also reduce overall labor and cabling expenses.



1. Class I Division 2 and ATEX currently do not apply to the E1213/E1213-T models.

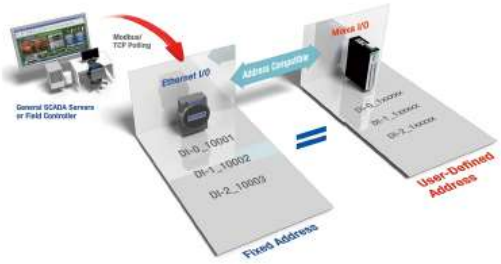
Save Time and Wiring Costs with Peer-to-Peer Communications

In remote automation applications, the control room and sensors are often far removed, making wiring over long distances a constant challenge. With peer-to-peer networking, users may now map a pair of ioLogik Series modules so that input values will be directly transferred to output channels, greatly simplifying the wiring process and reducing wiring costs.



User-Definable Modbus TCP Addressing for Painless Upgrading of Existing Systems

For Modbus devices that are controlled and detected by fixed addresses, users need to spend a vast amount of time researching and verifying initial configurations. Users need to locate each device's networking details, such as I/O channels or vendor-defined addresses, to enable the initial or start address of a SCADA system or PLC. Devices that support user-definable Modbus TCP addressing offer greater flexibility and easier setup. Instead of worrying about individual devices, users simply configure the function and address map to fit their needs.



Push Technology for Events

When used with MX-AOPC UA Server, devices can use active push communications when communicating changes in state and/or events to a SCADA system. Unlike a polling system, when using a push architecture for communications with a SCADA system, messages will only be delivered when changes in state or configured events occur, resulting in higher accuracy and lower amounts of data that need to be transferred.

Specifications

Input/Output Interface

Digital Input Channels	ioLogik E1210 Series: 16 ioLogik E1212/E1213 Series: 8 ioLogik E1214 Series: 6 ioLogik E1242 Series: 4
Digital Output Channels	ioLogik E1211 Series: 16 ioLogik E1213 Series: 4
Configurable DIO Channels (by jumper)	ioLogik E1212 Series: 8 ioLogik E1213/E1242 Series: 4
Relay Channels	ioLogik E1214 Series: 6
Analog Input Channels	ioLogik E1240 Series: 8 ioLogik E1242 Series: 4
Analog Output Channels	ioLogik E1241 Series: 4
RTD Channels	ioLogik E1260 Series: 6

Thermocouple Channels	ioLogik E1262 Series: 8
Isolation	3k VDC or 2k Vrms
Buttons	Reset button

Digital Inputs

Connector	Screw-fastened Euroblock terminal
Sensor Type	Dry contact Wet contact (NPN or PNP)
I/O Mode	DI or event counter
Dry Contact	On: short to GND Off: open
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC
Counter Frequency	250 Hz
Digital Filtering Time Interval	Software configurable
Points per COM	ioLogik E1210/E1212 Series: 8 channels ioLogik E1213 Series: 12 channels ioLogik E1214 Series: 6 channels ioLogik E1242 Series: 4 channels

Digital Outputs

Connector	Screw-fastened Euroblock terminal
I/O Type	ioLogik E1211/E1212/E1242 Series: Sink ioLogik E1213 Series: Source
I/O Mode	DO or pulse output
Current Rating	ioLogik E1211/E1212/E1242 Series: 200 mA per channel ioLogik E1213 Series: 500 mA per channel
Pulse Output Frequency	500 Hz (max.)
Over-Current Protection	ioLogik E1211/E1212/E1242 Series: 2.6 A per channel @ 25°C ioLogik E1213 Series: 1.5 A per channel @ 25°C
Over-Temperature Shutdown	175°C (typical), 150°C (min.)
Over-Voltage Protection	35 VDC

Relays

Connector	Screw-fastened Euroblock terminal
Type	Form A (N.O.) power relay
I/O Mode	Relay or pulse output
Pulse Output Frequency	0.3 Hz at rated load (max.)
Contact Current Rating	Resistive load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Contact Resistance	100 milli-ohms (max.)
Mechanical Endurance	5,000,000 operations
Electrical Endurance	100,000 operations @ 5 A resistive load

Breakdown Voltage	500 VAC
Initial Insulation Resistance	1,000 mega-ohms (min.) @ 500 VDC
Note	Ambient humidity must be non-condensing and remain between 5 and 95%. The relays may malfunction when operating in high condensation environments below 0°C.
Analog Inputs	
Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
I/O Type	Differential
Resolution	16 bits
Input Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA 4 to 20 mA (with burn-out detection)
Accuracy	ioLogik E1240/E1242: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1240-T/E1242-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ±0.5% FSR @ -40 to 75°C
Sampling Rate	ioLogik E1240: 12 samples/sec per module (shared between up to 8 channels)[2] ioLogik E1242: 12 samples/sec per module (shared between up to 4 channels)[2]
Built-in Resistor for Current Input	120 ohms
Input Impedance	10 mega-ohms (min.)
Analog Outputs	
Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
Output Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA
Resolution	12-bit
Accuracy	ioLogik E1241: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1241-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Load (Current Mode)	Internal power: 400 ohms (max.) 24 V external power: 1000 ohms (max.)
Voltage Output Short-Circuit Protection	10 mA
RTDs	
Connector	Screw-fastened Euroblock terminal
Sensor Type	PT1000 (-200 to 350°C)

2. If N channels are enabled, the sampling rate for each enabled channel = 12/N samples/sec.

	PT50, PT100, PT200, PT500 (-200 to 850°C)
Resistance Type	310, 620, 1250, and 2200 ohms
Input Connection	2- or 3-wire
Sampling Rate	ioLogik E1260: 12 samples/sec per module (shared between up to 6 channels)[3]
Resolution	0.1°C or 0.1 ohms
Accuracy	ioLogik E1260: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1260-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Input Impedance	625 kilo-ohms (min.)
Thermocouples	
Connector	Screw-fastened Euroblock terminal
Sensor Type	J, K, T, E, R, S, B, N
Millivolt Type	±19.532 mV ±39.062 mV ±78.126 mV Fault and over-voltage protection: -35 to +35 VDC (power off); -25 to +30 VDC (power on)
Resolution	16 bits
Millivolt Accuracy	ioLogik E1262: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1262-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
TC Accuracy	Types J, T, E, S, B: ±5°C Types K, R, N: ±8°C
CJC Accuracy	±0.5°C @ 25°C ±1.5°C @ -40 to 75°C
Sampling Rate	ioLogik E1262: 12 samples/sec per module (shared between up to 8 channels)[3]
Input Impedance	10 mega-ohms (min.)
Ethernet Interface	
10/100BaseT(X) Ports (RJ45 connector)	2, 1 MAC address (Ethernet bypass)
Magnetic Isolation Protection	1.5 kV (built-in)
Ethernet Software Features	
Configuration Options	Web Console (HTTP), Windows Utility (ioSearch), MCC Tool
Industrial Protocols	Modbus TCP Server (Slave), Moxa AOPC (Active Tag), MXIO Library, EtherNet/IP Adapter
Management	RESTful API, SNMPv1/v2c, SNMPv1 Trap, HTTP, DHCP Client, BOOTP, IPv4, TCP/IP, UDP

3. If N channels are enabled, the sampling rate for each enabled channel = 12/N samples/sec.

MIB	Device Settings MIB
Security	Access control list
Security Functions	
Authentication	Local database
LED Interface	
LED Indicators	Power, Ready, Port 1, Port 2
Modbus TCP	
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Mode	Server (Slave)
Max. No. of Client Connections	10
EtherNet/IP	
Mode	Adapter
Max. No. of Scanner Connections	9 (for read-only), 1 (for read/write)
Power Parameters	
Power Connector	Screw-fastened Euroblock terminal
No. of Power Inputs	1
Input Voltage	12 to 36 VDC
Power Consumption	ioLogik E1210 Series: 110 mA @ 24 VDC ioLogik E1211 Series: 200 mA @ 24 VDC ioLogik E1212 Series: 155 mA @ 24 VDC ioLogik E1213 Series: 130 mA @ 24 VDC ioLogik E1214 Series: 188 mA @ 24 VDC ioLogik E1240 Series: 121 mA @ 24 VDC ioLogik E1241 Series: 194 mA @ 24 VDC ioLogik E1242 Series: 139 mA @ 24 VDC ioLogik E1260 Series: 110 mA @ 24 VDC ioLogik E1262 Series: 118 mA @ 24 VDC
Physical Characteristics	
Housing	Plastic
Dimensions	27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)
Weight	200 g (0.44 lb)
Installation	DIN-rail mounting, Wall mounting
Wiring	I/O cable, 16 to 26 AWG Power cable, 12 to 24 AWG
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	4000 m[4]

4. Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

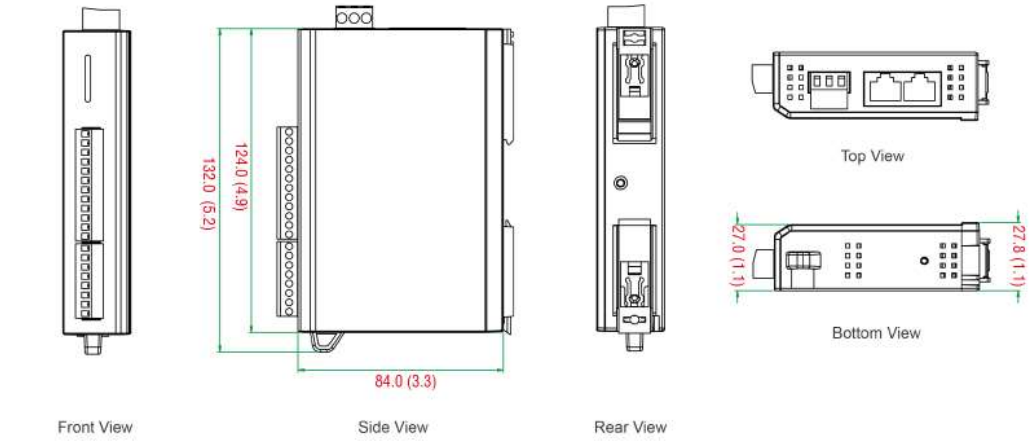
Standards and Certifications	
EMC	EN 55032/24, EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	ATEX, Class I Division 2[5]
Safety	UL 508
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	ioLogik E1210 Series: 671,345 hrs ioLogik E1211 Series: 923,027 hrs ioLogik E1212 Series: 561,930 hrs ioLogik E1213 Series: 715,256 hrs ioLogik E1214 Series: 808,744 hrs ioLogik E1240 Series: 474,053 hrs ioLogik E1241 Series: 888,656 hrs ioLogik E1242 Series: 502,210 hrs ioLogik E1260 Series: 660,260 hrs ioLogik E1262 Series: 631,418 hrs
Standards	Telcordia SR332

Warranty	
Warranty Period	ioLogik E1214: 2 years[6] ioLogik E1210/E1211/E1212/E1213/E1240/E1241/E1242/E1260/E1262: 5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x ioLogik E1200 Series remote I/O
Installation Kit	1 x terminal block, 8-pin, 3.81 mm 1 x terminal block, 12-pin, 3.81 mm 1 x terminal block, 3-pin, 5.00 mm
Documentation	1 x quick installation guide 1 x warranty card

5. ATEX and Class I Division 2 currently do not apply to the ioLogik E1213/E1213-T models.
6. Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	Input/Output Interface	Digital Output Type	Operating Temp.
ioLogik E1210	16 x DI	–	-10 to 60°C
ioLogik E1210-T	16 x DI	–	-40 to 75°C
ioLogik E1211	16 x DO	Sink	-10 to 60°C
ioLogik E1211-T	16 x DO	Sink	-40 to 75°C
ioLogik E1212	8 x DI, 8 x DIO	Sink	-10 to 60°C
ioLogik E1212-T	8 x DI, 8 x DIO	Sink	-40 to 75°C
ioLogik E1213	8 x DI, 4 x DO, 4 x DIO	Source	-10 to 60°C
ioLogik E1213-T	8 x DI, 4 x DO, 4 x DIO	Source	-40 to 75°C
ioLogik E1214	6 x DI, 6 x Relay	–	-10 to 60°C
ioLogik E1214-T	6 x DI, 6 x Relay	–	-40 to 75°C
ioLogik E1240	8 x AI	–	-10 to 60°C
ioLogik E1240-T	8 x AI	–	-40 to 75°C
ioLogik E1241	4 x AO	–	-10 to 60°C
ioLogik E1241-T	4 x AO	–	-40 to 75°C
ioLogik E1242	4 DI, 4 x DIO, 4 x AI	Sink	-10 to 60°C
ioLogik E1242-T	4 DI, 4 x DIO, 4 x AI	Sink	-40 to 75°C
ioLogik E1260	6 x RTD	–	-10 to 60°C
ioLogik E1260-T	6 x RTD	–	-40 to 75°C
ioLogik E1262	8 x TC	–	-10 to 60°C
ioLogik E1262-T	8 x TC	–	-40 to 75°C

2.7. METER SATEC PM180

Part Number: PM180-G-DIN-U-1-60HZ-E-ACDC-0-TXFX-BACDC

Technical Specifications

INPUT RATINGS

3 Voltage Inputs: V1, V2, V3
- Direct input and input via PT up to 828V AC line-to-line, up to 480V AC line-to-neutral
- Burden for 480V: <0.35 VA
- Burden for 120V: <0.03 VA
- Overvoltage withstand: 1000V AC continuous, 2500V AC for 1 sec.
- Galvanic isolation: 4kV AC / 1 min.
- Impulse dielectic withstand 6kV

Current Inputs: I1, I2, I3, I4
- Selectable 5A or 1A (upon order)
- Operating range: continuous 4xIn ANSI (20A/4A) or 2xIn IEC (10A/2A)
- Fault currents: up to 20xIn (100A @ HACS , 50A @ 5A, 10A @ 1A), max 1 sec.
- Burden for 5A: <0.15 VA;
  Burden for 1A: <0.02 VA
- Overload withstand: 4xIn RMS continuous (20A/4A)
- Max. wire size: 10 AWG/6mm²
- Terminals pitch: 13mm
- Galvanic isolation: 4kV AC / 1 min.
- Impulse dielectic withstand 6kV

AC/DC Voltage Input: V4, Vref
- Operating Range: 400V AC
- Direct input and input via PT (up to 480V AC) or Battery input
- Input Impedance: > 10MOhm
- Burden for 400V: << 0.01 VA
- Burden for 120V: << 0.01 VA
- Overvoltage Withstand: 1000V AC continuous, 2500V AC for 1 second
- Resistive Isolation, Insulation withstand: 4kV AC @ 1mn
- Wire Size: 10 AWG (up to 6 mm²)
- Terminals Pitch: 7.5 mm

Power Supplies
- Two redundant galvanically isolated power supplies
- Selection of power supplies:
  - 50-290V AC and 40-290V DC
  - 9.6-35V DC

COMMUNICATION

COM1
- Optically isolated RS-232/485
- Insulation withstand: 4kV AC @ 1 min.
- Connector: removable, captured-wire, 4 terminals
- Max. wire size: 12 AWG / 2.5 mm²
- Max. baud rate: 115,200 bps
- Protocols: MODBUS RTU, MODBUS ASCII, DNP 3.0, IEC 61850 (option), IEC 60870-5-101/104 (option)

COM2
- Optically isolated RS-422/485
- Insulation withstand: 4kV AC @ 1 min.
- Connector: removable, captured-wire, 5 terminals
- Max. wire size: 12 AWG / 2.5 mm²
- Max. baud rate: 115,200 bps
- Protocols: MODBUS RTU, MODBUS ASCII, DNP 3.0

COM3 (Display)
- Optically isolated RS-485 port for the remote display
- Insulation withstand: 2.5kV AC @ 1 min
- Connector: DB15
- Max. baud rate: 115,200 bps.
- Protocols: MODBUS RTU, MODBUS ASCII, DNP 3.0

USB Port
- Isolated USB port
- Insulation withstand: 4kV AC @ 1 min.
- Connector: Type A male
- Supported protocols: MODBUS RTU

Ethernet Port
- Transformer-isolated 10/100 Base-T port
- Insulation withstand: 4kV AC @ 1 min
- Connector: Modular RJ45
- Protocols: MODBUS TCP (Port 502), DNP 3.0/TCP (Port 20000), IEC 61850 (option)
- Number of simultaneous connections (sockets): 5

IRIG-B Port (Option)
- Optically isolated IRIG-B Port
- Time code signal: unmodulated (pulse-width coded)
- Level: unbalanced 5V
- Connector type: BNC
- Recommended cable: 51Ohm low loss: RG58A/U (Belden 8219 or equivalent), TNC connector

TX/FX Port (Option)
- Transformer-isolated 10/100Base-T port
- TX Connector: Modular RJ45
- Optical-isolated 100Base FX
- FX Connector: SC
- Supported protocols: MODBUS TCP (Port 502), DNP 3.0/TCP (Port 20000), IEC 61850 (option)
- Number of simultaneous connections (sockets): 5

ENVIRONMENTAL CONDITIONS

- Operating temperature:
  -22°F to 158°F / -30°C to 70°C
- Storage temperature:
  -40°F to 185°F / -40°C to 85°C
- Relative humidity:
  0-95% non-condensing

DIMENSIONS

- **HxWxD**
  PM180 6x8.6x8.3" / 152x220x210 mm
  RGM180 7.1x8.7x1.9" / 181x221x48 mm
  RDM180 4.5x4.5x0.8" / 114x114x20 mm
  RDM312 6.1x12.3x1" / 155x313x26 mm
- **Weight**
  PM180 2.5 kg / 5.5 lb
  RGM180 0.7 kg / 1.54 lbs

- Directive complied with EMC: 89/336/EEC as amended by 92/31/EEC and 93/68/EEC
- LVD: 72/23/EEC as amended by 93/68/EEC and 93/465/EEC
- Harmonized standards to which conformity is declared: EN55011:1991; EN50082 1:1992; EN61010-1:1993; A2/1995
- ANSI C37.90.1 Surge Withstand Capability (SWC)
- EN50081-2 Generic Emission Standard: Industrial Environment
- EN50082-2 Generic Immunity Standard: Industrial Environment
- EN55022: Class A
- IEC 61000-6-2
- IEC 61000-6-4
- IEC 60255-5
- IEC 60255-22

Accuracy

- Active Energy, IEC/AS 62053-22, class 0.2S[1]
- Reactive Energy, class 0.5S (under conditions as per IEC 62053-22:2003 @ 0 ≤ |PF| ≤ 0.9)

Power Quality

- EN50160: Power Quality in European Electricity Supply Networks
- IEEE 1159: Power Quality Recorder in US
- GOST 13109: Electric energy, Electromagnetic compatibility of technical equipment, Power quality limits in public electrical systems
- GOST 54149: 2010: Electric energy, Electromagnetic compatibility of technical equipment, Power quality limits in public electrical systems
- IEC 61000-4-7, Harmonics and inter-harmonics measurement
- IEC 61000-4-15, Flicker measurement
- IEC 61000-4-30 class A, Power quality measurement methods
- IEC 62054-21: Real time clock backup, RTC accuracy ± 2ppm @ 23°C

EMC Immunity

- IEC 61000-4-2, IEC 60255-22-2: Electrostatic discharge, 15kV/8kV – air/ contact
- IEC 61000-4-3, IEC 60255-22-3: Radiated Immunity, 10V/m and 30V/m @ 80 MHz – 1000 MHz
- IEC 61000-4-4, IEC 60255-22-4: Fast Transients burst, 4KV on current and voltage circuits and 2 KV for auxiliary circuits
- IEC 61000-4-5, IEC 60255-22-5: Surge 6KV on current, voltage circuits and power supply
- IEEE C62.41.2-2002: high voltage line surges
  - 100 kHz ring wave – 6kV @ 0.5kA
  - 1.2/50 microsecond – 8/20 microsecond Combination Wave – 6kV @ 3kA
- IEC 61000-4-6, IEC 62052-11: Conducted Radio-frequency, 10V @ 0.15 MHz – 80MHz
- IEC 61000-4-8: Magnetic Field
- IEC 61000-4-12, IEC 62052-11, IEEE C37.90.1: 2002: Oscillatory waves, CMM 2.5KV & DFM 1KV @ 100KHz and 1MHz

Emission (radiated/conducted)

EN55022, IEC 60255-22: Class A

Construction

Safety

IEC/UL 61010-1

Insulation

- IEC 62052-11: Insulation impulse 6KV/500Ω @ 1.2/50 µs
- IEC 62052-11, IEC 61010-1: AC voltage tests related to ground, 4 kV AC @ 1mn

Atmospheric Environment

- Operational ambient temperature range: –30°C to +70°C
- Long-term damp heat withstand according to IEC 68-2-3 <95%, +40°C
- Transport and storage temperature range: –40°C to +85°C

Vibration

- IEC 60255-21-1: Vibration Response, Table I, Class-2
- IEC 60255-21-1: Vibration Endurance, Table II, Class-1

Mechanical Shock

- IEC 60255-21-2: Shock, Table II, Class-1
- IEC 60255-21-2: Bump, Table III, Class-1

Seismic Vibration

IEC 60255-21-3: Bump, Table III, Class-1

Panel Display protection

IEC 60529: IP54 (NEMA type 13)

Instrument protection

IEC 60529: IP30 (NEMA type 13)

1. Only for PM180-5A and PM180-1A models (internal CT), PM180-DFR model accuracy meets class 1

Measurement Specifications

PARAMETER	FULL SCALE@ INPUT RANGE	ACCURACY			RANGE
		% READING	% FS	CONDITIONS	
Voltage V1-V3	120V x PT ratio @ 120V 400V x PT ratio @ 690V	0.05	0.01	10% to 120% FS	0 to 999,000 V
Line current I1-I4	CT			ANSI C12.20:	0 to 120,000 A
		0.05	0.01	1%-120% FS	
		0.05		120%-400% FS	
		0.05	0.01	IEC 62053-22: 1%-200% FS	
Fault current I1- I4	CT	2.0		400%-2000% FS	0 to 120,000 A
AC/DC Voltage	125V / 220V		0.3	10%-120% FS	0 to 290V DC
Active power	0.36 x PT x CT @ 120V 1.2 x PT x CT @ 690V	0.2 0.2	0.002 0.002	|PF| ≥ 0.5 and ⊕	-10,000 to +10,000 MW
Reactive power	0.36 x PT x CT @ 120V 1.2 x PT x CT @ 690V	0.3 0.3	0.002 0.002	|PF| ≤ 0.9 and ⊕	-10,000 to +10,000 Mvar
Apparent power	0.36 x PT x CT @ 120V 1.2 x PT x CT @ 690V	0.2 0.2	0.002 0.002	|PF| ≥ 0.5 and ⊕	0 to 10,000 MVA
Power factor	1.000		0.35	|PF| ≥ 0.5, I ≥ 2% FSI	-0.999 to +1.000
Frequency	50 Hz 60 Hz	0.002 0.002			40.000 Hz to 64.999 Hz 45.100 Hz to 70.000 Hz
Total Harmonic Distortion, THD V(I), $\%V_f$ ($\%I_f$)	100	1.5	0.2	THD ≥ 1% FS, V (I) ≥ 10% FSV (FSI)	0 to 999.99
Total Demand Distortion, TDD, %	100		1.5	TDD ≥1% FS, I ≥ 10% FSI	0 to 100
Active Energy Import & Export		Class 0.2 ANSI C12.20, Current class 20 Class 0.2S (IEC 62053-22)			0 to 999,999.999 MWh
Reactive Energy Import & Export		Class 0.2 under conditions as per ANSI C12.20 Class 0.2 under conditions as per IEC 62053-22			0 to 999,999.999 Mvarh
Apparent Energy		Class 0.2 under conditions as per ANSI C12.20 Class 0.2 under conditions as per IEC 62053-22			0 to 999,999.999 MVAh
Volt-Hours		Class 0.2		20%-120% FS	0 to 999,999.999 kVh
Ampere-Hours		Class 0.2		10%-200% FS	0 to 999,999.999 kAh
Symmetrical Components	Voltage FS	1		10%-120% FS	
	Current FS	1		10%-200% FS	
	Current FS	3		200%-300% FS	
Phasor angles		1 degree			

2.8. METER REMOTE DISPLAY RGM180

Technical Specifications

COMMUNICATION PORTS

COM1 IR Communication Port - PM180 Device Only	
OPTIONAL	
Optical Communication port	
Max. Baud rate	19.200 kb/s
Protocols	Modbus or DNP3.0
Isolation	2500 V_{AC} @ 1 mn
COM2 Serial Communication port - Device COM port	
BASIC	
RS-485 or RS-232 Max. Baud rate	115.2 to 480 kb/s
Isolation	4000 V_{AC} @ 1 mn
RS-485 Maximum length cable	1000m
Protocols	Modbus RTU
Connection	DB-15
ETHERNET Multiple device Communication port - RGM180-G3 only	
10/100BASE-T BASIC	
Built-in network communication port with PoE	
Wired LAN communication port with auto-negotiation	IEEE 802.3
Ethernet port Baud rate	10/100 Mb/s
Protocols	Modbus/TCP
ETH port Isolation	3 KVAC @ 1mn
ETH connector	Standard RJ-45
USB Built-in USB Communication port - Display Panel	
Basic - Device (default)	
USB communication port	Full speed Device
USB port Baud rate	12 Mb/s
Protocols	Modbus RTU/ASCII and DNP3.0
USB device port Isolation	2.5 KVAC @ 1mn
USB connector DISPLAY Panel	USB type A, vertical mount, straight

PANEL DISPLAY

Touch-Panel LCD graphic display, 1 Wh pulse led, IR port and USB Device/Host connector Type A	
Size	5.7" / 14.5mm
Resolution	320 x 240 dots
Type	TFT – color with Touch Panel
Outline dimensions (WxHxD)	0.5 x 4 x 0.6" 13 x 102 x 14.5mm
Active area (WxH)	4.5 x 3.4" 115.2 x 86.4mm
Operating temperature	-20°C to +70°C -4°F to +158°F
Storage temperature	-30°C to +80°C -22°F to +176°F
NON-VOLATILE MEMORY	
For energy and tariff registers logging, EV-PQ-DATA-WV log	Basic 256MB

POWER SUPPLY

Low DC Power Supply

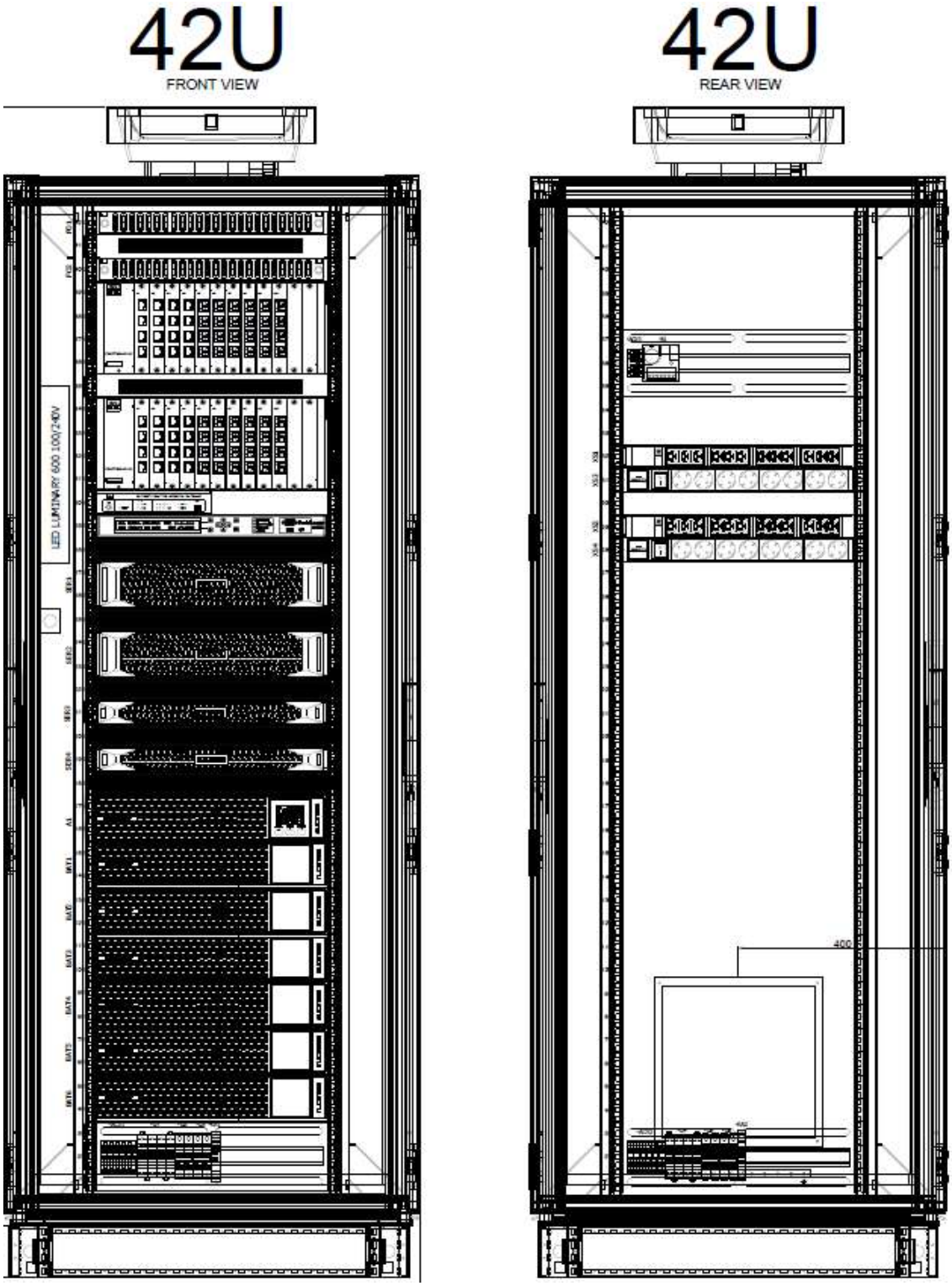
12V DC – DEVICE PS STANDARD	
Rated Input	10.8 – 13.2V DC
Dielectric withstand insulation	4000 V_{DC} @ 1mn
Power consumption	2W
24V DC – DEVICE PS OPTION (PM180 AUX. PS)	
Rated Input	9.5 – 24V DC

Dielectric withstand insulation	3000 V_{DC} @ 1mn
Main Output voltage	+12V DC ± 1%
Power consumption	2W
48V DC – PoE OPTION	
Rated Input	37 – 58V DC
Dielectric withstand insulation	1500 V_{DC} @ 1mn
Power consumption	2W
ALL MODELS	
Operating Temperature range	-40°C to + 85°C -40°F to +185°F

Detachable Terminals for wires size	3 x 2.5 up to 6 mm^2 0.1 x 0.1 up to 0.2"^{2}
Header pitch	7.5mm / 0.3"
PoE connection	RJ45
TEMPERATURE LIMIT RANGE	
Operational temperature	-30°C to +70°C -22°F to +158°F
LCD Operational temperature	-20°C to +70°C -4°F to +158°F
Storage temperature	-30°C to +80°C -22°F to +176°F

3. LOCAL SCADA (PV SCADA RACK)

3.1. RITTAL NETWORK SERVER ENCLOSURE 42U



Material:	Sheet steel Aluminium
Surface finish:	Enclosure frame: Dipcoat-primed Interior installation: Dipcoat-primed Doors and roof: Dipcoat-primed, powder-coated
Colour:	Enclosure frame and panels: RAL 7035
Protection category IP to IEC 60 529:	IP 55 only in conjunction with baying seal or screw-fastened side panels
Supply includes:	TS 8 enclosure frame with doors and roof plate Glazed aluminium door at the front, 180° hinges Sheet steel door at the rear, 180° hinges Lock front and rear: Comfort handle for profile half-cylinders and security lock 3524 E Roof plate, one-piece, solid Base tray with gland plate, multi-piece, solid Two 482.6 mm (19") mounting frames, front and rear, depth-variable Baying seal and sealing kit for gland plates (supplied loose) Connection accessories for potential equalisation with earthing point (supplied loose) 12 x 482.6 mm (19") fastener, 1 U, conductive (supplied loose) 50 multi-tooth screws, conductive (supplied loose) IPPC pallet
Note:	Depending on how and where it is sited, the door opening angle may vary for selected applications For enclosures with height and depth 2000 x 1200 mm / 2200 x 1000 mm / 2200 x 1200 mm, the matching side panels are optionally available and are supplied fitted to the enclosure
Basic material:	Aluminium
Dimensions:	Width: 800 mm Height: 2000 mm Depth: 1000 mm
Installation height for components:	42 U
Distance between levels as delivered:	545 mm
482.6 mm (19") version:	Without 482.6 mm (19") interior installation
Construction doors:	Sealed, IP 55
Packs of:	1 pc(s).
Weight/pack:	104 kg
EAN:	4028177703117
Customs tariff number:	94032080
ETIM 7.0:	EC002499
ETIM 6.0:	EC002499
eCl@ss 8.0/8.1:	27180207
eCl@ss 6.0/6.1:	27180207
Product description:	TS IT, without 482.6 mm (19") interior installation, glazed door, WHD: 800 x 2000 x 1000 mm, 42 U, IP 55

3.2. PATCH PANEL EXCEL (2 UNITS)

200-951 24 SC DUPLEX

Enbeam Panel de fibra óptica 24 puertos SC Duplex/LC Quad - Vacío
Número de referencia: 200-951

excel
without compromise.

FIBRE

25 YEAR WARRANTY excel

- Cargar solo con adaptadores sin bridas
- Multimodo y monomodo
- Opciones de densidad de puerto
- Kit de fijación y organizador incluidos
- Hasta 24 adaptadores dúplex por panel de conexión
- Números de identificación de puertos

Resumen del producto

La gama de paneles SC de Excel son alojamientos tipo bandeja con cajón deslizante, aptos para terminar o empalmar hasta 48 fibras en 1U de espacio en rack. Los paneles, de acero de alta calidad, tienen 2 mm de grosor y presentan una terminación en polvo negro que les proporciona un acabado resistente y duradero. En la parte frontal del panel de conexión se carga el número de adaptadores dúplex especificados de izquierda a derecha. Cada panel utiliza adaptadores con un código de colores: beige, agua y violeta para el multimodo, azul para el monomodo y verde para el monomodo APC. Cada adaptador dúplex aloja dos fibras terminadas. Cada panel incluye un juego de brazos de sujeción y un kit de organización de cables con pasamuros, bridas y un empalme de derivación de 24 tomas.

Tenga en cuenta que los paneles SC pueden montarse de forma que combinen adaptadores, pigtails y casetes de empalme: llame para solicitar más información

Detalles del producto

Elemento	Valor
Apto para varios acoplamientos/adaptadores	96
Compatible para varias inserciones de módulo	24
Tipo de conector externo	SC dúplex
Tipo de conector interior	SC dúplex
Color	Negro
Número RAL	9005
Método de montaje	Montaje de 19 pulgadas

Enbeam Panel de fibra óptica 24 puertos SC Duplex/LC Quad - Vacío

Número de referencia: 200-951

excel without compromise.

Número de unidades de altura	1
Altura	43,5 mm
Anchura	483 mm
Profundidad	219,5 mm

Especificaciones suplementarias

Característica	Valor
Temperatura en funcionamiento	-40 a +80 °C
Grado IP	IP20
Entrada del cable 20 mm	2
Entrada del cable 25 mm	2
Materiales	Acero laminado en frío
Grosor de los materiales	2 mm
Revestimiento de los materiales	Revestimiento en polvo
Adaptador que cumple RoHS	Sí
Diseñado según	ISO/IEC 11801, IEC60304, IEC61754, TIA/EIA 568.D

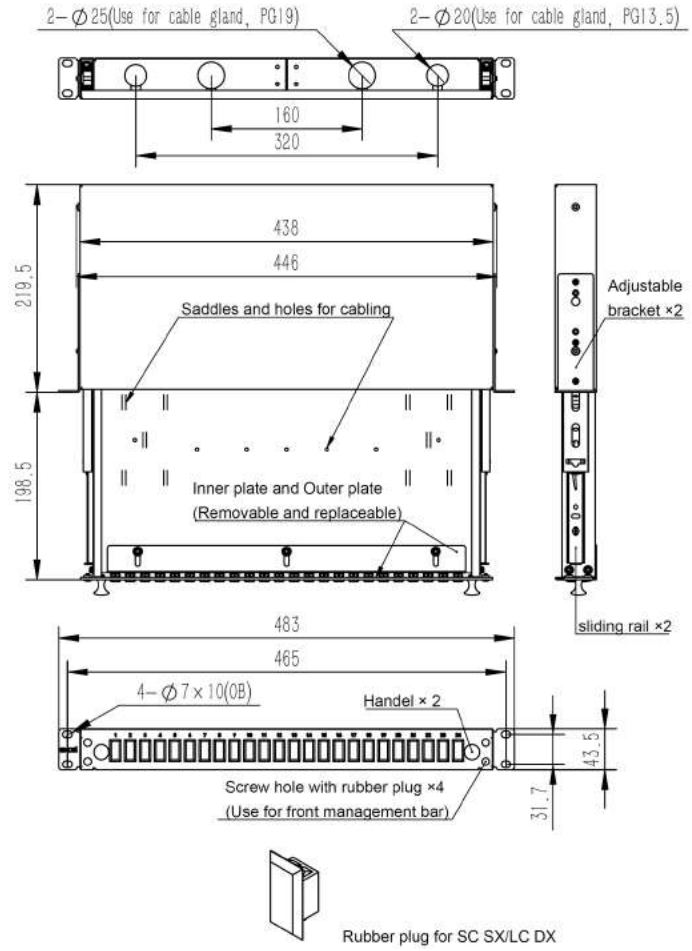
Accesorios incluidos

Accesorios	Cantidad
Prensaestopas para cables (PG 13.5)	1
Prensaestopas para cables (PG 19)	1
Brida de nailon	7
Brida ajustable	4
Soporte de empalme de 24 posiciones	2
Cierre de montaje	4
Tuercas de jaula y tornillos	1 juego

Enbeam Panel de fibra óptica 24 puertos SC Duplex/LC Quad - Vacío

Número de referencia: 200-951

Dibujos de productos



Información sobre el número de referencia

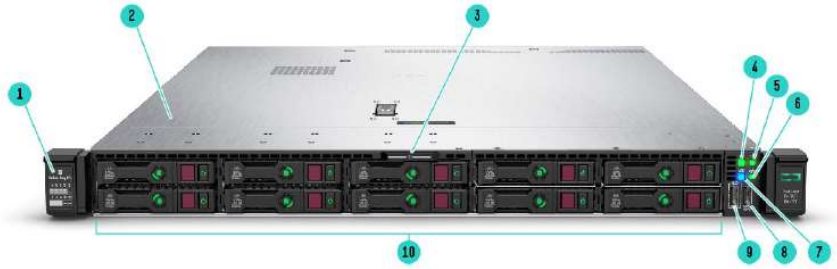
Número de referencia	Descripción
200-951	Enbeam Panel de fibra óptica 24 puertos SC Duplex/LC Quad - Vacío

3.3. SERVER HPE PROLIANT DL360 GEN10 SERVER P40637-B21 (2 UNITS)

HPE ProLiant DL360 Gen10 Server

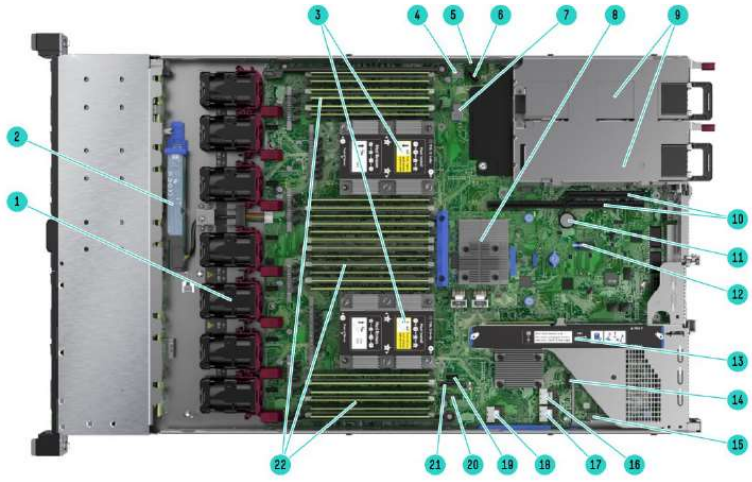
Does your data center need a secure, performance driven dense server that you can confidently deploy for virtualization, database, or high-performance computing? The HPE ProLiant DL360 Gen10 server delivers security, agility and flexibility without compromise.

The HPE ProLiant DL360 Gen10 Server supports the Intel® Xeon® Scalable Processor Family with up to 28 cores, plus 2933 MT/s HPE DDR4 SmartMemory supporting up to 3.0 TB max. With the added performance that HPE Persistent Memory and 10 NVMe bring, the HPE ProLiant DL360 Gen10 means business. Deploy this dense platform for diverse workloads in space constrained environments and maintain it with ease by automating the most essential server lifecycle management tasks with HPE OneView and HPE iLO 5.



Premium 10SFF NVMe Front View

1. Drive support label
2. Quick removal access panel
3. Serial no. label pull tab
4. Power On/Standby button and system power LED
5. Health LED
6. NIC status LED
7. UID button/LED
8. USB 3.0 port
9. iLO Service Port
10. Max up to 10 NVMe drives (PCIe direct attached) or 8 SAS/SATA/NVMe + 2 NVMe



Internal View - Standard for all DL360 Gen10

1. For 8 SFF or 4 LFF - Standard single rotor hot plug fans[1]
   1 CPU – 5 standard fans
   2 CPUs – 7 standard fans
   Option: High Performance fans
2. Option: HPE Smart Hybrid Capacitor or HPE Smart Storage Battery
3. Up to 2 processors (shown with standard heat sinks)
4. MicroSD card slot
5. Option: Chassis Intrusion Detection
6. Hard Drive backplane power connector
7. Dual internal USB 3.0 connector
8. Smart Array Controller (Type -a shown)
9. Up to 2 Power Supplies for redundant power
10. Secondary (CPU2) PCIe 3.0 riser
    Option: Full Height x16 (Lose slot 2 on Primary riser)[10]
11. System Battery
12. Optional: TPM 2.0
13. Primary (CPU1) PCIe 3.0 riser (Standard: GPU power connector + 1x 16 and 1x 8)
    Option: 2 SATA M.2 + 2x 16
    Option: (8 SFF only): 2x 4 NVMe + 1x 16 and 1x 8
14. Option: Front Display port / USB 2.0
15. FlexibleLOM (supports various NICs up to 25GbE)
16. x4 SATA port 1
17. x4 SATA port 2
18. x2 SATA port 3
19. x1 SATA port 4
20. Front Power USB 3.0 connector
21. Optical/SATA port 5
22. DDR4 DIMM slots (Fully populated 24 DIMMs shown)

Especificaciones técnicas	**Servidor HPE ProLiant DL360 Gen10**
Procesador	Intel
Familia de procesador	Intel® Xeon® escalable serie 8100/8200 - Intel® Xeon® escalable serie 3100/3200
Número de procesadores	2, máximo según modelo
Núcleo de procesador disponible	De 4 a 28 núcleos, según el modelo
Caché de procesador	De 8,25 a 38,50 MB L3, según el procesador
Velocidad del procesador	3,9 GHz, máximo según el procesador
Ranuras de expansión	3, para obtener una descripción detallada, consulte las QuickSpecs
Memoria, máxima	3,0 TB con DDR4 de 128 GB 6,0 TB con kit de memoria persistente HPE 2666 de 512 GB
Memoria, estándar	LRDIMM de 3,0 TB (24 x 128 GB) memoria persistente HPE de 6,0 TB (12 x 512 GB)
Ranuras de memoria	24 ranuras DIMM
Tipo de memoria	HPE DDR4 SmartMemory y memoria persistente Intel® Optane™ serie 100 para HPE, según el modelo
Características de los ventiladores del sistema	Redundancia con conexión en caliente de serie
Controlador de red	Adaptador Ethernet 4 x 1 GbE integrado (determinados modelos) o HPE FlexibleLOM y tarjetas PCIe verticales opcionales, según el modelo
Controlador de almacenamiento	HPE Smart Array S100i, controlador HPE Essential o RAID de rendimiento, según el modelo
Dimensiones mínimas (alto x ancho x fondo)	Chasis de factor formato reducido: 4,29 x 43,46 x 70,7 cm, Chasis de factor formato grande: 4,29 x 43,46 x 74,98 cm
Peso	13,04 kg mínimo, 16,78 kg máximo
Administración de infraestructura	HPE iLO Standard con aprovisionamiento inteligente (integrado), HPE OneView Standard (requiere descarga) Opcional: HPE iLO Advanced y HPE OneView Advanced (requieren licencias)
Garantía	3/3/3 - La garantía del servidor incluye tres años de garantía en piezas, tres años de mano de obra y tres años de cobertura de soporte a domicilio. Información adicional sobre en la garantía limitada en todo el mundo y la asistencia técnica disponible en: http://h20564.www2.hpe.com/hpsc/wc/public/home. Puede comprar localmente cobertura de servicio y asistencia de HPE adicionales para su producto. Para obtener información acerca de la disponibilidad de las actualizaciones del servicio y su coste, visite el sitio Web de HPE en http://www.hpe.com/support
Tipo de unidad	4 SAS/SATA LFF, 8 SAS/SATA SFF + 2 NVMe, 10 SAS/SATA SFF, 10 NVMe SFF, 1 unidad trasera opcional SFF o 1 UFF doble según el modelo
Número de procesador	1 o 2
Seguridad física	Kit de bisel con cierre opcional, kit de detección de intrusión y HPE TPM 2.0
Factor de forma	1 U
Capacidad de NVDIMM	16 GB
Rango de NVDIMM	Rango único
Tipo de NVDIMM	HPE NVDIMM-N *Disponible solo en procesadores escalables Intel® Xeon® de 1.ª generación

3.4. SALICRU UPS 10000 VA

The UPS will be a custom-made solution.
The main module is the SLC TWIN RT2 (with SNMP Card), the autonomy provided is 240min approximately.

The UPS is pending to be size.

Range

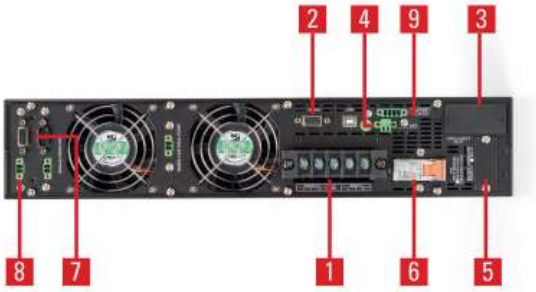
MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
KIT SLC-4000-TWIN RT2	698RQ000002	4000 / 4000	Terminals + PDU	688 × 438 × 176	63
KIT SLC-5000-TWIN RT2	698RQ000003	5000 / 5000	Terminals + PDU	688 × 438 × 176	63
KIT SLC-6000-TWIN RT2	698RQ000004	6000 / 6000	Terminals + PDU	688 × 438 × 176	63
KIT SLC-8000-TWIN RT2	698RQ000005	8000 / 8000	Terminals + PDU	688 × 438 × 176	74
KIT SLC-10000-TWIN RT2	698RQ000006	10000 / 10000	Terminals + PDU	688 × 438 × 176	74

Dimensions and weights for devices with standard backup

Dimensions

SLC 4000÷10000 TWIN RT2

Connections



1. Input/output terminals.
2. RS-232 interface.
3. Smart slot for SNMP/potential-free contacts/ MODBUS.
4. Emergency stop (EPO).
5. Connection for battery module (only in models with extra charger).
6. Input circuit breaker.
7. Parallel port.
8. Current distribution port.
9. Digital input/output.

Technical specifications

MODEL		SLC TWIN RT2 4-10 kVA
TECHNOLOGY		On-line double-conversion
FORMAT		Convertible tower/rack
INPUT	Rated voltage	208 / 220 / 230 / 240 V [1]
	Voltage range	110 ÷ 300 V up to 50% load
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	±4 Hz
	Total harmonic distortion (THDi)	≤4%
OUTPUT	Power factor	1 [2]
	Rated voltage	208 / 220 / 230 / 240 V[1]
	Voltage accuracy (battery mode)	±1%
	Total harmonic distortion (THDi) Linerar load	<1%
	Total harmonic distortion (THDi) Non-linear load	<4%
	Synchronised frequency	±4 Hz
	Free running frequency	±0.1 Hz
	On-line performance	≥93 ÷ 94%
	Eco-mode performance	≥99%
	Admissible overloads	< 110% for 10 min / < 130% for 1 min / > 130 % for 1 s
	Programmable sockets	Not applicable
	Parallel	Yes, up to 3 units[3]
STATIC BYPASS	Voltage (V)	208 / 220 / 230 / 240 V [1]
	Frequency range	50/60 Hz ±4 Hz
BATTERY	Protection	Against power surges, undervoltages and alternating current components
	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	I/U (constant current/constant voltage)
	Recharge time	7 ÷ 9 hours to 90%

CHARGER	Temperature voltage compensation	Yes
COMMUNICATION	Ports	USB / RS-232 / relay
	Intelligent slot	Smart slot for SNMP / potential-free contacts / MODBUS
	Monitoring software	Yes, for Windows, Linux and Mac
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
OPERATING MODES	Frequency converter (CVCF)	Yes[4]
GENERAL	Operating temperature	0° C ÷ +40° C
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	2,400 masl (power degradation up to 5,000 m)
	Acoustic noise at 1 metre	<58-60 dB
STANDARDS	Safety	EN 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2(C3)
	Operation	EN 62040-3
	Quality and environmental management	ISO 9001 and ISO 14001

Information subject to change without notice.

(1) 90% power reduction for 208 V devices
(2) Except for devices with extended backup
(3) 90% power reduction
(4) 60% power reduction

3.5. LANTIME M300/GPS (NTP TIME SERVER WITH INTEGRATED GPS RADIO CLOCK)

Characteristics

Type of receiver	6 channel GPS C/A-code receiver
Type of antenna	Remote powered [3]GPS antenna/converter unit, up to 300m distance to antenna with RG58 and up to 700m distance with RG213 cable
Display	LC-display, 2 x 40 characters, with backlight
Control elements	Eight push buttons to set up basic network parameters and to change receiver settings
Status info	Four bicolor LEDs showing status of: - reference time - time service - network - alarm
Frequency outputs	10 MHz via female BNC connector, TTL into 50 Ohm Accuracy depends on oscillator (standard: TCXO), look at [4]oscillator options
Pulse outputs	Pulse Per Second (PPS), TTL level, pulse width: 200ms
Accuracy of pulse outputs	Depends on oscillator option: Note: TCXO only available with M300
Interface	Two independent serial RS232-interfaces, menu configurable
Data format of interfaces	Baud rates: 300, 600, 1200, 2400, 4800, 9600, 19200 Baud Data formats: 7N2, 7E1, 7E2, 7O1, 8E1, 8N1, 8O1 Time strings: [5]Meinberg Standard-Telegram , SAT, Uni Erlangen (NTP), SPA, RACAL, Sysplex, NMEA0183 (RMC, GGA, ZDA), Meinberg GPS, COMPUTIME, ION oder [6] Capture-Telegramm
Alarm output	Synchronous state of the module, relay output (changeover contact)
Network Interface	Standard: 2 x 10/100 MBit with RJ45 connector Available Options: * 2 x additional 10/100 MBit with RJ45 * 1 x 10/100 MBit and 1 x 10/100/1000 MBit (1GE) with RJ45 or1 x 10/100 MBit and 3 x 10/100/1000 MBit (3GE) with RJ45 jack
Power supply Standard:	100-240 VAC available DC variants: 100-240 VDC, 12VDC, 24VDC and 48VDC
Power consumption	20W
Universal Serial Bus (USB) Ports	1x USB Port in front panel: - install firmware upgrades - backup and restore configuration files - copy security keys - lock/unlock front keys

Supported Time String	Meinberg Standard Timestring, Uni Erlangen Timestring, SYSPLEX Timer,NMEA,Computime, ABB-SPA, SAT, Arbiter
Single-Board-Computer	i386 compatible 500Mhz CPU, 128 MB RAM
Operating System of the SBC	Linux with nano kernel (incl. PPSkit)
Network protocols Layer 4 (transport layer)	OSI TCP, UDP
Network protocols OSI Layer 7 (application layer)	TELNET, FTP, SSH (incl. SFTP, SCP), HTTP, HTTPS, SYSLOG, SNMP
Internet Protocol (IP)	IP v4, IP v6
Network Autoconfiguration Support	IPv4: Dynamic Host Configuration Protocol - DHCP (RFC 2131) IPv6: Autoconfiguration Networking - AUTOCONF
Network Time Protocol	NTP v2 (RFC 1119), NTP v3 (RFC 1305), NTP v4 (no RFC) SNTP v3 (RFC 1769), SNTP v4 (RFC 2030) MD5 Authentication and Autokey Key Management
Time Protocol (TIME)	Time Protocol (RFC 868)
Daytime Protocol (DAYTIME)	
IEC 61850	Synchronization of IEC 61850 compliant devices by using SNTP
Hypertext Transfer Protocol	HTTP/HTTPS (RC 2616)
Secure Shell (SSH)	SSH v1.3, SSH v1.5, SSH v2 (OpenSSH)
Telnet	Telnet (RFC 854-RFC 861)
Simple Network Management Protocol (SNMP)	SNMPv1 (RFC 1157), SNMPv2c (RFC 1901-1908), SNMP v3 (RFC 3418)
Ambient temperature	0 ... 50°C / 32 ... 122°F
Humidity Max.	85%
Scope of supply	Included in delivery is our [3]GPS antenna incl. converter unit, 20m GPS antenna cable (RG58) and product documentation.
Technical Support	Meinberg offers free lifetime technical support via telephone or e-mail.
Warranty	Three-Year Warranty
Firmware Updates	Firmware is field-upgradeable, updates can be installed directly at the unit or via a remote network connection. Software updates are provided free of charge, for the lifetime of your Meinberg product.
RoHS-Status of the product	This product is fully RoHS compliant

3.6. SWITCH MOXA IKS-6728A-4GTXSFP-HV-HV-T (2 UNITS)

Introduction

Process automation and transportation automation applications combine data, voice, and video, and consequently require high performance and high reliability. The ICS-G7748A Series full Gigabit backbone switches' modular design makes network planning easy, and allows greater flexibility by letting you install up to 48 Gigabit Ethernet ports.

The ICS-G7748A's full Gigabit capability increases bandwidth to provide high performance and the ability to quickly transfer large amounts of video, voice, and data across a network. The fanless switches support the Turbo Ring, Turbo Chain, and RSTP/STP redundancy technologies, and come with an isolated redundant power supply to increase system reliability and the availability of your network backbone.

Additional Features and Benefits

- Advanced PoE management functions: PoE output setting, PD failure check, PoE scheduling, and PoE diagnostics (with IM-G7000A-4PoE module)
- Command line interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP and Modbus TCP protocols for device management and monitoring
- Compatible with PROFINET protocol for transparent data transmission
- Port mirroring for online debugging
- Automatic warning by exception through email and relay output
- Redundant, dual AC power inputs
- Digital inputs for integrating sensors and alarms with IP networks
- IGMP snooping and GMRP for filtering multicast traffic
- IEEE 802.1Q VLAN and GVRP protocol to ease network planning
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- Access control lists (ACL) increase the flexibility and security of network management
- SNMPv1/v2c/v3 for different levels of network management
- RMON for proactive and efficient network monitoring
- Bandwidth management to prevent unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address

Specifications

Input/Output Interface

Alarm Contact Channels	Relay output with current carrying capacity of 2 A @ 30 VDC
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA

Ethernet Interface

Slot Combination	12 slots for 4-port interface modules (10/100/1000BaseT(X), or PoE+ 10/100/1000BaseT (X), or 100/1000BaseSFP slots). See the IM-G7000A datasheet for Gigabit Ethernet module product information.
Standards	IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for authentication IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3ad for Port Trunk with LACP IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3af/at for PoE/PoE+ output

Ethernet Software Features	
Management	Back Pressure Flow Control BOOTP DDM DHCP Option 66/67/82 DHCP Server/Client Flow control IPv4/IPv6 LLDP Port Mirror RARP RMON SCP SMTP SNMP Inform SNMPv1/v2c/v3 Syslog Telnet TFTP
Filter	802.1Q BPDU Filter BPDU Guard GMRP GVRP IGMP v1/v2/v3
Redundancy Protocols	Link Aggregation MRP MSTP RSTP STP Turbo Chain Turbo Ring v1/v2 V-ON
Security	Access control list Broadcast storm protection HTTPS/SSL MAB authentication NTP authentication Port Lock RADIUS SSH TACACS+
Time Management	NTP Server/Client
	SNTP
Industrial Protocols	EtherNet/IP Modbus TCP PROFINET
MIB	Ethernet-like MIB MIB-II P-BRIDGE MIB Q-BRIDGE MIB RMON MIB Groups 1, 2, 3, 9 RSTP MIB
Switch Properties	
IGMP Groups	2048
Jumbo Frame Size	9.6 KB
MAC Table Size	16 K
Max. No. of VLANs	64
Packet Buffer Size	12 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094
USB Interface	
Storage Port	USB Type A
Serial Interface	
Console Port	USB-serial console (Type B connector)

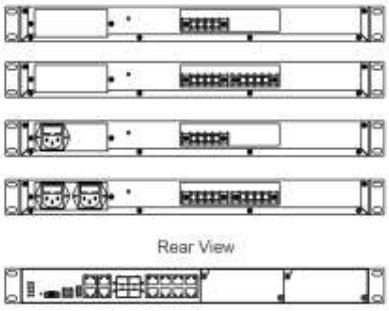
Power Parameters	
Input Voltage	IKS-6728A-4GTXSFP-24-T: 24 VDC IKS-6728A-4GTXSFP-24-24-T: 24 VDC (redundant dual inputs) IKS-6728A-4GTXSFP-48-T: 48 VDC IKS-6728A-4GTXSFP-48-48-T: 48 VDC (redundant dual inputs) IKS-6728A-4GTXSFP-HV-T: 110/220 VAC IKS-6728A-4GTXSFP-HV-HV-T: 110/220 VAC (redundant dual inputs) IKS-6728A-8PoE-4GTXSFP-48-T: 48 VDC IKS-6728A-8PoE-4GTXSFP-48-48-T: 48 VDC (redundant dual inputs) IKS-6728A-8PoE-4GTXSFP-HV-T: 110/220 VAC IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 110/220 VAC (redundant dual inputs)
Operating Voltage	IKS-6728A-4GTXSFP-HV-T: 85 to 264 VAC IKS-6728A-4GTXSFP-HV-HV-T: 85 to 264 VAC IKS-6728A-4GTXSFP-24-T: 18 to 36 VDC IKS-6728A-4GTXSFP-24-24-T: 18 to 36 VDC IKS-6728A-4GTXSFP-48-T: 36 to 72 VDC IKS-6728A-4GTXSFP-48-48-T: 36 to 72 VDC IKS-6728A-8PoE-4GTXSFP-48-T: 36 to 72 VDC IKS-6728A-8PoE-4GTXSFP-48-48-T: 36 to 72 VDC IKS-6728A-8PoE-4GTXSFP-HV-T: 85 to 264 VAC IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 85 to 264 VAC
Input Current	1.1/0.6 A @ 24/48 VDC 0.46/0.31 A @ 110/220 VAC Note: These are the input current ratings for the device with the maximum number of modules installed.
Power Consumption (Max.)	26.4/28.8 W @ 24/48 VDC 29.28/31.92 W @ 110/220 VAC Note: These are the power consumption ratings for the device with the maximum number of modules installed.

Total PoE Power Budget	IKS-6728A-PoE series: Maximum 720 W @ 48 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Physical Characteristics	
IP Rating	IP30
Dimensions	440 x 44 x 280 mm (17.32 x 1.37 x 11.02 in)
Weight	4100 g (9.05 lb)
Installation	Rack mounting
Environmental Limits	
Operating Temperature	-40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
Freefall	IEC 60068-2-32
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Railway	EN 50121-4
Maritime	IKS-6728A Series non-PoE models: ABS, CCS, DNV, LR, NK
Safety	EN 60950-1 UL 60950-1
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

Package Contents	
Device	1 x IKS-6728A Series switch
Cable	1 x USB type A male to USB type B male
Installation Kit	2 x rack-mounting ear 8 x cap, plastic, for SFP slot
Power Supply	IKS-6728A-4GTXSFP-HV-T: 1 x power cord, EU type IKS-6728A-4GTXSFP-HV-HV-T: 2 x power cord, EU type IKS-6728A-8PoE-4GTXSFP-HV-T: 1 x power cord, EU type IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 2 x power cord, EU type IKS-6728A-4GTXSFP-HV-T: 1 x power cord, US type IKS-6728A-4GTXSFP-HV-HV-T: 2 x power cord, US type IKS-6728A-8PoE-4GTXSFP-HV-T: 1 x power cord, US type IKS-6728A-8PoE-4GTXSFP-HV-HV-T: 2 x power cord, US type
Documentation	1 x quick installation guide 1 x warranty card
Note	1. If you want to turn on PoE, please add a 48 V external power supply. 2. 48 V external power supply, SFP modules and/or modules from the IM-6700A Module Series need to be purchased separately for use with this product.

Dimensions

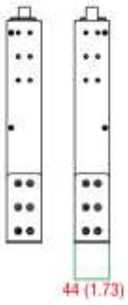
Unit: mm (inch)



Rear View

Front View

Top View



Side View

Ordering Information

Model Name	Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP)	100BaseSFP Slots	10/100BaseT(X) Ports RJ45 Connector	100BaseFX Ports	Operating Temp.	Input Voltage	Redundant Dual Input	PoE Support
IKS-6728A-4GTXSFP-HV-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	110/220 VAC power supply	-	-
IKS-6728A-4GTXSFP-HV-HV-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	110/220 VAC power supply	✓	-
IKS-6728A-4GTXSFP-24-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	24 VDC power supply	-	-
IKS-6728A-4GTXSFP-24-24-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	24 VDC power supply	✓	-
IKS-6728A-4GTXSFP-48-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	48 VDC power supply	-	-
IKS-6728A-4GTXSFP-48-48-T	4	Up to 20	Up to 24	Up to 12	-40 to 75°C	48 VDC power supply	✓	-

3.7. WORKSTATION - HP PRODESK 400 G7 MICROTOWER

HP ProDesk 400 G7 Small Form Factor PC Specifications Table

Available Operating Systems	Windows 10 Pro 64 – HP recommends Windows 10 Pro for business[7] Windows 10 Pro 64 (National Academic only)[7,8] Windows 10 Home 64[7] Windows 10 Home Single Language 64[7] FreeDOS
Processor family[14]	10th Generation Intel® Core™ i3 processor; 10th Generation Intel® Core™ i5 processor; 10th Generation Intel® Core™ i7 processor; Intel® Celeron® processor; Intel® Pentium® processor
Available Processors[17,18,20,21,32,33]	Intel® Core™ i7-10700 with Intel® UHD Graphics 630 (2.9 GHz base frequency, up to 4.7 GHz with Intel® Turbo Boost Technology, 16 MB L3 cache, 8 cores) Intel® Core™ i5-10600 with Intel® UHD Graphics 630 (3.3 GHz base frequency, up to 4.8 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 6 cores) Intel® Core™ i5-10500 with Intel® UHD Graphics 630 (3.1 GHz base frequency, up to 4.5 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 6 cores) Intel® Core™ i3-10300 with Intel® UHD Graphics 630 (3.7 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) Intel® Core™ i3-10100 with Intel® UHD Graphics 630 (3.6 GHz base frequency, up to 4.3 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 4 cores) Intel® Pentium® Gold G6600 with Intel® UHD Graphics 630 (4.1 GHz base frequency, 4 MB L3 cache, 2 cores) Intel® Celeron® G5900 with Intel® UHD Graphics 610 (3.4 GHz base frequency, 2 MB L3 cache, 2 cores) Intel® Pentium® Gold G6400 with Intel® UHD Graphics 630 (4.0 GHz base frequency, 4 MB L3 cache, 2 cores)
Chipset[37]	Intel® Q470
Form factor	Small form factor
Maximum memory	64 GB DDR4-2666 SDRAM; 64 GB DDR4-3200 SDRAM[2,3] Transfer rates up to 2666 MT/s for Celeron®, Pentium®, Intel® Core™ i3, and Intel® Core™ i5 processors. Transfer rates up to 2933 MT/s for Intel® Core™ i7 processors
Memory slots	2 DIMM
Internal storage	500 GB up to 2 TB SATA HDD[5,7,9] 500 GB SATA SED Opal 2 HDD[5,7,9] 500 GB SATA SED FIPS HDD[5,7,9] 128 GB up to 1 TB PCIe® NVMe™ TLC M.2 SSD[5,7,9] 256 GB up to 512 GB PCIe® NVMe™ SED Opal 2 TLC M.2 SSD[5,7,9] 256 GB up to 512 GB Intel® Optane™ Memory H10 with Solid State Storage[5,7,9,10]
Storage acceleration[10]	16 GB NVMe™ Intel® Optane™ Memory for storage acceleration
Optical drive[6]	HP 9.5 mm Slim Blu-ray writer; HP 9.5 mm Slim DVD-ROM; HP 9.5 mm Slim DVD-writer
Available Graphics	Integrated: Intel® UHD Graphics 610; Intel® UHD Graphics 630 Discrete: AMD Radeon™ RX 550X Graphics (4 GB GDDR5 dedicated); AMD Radeon™ RX 480 Graphics (8 GB GDDR5 dedicated)
Audio	Realtek ALC3205 codec; 2 W internal speaker (internal audio jack, combo microphone/headphone jack
Expansion slots	1 M.2 2230; 1 M.2 2280; 1 PCIe 3 x1; 1 PCIe 3 x16; 1 SD 4.0 media card reader[11] (1 M.2 2230 slot for WLAN and 1 M.2 2280 slot for storage)
Ports and Connectors	Front: 1 headphone/microphone combo; 2 SuperSpeed USB Type-A 10Gbps signaling rate; 2 USB Type-A 480Mbps signaling rate Rear: 1 audio-out; 1 power connector; 1 RJ-45; 1 HDMI 1.4; 3 SuperSpeed USB Type-A 5Gbps signaling rate; 1 DisplayPort™ 1.4; 2 USB Type-A 480Mbps signaling rate
Optional Ports	Add-on card – choose one of the following options: 4x Serial, serial and PS/2 ports combination or parallel; Flex IO port – choose one of the following options: DisplayPort™ 1.4, VGA, HDMI 2.0, serial; SuperSpeed USB Type-C® 10Gbps signaling rate (alternate mode DisplayPort™); Dual SuperSpeed USB Type-A 5Gbps signaling rate[22]
Available Keyboards[15]	HP PS/2 Business Slim Keyboard; HP USB Wired Keyboard; HP Wireless Business Slim Keyboard and Mouse Combo; USB and PS/2 washable keyboard; HP Wired Desktop 320K Keyboard; HP USB Business Slim Smart Card (CCID) Keyboard
Available Pointing Devices[15]	HP USB 1000 dpi Laser Mouse; HP USB and PS/2 washable Mouse; HP PS/2 Mouse; HP Wired Desktop 320M Mouse
LAN[12] Network Interface[12]	Intel® I210-T1 PCIe® GbE
WLAN[13,31]	Intel® Wi-Fi 6 AX201 (2x2) Wi-Fi® and Bluetooth® M.2 combo card, non-vPro™
Drive Bays	One 3.5" HDD convertible to one 2.5" HDD with caddy[7,9]
Environmental	Operating temperature: 5 to 35°C. Operating humidity: 5 to 90% RH
Software[16]	HP Noise Cancellation Software; HP Support Assistant; Buy Office (sold separately); HP JumpStart; HP Desktop Support Utilities
Security management[23,27,28,29,34,35]	Power-on password (via BIOS); SATA non-disablement (via BIOS); Setup password (via BIOS); Support for chassis padlocks and cable lock cables; USB enable/disable (via BIOS); Serial enable/disable (via BIOS); HP Secure Erase; HP Sure Click; HP Sure Sense; HP BIOSphere Gen6; HP DriveLock and Automatic DriveLock; Trusted Platform Module TPM 2.0 Embedded Security chip shipped with Windows 10; (Common Criteria EAL4+ certified); HP Client Security Manager Gen6
Management features	HP BIOS Config Utility (download); HP Client Catalog (download); HP Driver Packs (download); HP System Software Manager (download); HP Cloud Recovery; HP Management Integration Kit for Microsoft System Center Configuration Management Gen 4; HP Image Assistant Gen 5[18,19,36]
Power	180 W internal power supply; up to 90% efficiency; active PFC; 210 W internal power supply; up to 92% efficiency; active PFC
Dimensions	10.8 x 9.7 x 11.6 in; 27 x 24.6 x 30.3 cm
Weight	8.6 lb; 3.9 kg (weight will vary by configuration)
Energy efficiency compliance[24]	ENERGY STAR® certified; EPEAT® 2018 registered where applicable
Warranty	1 year (1-1-1) limited warranty or 3 years (3-3-3) limited warranty delivers one year or three years of on-site, next business day service for parts and labor and includes free telephone support 24/7. One-year and three-year on-site and labor are not available in all countries. Service offers terms up to 5 years by choosing a Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: www.hp.com/go/cpc

3.8. MONITOR BENQ23.8IN IPS 1920X1080 1

3.9. SEL RTAC 3530

Panel Features

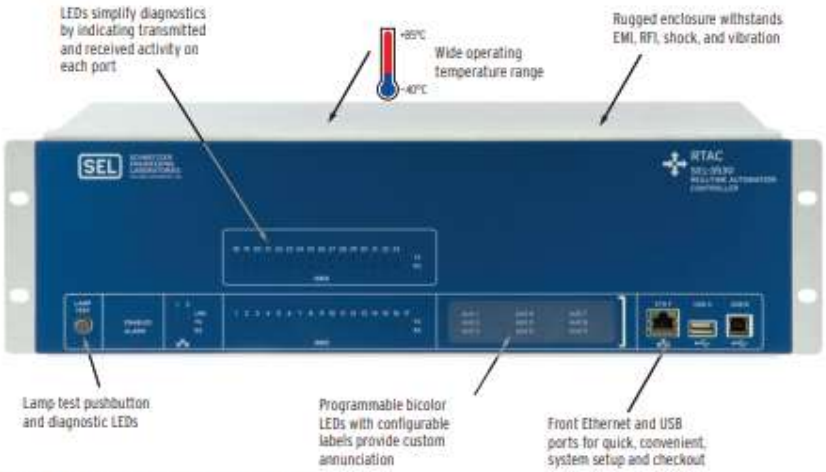


Figure 3 Front-Panel View (3U Chassis Only)

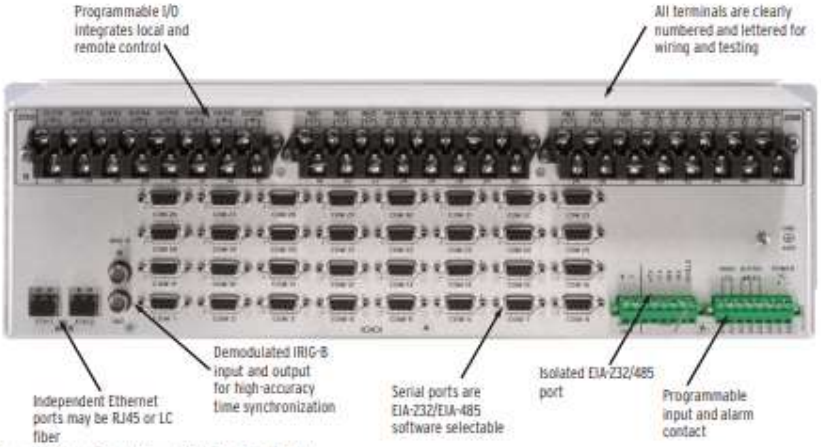


Figure 4 Rear-Panel View (3U Chassis Only)

Specifications

Compliance

Designed and manufactured under an ISO 9001 certified quality management system

UL Listed to U.S. and Canadian safety standards (File E220228; NRAQ, NRAQ7)

CE Mark

UKCA Mark

General

Operating System

SEL Linux Yellowstone running Linux kernel 3.x with real-time preemption patches

Operating Temperature Range

–40° to +85°C (–40° to +185°F)
Note: Not applicable to UL applications.

Operating Environment

Pollution Degree:	2
Overvoltage Category:	II
Insulation Class:	1
Relative Humidity:	5%–95%, noncondensing
Maximum Altitude:	2000 m

Weight (Maximum)

5.44 kg (12 lb)

Processing and Memory

Processor Speed:	533 MHz
Memory:	1024 MB DDR2 ECC RAM
Storage:	2 GB

Security Features

Account Management:	User Accounts User Roles LDAP Central Authentication RADIUS Central Authentication Strong Passwords Inactive Account Logouts
Intrusion Detection:	Access/Audit Logs Alarm LED Alarm Contact
Encrypted Communications:	SSL/TLS, SSH HTTPS

Automation Features

Protocols

Client

DNP3 Serial, DNP3 LAN/WAN, Modbus RTU, Modbus TCP, SEL ASCII, SEL Fast Messaging, LG 8979, IEEE C37.118, IEC 61850 MMS, CP2179, IEC 60870-5-101/104, SNMP, SES-92, CDC Type II, Courier, IEC 60870-5-103, EtherNet/IP Explicit Message Client

Server

DNP3 Serial, DNP3 LAN/WAN, Modbus RTU, Modbus TCP, SEL Fast Messaging, LG 8979, SES-92, IEC 61850 MMS, IEC 60870-5-101/104, IEEE C37.118, FTP, SFTP, CDC Type II, EtherNet/IP Implicit Message Adapter

Peer-to-Peer

IEC 61850 GOOSE, SEL Mirrored Bits Communications, Network Global Variables (NGVL), Parallel Redundancy Protocol

Fieldbus

EtherCAT Client

Engineering Access

Modes:	SEL Interleaved, Direct
Port Server:	Map Serial Ports to IP Ports
Secure Web Server:	Diagnostic and Communications Data

Time-Code Input (Modulated IRIG-B)

Input Impedance:	2 kΩ
Accuracy:	500 µs

Time-Code Input (Demodulated IRIG-B)

On (1) State:	$V_{ih} \geq 2.2$ V
Off (0) State:	$V_{il} \leq 0.8$ V
Input Impedance:	1.5 kΩ
Accuracy:	250 ns

Time-Code Output (Demodulated IRIG-B)

On (1) State:	$V_{oh} \geq 2.4$ V
Off (0) State:	$V_{ol} \leq 0.8$ V
Load:	50 Ω
Output Drive Levels	
Demodulated IRIG-B:	TTL 120 mA, 3.5 Vdc, 25 Ω
Serial Port:	TTL 2.5 mA, 2.4 Vdc, 1 kΩ

Network Time Protocol (NTP) Modes

NTP Client:	As many as three configurable servers
NTP Server	

Simple Network Time Protocol (SNTP) Accuracy

±1 ms:	This does not take into account external factors such as network switches and topologies

Precise Time Protocol (PTP)

PTP Client:	Peer delay request and end-to-end path delay supported

Communications Ports

Ethernet Ports

Ports:	2 rear, 1 front
Data Rate:	10 or 100 Mbps
Front Connector:	RJ45 Female
Rear Connectors:	RJ45 Female or LC Fiber (single-mode or multimode, 100 Mbps only)

Serial Ports

Ports:	17 (33 with optional expansion)
Type:	EIA-232/EIA-485 (software selectable)
Data Rate:	300 to 115200 bps (Ports 1–16, 18–33) 300 to 57600 bps (Port 17)
Connector:	DB-9 Female (Ports 1–16, 18–33), Isolated 8 pin (Port 17)
Time Synchronization:	IRIG-B
Power:	+5 Vdc power on Pin 1 (500 mA maximum cumulative for 16 ports)

USB Ports

Ports:	2
1 Host Port:	Type A
1 Device Port:	Type B

Fiber Optics

Class 1 LASER/LED

Product:	IEC 60825-1:1993 + A1:1997 + A2:2001
Data Rate:	100 Mbps
Connector Type:	LC
Wavelength:	1300 nm
Multimode Option:	62.5 µm fiber
TX Max. Power:	–14 dBm
TX Min. Power:	–20 dBm
RX Sensitivity:	–31 dBm
RX Overload:	–14 dBm
Min. TX Level:	–20 dBm
Min. RX Sensitivity:	–31 dBm
Optical Budget:	11 dBm
Max. Distance:	2 km
Single-Mode Option:	9 µm fiber
TX Max. Power:	–8 dBm
TX Min. Power:	–15 dBm
RX Sensitivity:	–25 dBm
RX Overload:	–8 dBm
Min. TX Level:	–15 dBm
Min. RX Sensitivity:	–25 dBm
Optical Budget:	10 dBm
Max. Distance:	15 km

Inputs

Optoisolated Control Inputs

When used with dc control signals:

24 Vdc:	Pickup 19.2–30.0 Vdc Dropout < 5.0 Vdc
48 Vdc:	Pickup 38.4–60.0 Vdc Dropout < 28.8 Vdc
110 Vdc:	Pickup 88.0–132.0 Vdc Dropout < 66.0 Vdc
125 Vdc:	Pickup 105–150 Vdc Dropout < 75.0 Vdc
220 Vdc:	Pickup 176–264 Vdc Dropout < 132 Vdc
250 Vdc:	Pickup 200–300 Vdc Dropout < 150 Vdc

When used with ac control signals:

24 Vac:	Pickup 16.4–30.0 Vac rms Dropout < 5.0 Vac rms
48 Vac:	Pickup 32.8–60.0 Vac rms Dropout < 20.3 Vac rms
110 Vac:	Pickup 75.1–132.0 Vac rms Dropout < 46.6 Vac rms
125 Vac:	Pickup 89.6–150 Vac rms Dropout < 53 Vac rms
220 Vac:	Pickup 150.3–264 Vac rms Dropout < 93.2 Vac rms
250 Vac:	Pickup 170.6–300 Vac rms Dropout < 106 Vac rms
Current draw at nominal dc voltage:	<5 mA at nominal voltage <8 mA for 110 V option

Outputs

Mechanical Durability:	10 M no-load operations

DC Output Ratings

Rated Operational Voltage:	250 Vdc
Rated Voltage Range*:	24–250 Vdc
Rated Insulation Voltage:	300 Vdc
Pilot Duty Rating**:	R300, 250 Vdc
Make (Short Duration Contact Current)*:	30 A @ 250 Vdc per IEEE C37.90
Continuous Carry*:	6 A @ 70°C; 4 A @ 85°C
Short-Time Thermal Withstand*:	50 A for 1 s
Contact Protection:	360 Vdc, 40 J MOV protection across open contacts
Operating Time (Coil Energization to Contact Closure, Resistive Load)*:	Pickup/Dropout Time: ≤8 ms typical
Breaking Capacity* (10,000 Operations) per IEC 60255-0-20:1974:	48 V 0.50 A L/R = 40 ms 125 V 0.30 A L/R = 40 ms
Cyclic Capacity* (2.5 Cycles/Second) per IEC 60255-0-20:1974:	48 V 0.50 A L/R = 40 ms 125 V 0.30 A L/R = 40 ms

AC Output Ratings

Rated Operational Voltage:	240 Vac
Rated Voltage Range*:	110–240 Vrms
Rated Insulation Voltage:	300 Vac
Utilization Category:	AC-15 (control of electromagnetic loads > 72 VA)
Pilot Duty Rating**:	B300, 240 Vac
Contact Protection:	270 Vac, 40 J
Continuous Carry*:	3 A @ 120 Vac 1.5 A @ 240 Vac 5 A
Rated Frequency:	50/60 ± 5 Hz
Operating Time (Coil Energization to Contact Closure, Resistive Load)*:	Pickup/Dropout Time: ≤8 ms
Electrical Durability Make VA Rating*:	3600 VA, $\cos\phi = 0.3$
Electrical Durability Break VA Rating*:	360 VA, $\cos\phi = 0.3$

* Parameters verified by SEL per IEC 60255-0-20:1974 and IEEE C37.90-2005
** Per UL 508.

Power Supply

Input Voltage

Rated Supply Voltage:	125–250 Vdc; 110–240 Vac, 50/60 Hz 48–125 Vdc; 120 Vac, 50/60 Hz 24–48 Vdc
Input Voltage Range:	85–300 Vdc or 85–264 Vac 38–140 Vdc; 85–140 Vac; 18–60 Vdc polarity dependent

Power Consumption

AC:	<40 VA
DC:	<30 W

Interruptions

20 ms @ 24 Vdc
20 ms @ 48 Vdc
50 ms @ 125 Vac/Vdc
100 ms @ 250 Vac/Vdc

Fuse Rating

125–250 V Model:	2.5 A, high breaking capacity, time lag T, 250 V (5x20 mm, T2.5AH 250 V)
48–125 V Model:	2.5 A, high breaking capacity, time lag T, 250 V (5x20 mm, T2.5AH 250 V)
24–48 V Model:	7.0 A, high breaking capacity, time lag T, 250 V (5x20 mm, T7.0AH 60 V)

4. SCADA ENCLOSURE

4.1. SWITCH EDS-408-A-SS-SC

EDS-408A Series

8-port entry-level managed Ethernet switches

Features and Benefits

- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and RSTP/STP for network redundancy
- IGMP Snooping, QoS, IEEE 802.1Q VLAN, and port-based VLAN supported
- Easy network management by web browser, CLI, Telnet/serial console, Windows utility, and ABC-01
- PROFINET or EtherNet/IP enabled by default (PN or EIP models)
- Supports MXstudio for easy, visualized industrial network management

Certifications

Introduction

The EDS-408A Series is designed especially for industrial applications. The switches support a variety of useful management functions, such as Turbo Ring, Turbo Chain, ring coupling, IGMP snooping, IEEE 802.1Q VLAN, port-based VLAN, QoS, RMON, bandwidth management, port mirroring, and warning by email or relay. The ready-to-use Turbo Ring can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the EDS-408A switches.

Additional Features and Benefits

- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, Modbus TCP and PROFINET[1] protocols for device management and monitoring
- EtherNet/IP EDS (Electronic Data Sheet) file, custom AOI (Add-On Instructions) and FactoryTalk® View faceplate available
- PROFINET GSDML file and SIMATIC STEP 7 device icons available[1]
- Port mirroring for online debugging
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p and TOS/DiffServ) to increase determinism
- RMON for proactive and efficient network monitoring
- SNMPv1/v2c/v3 for different levels of network management security
- Bandwidth management to prevent unpredictable network status

Specifications

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	EDS-408A/408A-T, EDS-408A-EIP/PN Series: 8 EDS-408A-MM-SC/MM-ST/SS-SC Series: 6 EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC Series: 5 All models support: Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection
100BaseFX Ports (multi-mode SC connector)	EDS-408A-MM-SC/2M1S-SC Series: 2 EDS-408A-3M-SC Series: 3 EDS-408A-1M2S-SC Series: 1
100BaseFX Ports (multi-mode ST connector)	EDS-408A-MM-ST Series: 2 EDS-408A-3M-ST Series: 3
100BaseFX Ports (single-mode SC connector)	EDS-408A-SS-SC/1M2S-SC Series: 2 EDS-408A-2M1S-SC Series: 1 EDS-408A-3S-SC/3S-SC-48 Series: 3

1. EDS-408A-PN Series only

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol

Optical Fiber

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	50/125 µm 800 MHz x km	G.652
Typical Distance		4 km	5 km	40 km
Wavelength	Typical (nm)	1300		1310
	TX Range (nm)	1260 to 1360		1280 to 1340
	RX Range (nm)	1100 to 1600		1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20		0 to -5
	RX Range (dBm)	-3 to -32		-3 to -34
	Link Budget (dB)	12		29
	Dispersion Penalty (dB)	3		1

Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.
Note: Compute the "typical distance" of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Ethernet Software Features

Filter	802.1Q VLAN, GMRP, GVRP, IGMP v1/v2, Port-based VLAN
Industrial Protocols	EtherNet/IP, Modbus TCP, EDS-408A-PN Series: PROFINET IO Device (Slave)
Management	Back Pressure Flow Control, BOOTP, DHCP Option 66/67/82, DHCP Server/Client, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP
MIB	Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB
Redundancy Protocols	RSTP, STP, Turbo Chain, Turbo Ring v1/v2
Time Management	NTP Server/Client, SNTP

Switch Properties

IGMP Groups	256
MAC Table Size	8 K
Max. No. of VLANs	64
Packet Buffer Size	1 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094

Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 10-pin RJ45 (19200, n, 8, 1)

DIP Switch Configuration	
Ethernet Interface	Turbo Ring, Master, Coupler, Reserve
Input/Output Interface	
Alarm Contact Channels	Relay output with current carrying capacity of 1 A @ 24 VDC
Power Parameters	
Connection	1 removable 6-contact terminal block(s)
Input Voltage	All models: Redundant dual inputs EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC/EIP/PN Series: 12/24/48 VDC EDS-408A-3S-SC-48/408A-3S-SC-48-T: ±24/±48 VDC
Operating Voltage	EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC/EIP/PN Series: 9.6 to 60 VDC EDS-408A-3S-SC-48 Series: ±19 to ±60 VDC[2]
Input Current	EDS-408A/408A-T, EDS-408A-EIP/PN Series: 0.18 A @ 24 VDC EDS-408A-MM-SC/MM-ST/SS-SC Series: 0.30 A @ 24 VDC EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC Series: 0.35 A @ 24 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Physical Characteristics	
Housing	Metal
IP Rating	IP30
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC, EDS-408A-EIP/PN Series: 650 g (1.44 lb) EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC Series: 890 g (1.97 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
Safety	All models: EN 60950-1, UL 508 EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC Series, EDS-EIP/PN Series: UL 60950-1
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V

2. -60 to -19 VDC or 19 to 60 VDC. Do not mix power polarity systems.

	IEC 61000-4-8 PFMF
Hazardous Locations	EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC Series, EDS-408A-EIP/PN Series: ATEX, Class I Division 2
Maritime	EDS-408A/408A-T, EDS-408A-MM/SS Series: NK EDS-408A/408A-T, EDS-408A-MM/SS Series, EDS-408A-EIP/PN Series: DNV-GL
Railway	EN 50121-4
Traffic Control	NEMA TS2
Freefall	IEC 60068-2-31
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	EDS-408A/408A-T, EDS-408A-EIP/PN Series: 1,339,439 hrs EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC Series: 1,253,072 hrs EDS-408A-3S-SC-48 Series: 989,940 hrs
Standards	Telcordia (Bellcore), GB

Warranty

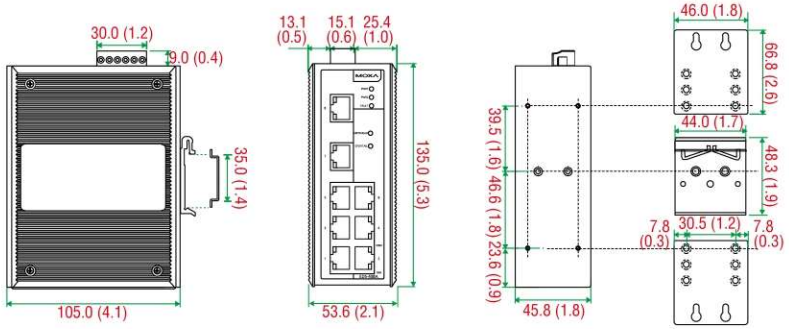
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDS-408A Series switch
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	4 x cap, plastic, for RJ45 port
Documentation	1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese 1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Side View | Front View | Rear View | DIN-Rail/Panel-Mounting Kit

Ordering Information

Model Name	Layer	Total No. of Ports	10/100BaseT(X) Ports RJ45 Connector	100BaseFX Ports Multi-Mode, SC Connector	100BaseFX Ports Multi-Mode, ST Connector	100BaseFX Ports Single-Mode, SC Connector	Operating Temp.
EDS-408A	2	8	8	–	–	–	-10 to 60°C
EDS-408A-T	2	8	8	–	–	–	-40 to 75°C
EDS-408A-MM-ST	2	8	6	–	2	–	-10 to 60°C
EDS-408A-MM-ST-T	2	8	6	–	2	–	-40 to 75°C
EDS-408A-MM-SC	2	8	6	2	–	–	-10 to 60°C
EDS-408A-MM-SC-T	2	8	6	2	–	–	-40 to 75°C
EDS-408A-SS-SC	2	8	6	–	–	2	-10 to 60°C
EDS-408A-SS-SC-T	2	8	6	–	–	2	-40 to 75°C
EDS-408A-3M-ST	2	8	5	–	3	–	-10 to 60°C
EDS-408A-3M-ST-T	2	8	5	–	3	–	-40 to 75°C
EDS-408A-3M-SC	2	8	5	3	–	–	-10 to 60°C
EDS-408A-3M-SC-T	2	8	5	3	–	–	-40 to 75°C
EDS-408A-3S-SC	2	8	5	–	–	3	-10 to 60°C
EDS-408A-3S-SC-T	2	8	5	–	–	3	-40 to 75°C
EDS-408A-3S-SC-48	2	8	5	–	–	3	-10 to 60°C
EDS-408A-3S-SC-48-T	2	8	5	–	–	3	-40 to 75°C
EDS-408A-1M2S-SC	2	8	5	1	–	2	-10 to 60°C
EDS-408A-1M2S-SC-T	2	8	5	1	–	2	-40 to 75°C
EDS-408A-2M1S-SC	2	8	5	2	–	1	-10 to 60°C
EDS-408A-2M1S-SC-T	2	8	5	2	–	1	-40 to 75°C

4.2. I/O CARD - IOLOGIK 1210

ioLogik E1200 Series

Ethernet remote I/O with 2-port Ethernet switch

Features and Benefits

- User-definable Modbus TCP Slave addressing
- Supports RESTful API for IIoT applications
- Supports EtherNet/IP Adapter
- 2-port Ethernet switch for daisy-chain topologies
- Saves time and wiring costs with peer-to-peer communications
- Active communication with MX-AOPC UA Server
- Supports SNMP v1/v2c
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplifies I/O management with MXIO library for Windows or Linux
- Class I Division 2, ATEX Zone 2 certification[1]
- Wide operating temperature models available for -40 to 75°C (-40 to 167°F) environments

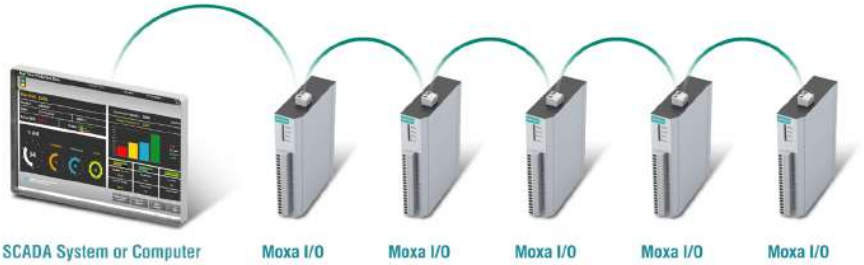
Certifications

Introduction

The ioLogik E1200 Series supports the most often-used protocols for retrieving I/O data, making it capable of handling a wide variety of applications. Most IT engineers use SNMP or RESTful API protocols, but OT engineers are more familiar with OT-based protocols, such as Modbus and EtherNet/IP. Moxa's Smart I/O makes it possible for both IT and OT engineers to conveniently retrieve data from the same I/O device. The ioLogik E1200 Series speaks six different protocols, including Modbus TCP, EtherNet/IP, and Moxa AOPC for OT engineers, as well as SNMP, RESTful API, and Moxa MXIO library for IT engineers. The ioLogik E1200 retrieves I/O data and converts the data to any of these protocols at the same time, allowing you to get your applications connected easily and effortlessly.

Daisy-Chained Ethernet I/O Connection

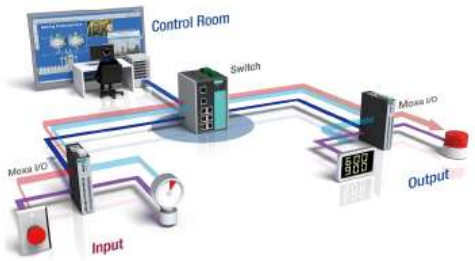
This industrial Ethernet remote I/O comes with two switched Ethernet ports to allow for the free flow of information downstream to another local Ethernet device, or upstream to a control server via expandable daisy-chained Ethernet I/O arrays. Applications such as factory automation, security and surveillance systems, and tunneled connections can make use of daisy-chained Ethernet for building multidrop I/O networks over standard Ethernet cables. Many industrial automation users are familiar with multidrop as the configuration most typically used in fieldbus solutions. The daisy-chain capabilities supported by ioLogik Ethernet remote I/O units not only increase the expandability and installation possibilities for your remote I/O applications, but also lower overall costs by reducing the need for separate Ethernet switches. Daisy-chaining devices in this way will also reduce overall labor and cabling expenses.



1. Class I Division 2 and ATEX currently do not apply to the E1213/E1213-T models.

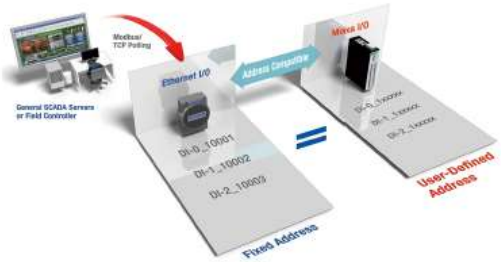
Save Time and Wiring Costs with Peer-to-Peer Communications

In remote automation applications, the control room and sensors are often far removed, making wiring over long distances a constant challenge. With peer-to-peer networking, users may now map a pair of ioLogik Series modules so that input values will be directly transferred to output channels, greatly simplifying the wiring process and reducing wiring costs.



User-Definable Modbus TCP Addressing for Painless Upgrading of Existing Systems

For Modbus devices that are controlled and detected by fixed addresses, users need to spend a vast amount of time researching and verifying initial configurations. Users need to locate each device's networking details, such as I/O channels or vendor-defined addresses, to enable the initial or start address of a SCADA system or PLC. Devices that support user-definable Modbus TCP addressing offer greater flexibility and easier setup. Instead of worrying about individual devices, users simply configure the function and address map to fit their needs.



Push Technology for Events

When used with MX-AOPC UA Server, devices can use active push communications when communicating changes in state and/or events to a SCADA system. Unlike a polling system, when using a push architecture for communications with a SCADA system, messages will only be delivered when changes in state or configured events occur, resulting in higher accuracy and lower amounts of data that need to be transferred.

Specifications

Input/Output Interface

Digital Input Channels	ioLogik E1210 Series: 16 ioLogik E1212/E1213 Series: 8 ioLogik E1214 Series: 6 ioLogik E1242 Series: 4
Digital Output Channels	ioLogik E1211 Series: 16 ioLogik E1213 Series: 4
Configurable DIO Channels (by jumper)	ioLogik E1212 Series: 8 ioLogik E1213/E1242 Series: 4
Relay Channels	ioLogik E1214 Series: 6
Analog Input Channels	ioLogik E1240 Series: 8 ioLogik E1242 Series: 4
Analog Output Channels	ioLogik E1241 Series: 4
RTD Channels	ioLogik E1260 Series: 6

Thermocouple Channels	ioLogik E1262 Series: 8
Isolation	3k VDC or 2k Vrms
Buttons	Reset button

Digital Inputs

Connector	Screw-fastened Euroblock terminal
Sensor Type	Dry contact Wet contact (NPN or PNP)
I/O Mode	DI or event counter
Dry Contact	On: short to GND Off: open
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC
Counter Frequency	250 Hz
Digital Filtering Time Interval	Software configurable
Points per COM	ioLogik E1210/E1212 Series: 8 channels ioLogik E1213 Series: 12 channels ioLogik E1214 Series: 6 channels ioLogik E1242 Series: 4 channels

Digital Outputs

Connector	Screw-fastened Euroblock terminal
I/O Type	ioLogik E1211/E1212/E1242 Series: Sink ioLogik E1213 Series: Source
I/O Mode	DO or pulse output
Current Rating	ioLogik E1211/E1212/E1242 Series: 200 mA per channel ioLogik E1213 Series: 500 mA per channel
Pulse Output Frequency	500 Hz (max.)
Over-Current Protection	ioLogik E1211/E1212/E1242 Series: 2.6 A per channel @ 25°C ioLogik E1213 Series: 1.5 A per channel @ 25°C
Over-Temperature Shutdown	175°C (typical), 150°C (min.)
Over-Voltage Protection	35 VDC

Relays

Connector	Screw-fastened Euroblock terminal
Type	Form A (N.O.) power relay
I/O Mode	Relay or pulse output
Pulse Output Frequency	0.3 Hz at rated load (max.)
Contact Current Rating	Resistive load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Contact Resistance	100 milli-ohms (max.)
Mechanical Endurance	5,000,000 operations
Electrical Endurance	100,000 operations @ 5 A resistive load

Breakdown Voltage	500 VAC
Initial Insulation Resistance	1,000 mega-ohms (min.) @ 500 VDC
Note	Ambient humidity must be non-condensing and remain between 5 and 95%. The relays may malfunction when operating in high condensation environments below 0°C.

Analog Inputs

Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
I/O Type	Differential
Resolution	16 bits
Input Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA 4 to 20 mA (with burn-out detection)
Accuracy	ioLogik E1240/E1242: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1240-T/E1242-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ±0.5% FSR @ -40 to 75°C
Sampling Rate	ioLogik E1240: 12 samples/sec per module (shared between up to 8 channels)[2] ioLogik E1242: 12 samples/sec per module (shared between up to 4 channels)[2]
Built-in Resistor for Current Input	120 ohms
Input Impedance	10 mega-ohms (min.)

Analog Outputs

Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
Output Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA
Resolution	12-bit
Accuracy	ioLogik E1241: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1241-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Load (Current Mode)	Internal power: 400 ohms (max.) 24 V external power: 1000 ohms (max.)
Voltage Output Short-Circuit Protection	10 mA

RTDs

Connector	Screw-fastened Euroblock terminal
Sensor Type	PT1000 (-200 to 350°C)

2. If N channels are enabled, the sampling rate for each enabled channel = 12/N samples/sec.

	PT50, PT100, PT200, PT500 (-200 to 850°C)
Resistance Type	310, 620, 1250, and 2200 ohms
Input Connection	2- or 3-wire
Sampling Rate	ioLogik E1260: 12 samples/sec per module (shared between up to 6 channels)[3]
Resolution	0.1°C or 0.1 ohms
Accuracy	ioLogik E1260: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1260-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Input Impedance	625 kilo-ohms (min.)
Thermocouples	
Connector	Screw-fastened Euroblock terminal
Sensor Type	J, K, T, E, R, S, B, N
Millivolt Type	±19.532 mV ±39.062 mV ±78.126 mV Fault and over-voltage protection: -35 to +35 VDC (power off); -25 to +30 VDC (power on)
Resolution	16 bits
Millivolt Accuracy	ioLogik E1262: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik E1262-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
TC Accuracy	Types J, T, E, S, B: ±5°C Types K, R, N: ±8°C
CJC Accuracy	±0.5°C @ 25°C ±1.5°C @ -40 to 75°C
Sampling Rate	ioLogik E1262: 12 samples/sec per module (shared between up to 8 channels)[3]
Input Impedance	10 mega-ohms (min.)
Ethernet Interface	
10/100BaseT(X) Ports (RJ45 connector)	2, 1 MAC address (Ethernet bypass)
Magnetic Isolation Protection	1.5 kV (built-in)
Ethernet Software Features	
Configuration Options	Web Console (HTTP), Windows Utility (ioSearch), MCC Tool
Industrial Protocols	Modbus TCP Server (Slave), Moxa AOPC (Active Tag), MXIO Library, EtherNet/IP Adapter
Management	RESTful API, SNMPv1/v2c, SNMPv1 Trap, HTTP, DHCP Client, BOOTP, IPv4, TCP/IP, UDP

3. If N channels are enabled, the sampling rate for each enabled channel = 12/N samples/sec.

MIB	Device Settings MIB
Security	Access control list
Security Functions	
Authentication	Local database
LED Interface	
LED Indicators	Power, Ready, Port 1, Port 2
Modbus TCP	
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Mode	Server (Slave)
Max. No. of Client Connections	10
EtherNet/IP	
Mode	Adapter
Max. No. of Scanner Connections	9 (for read-only), 1 (for read/write)
Power Parameters	
Power Connector	Screw-fastened Euroblock terminal
No. of Power Inputs	1
Input Voltage	12 to 36 VDC
Power Consumption	ioLogik E1210 Series: 110 mA @ 24 VDC ioLogik E1211 Series: 200 mA @ 24 VDC ioLogik E1212 Series: 155 mA @ 24 VDC ioLogik E1213 Series: 130 mA @ 24 VDC ioLogik E1214 Series: 188 mA @ 24 VDC ioLogik E1240 Series: 121 mA @ 24 VDC ioLogik E1241 Series: 194 mA @ 24 VDC ioLogik E1242 Series: 139 mA @ 24 VDC ioLogik E1260 Series: 110 mA @ 24 VDC ioLogik E1262 Series: 118 mA @ 24 VDC
Physical Characteristics	
Housing	Plastic
Dimensions	27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)
Weight	200 g (0.44 lb)
Installation	DIN-rail mounting, Wall mounting
Wiring	I/O cable, 16 to 26 AWG Power cable, 12 to 24 AWG
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	4000 m[4]

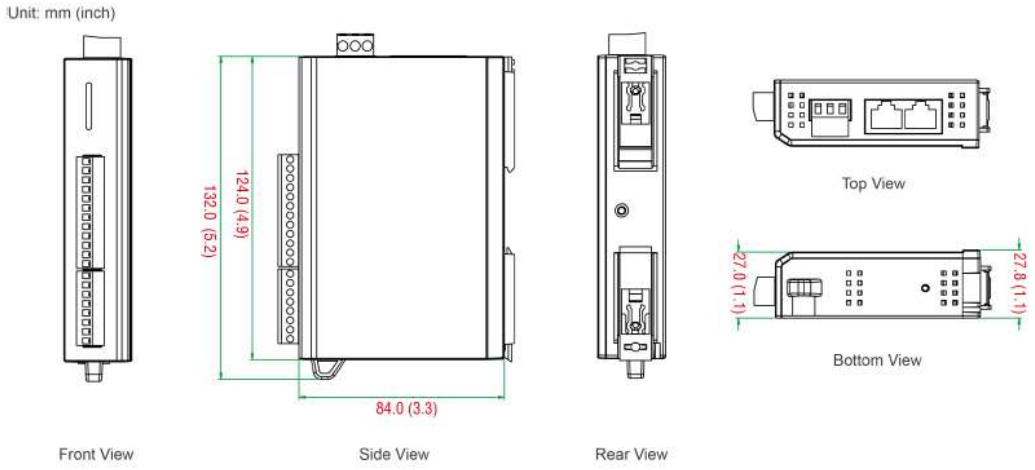
4. Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications	
EMC	EN 55032/24, EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	ATEX, Class I Division 2[5]
Safety	UL 508
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	ioLogik E1210 Series: 671,345 hrs ioLogik E1211 Series: 923,027 hrs ioLogik E1212 Series: 561,930 hrs ioLogik E1213 Series: 715,256 hrs ioLogik E1214 Series: 808,744 hrs ioLogik E1240 Series: 474,053 hrs ioLogik E1241 Series: 888,656 hrs ioLogik E1242 Series: 502,210 hrs ioLogik E1260 Series: 660,260 hrs ioLogik E1262 Series: 631,418 hrs
Standards	Telcordia SR332

Warranty	
Warranty Period	ioLogik E1214: 2 years[6] ioLogik E1210/E1211/E1212/E1213/E1240/E1241/E1242/E1260/E1262: 5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x ioLogik E1200 Series remote I/O
Installation Kit	1 x terminal block, 8-pin, 3.81 mm 1 x terminal block, 12-pin, 3.81 mm 1 x terminal block, 3-pin, 5.00 mm
Documentation	1 x quick installation guide 1 x warranty card

5. ATEX and Class I Division 2 currently do not apply to the ioLogik E1213/E1213-T models.
6. Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

Dimensions



4.3. POWER SUPPLY WEIDMULLER PROECO TP 120W 24V 5A (2 UNITS)

Dimensiones y pesos

Profundidad	100 mm	Profundidad (pulgadas)	3,937 inch
Altura	125 mm	Altura (pulgadas)	4,921 inch
Anchura	40 mm	Anchura (pulgadas)	1,575 inch
Peso neto	675 g		

Temperaturas

Temperatura de almacenamiento	-40 °C...85 °C	Temperatura de servicio	-25 °C...70 °C
Temperatura de servicio, min.	-25 °C	Temperatura de servicio, max.	70 °C

Entrada

Consumo de corriente AC	1,26 A @ 230 V AC / 2,24 A @ 110 V AC	Consumo de corriente DC	0,39 A @ 370 V DC / 1,16 A @ 120 V DC
Frecuencia de entrada	47...63 Hz	Fusible de entrada (interno)	Sí
Fusible previo recomendado	4 A / DI, fusible 6 A, Char. B, interruptor de protección 3...5 A, Char. C, interruptores automáticos	Gama de tensión de entrada DC	80...370 V DC (Derating @ 120 V DC)
Intensidad de conexión	máx. 40A	Potencia admitida nominal	137,9 VA
Protectores de sobretensión, entrada	Varistor	Rango de tensión de entrada AC	85...264 V AC (deriva térmica a 100 V AC)
Sistema de conexión	Conexión brida-tornillo	Tensión nominal de entrada	100...240 VCA
Zona de frecuencia AC	47...63 Hz		

Salida

Carga capacitiva	ilimitado	Conmutado paralelo	sí, máx. 5
Corriente de salida continua @ $U_{Nominal}$	5 A @ 55 °C, 3,75 A @ 70 °C	Corriente de salida nominal para $U_{nominal}$	5 A a 55 °C
Potencia de salida	120 W	Protección contra tensión inversa	Sí
Protección de sobrecarga	Sí	Rizado residual, picos de tensión de desconexión	< 50 mV_{PP} @ 24 V DC, I_N
Sistema de conexión	Conexión brida-tornillo	Tensión de salida, max.	28 V
Tensión de salida, min.	22 V	Tensión de salida, observacione	(ajustable con potenciómetro)
Tensión nominal de salida	24 V DC ± 1 %	Tiempo de subida	≤ 100 ms

Datos generales

Corriente de descarga a tierra, máx.	3,5 mA	Factor de potencia (aprox.)	> 0,5 @ 230 V AC / > 0,53 @ 115 V AC
Grado de eficiencia	87 %	Máx. humedad rel. del aire (en servicio)	5 %...95 % RH
Posición de montaje, instrucciones de montaje	Montaje sobre carril TS 35	Protección contra cortocircuito	Sí
Protección contra exceso de temperatura	Sí	Protección contra tensión inversa de la carga	30...35 V DC
Pérdida de potencia, carga nominal	15 W	Pérdida de potencia, sin carga	4 W
Señalización	LED verde (U_{salida} > 21,6 V DC), LED amarillo (I_{salida} > 90 % $I_{Nominal}$ tip.), LED rojo (sobrecarga, sobretemperatura, cortocircuito, U_{salida} < 20,4 V DC)	Tiempo de puenteado de fallo de CA @ $I_{nominal}$	> 80 ms @ 230 V AC / > 20 ms @ 115 V AC
Tipo de protección	IP20	Versión especial de la capota	Metal, resistente a la corrosión

Coordenadas de aislamiento

Clase de protección	I, con conexión de tierra	Entrada de tensión de aislamiento / tierra	2 kV
Entrada de tensión de aislamiento / tierra	0,5 kV	Grado de polución	2
Tensión de aislamiento entrada /salida	3 kV		

EMC / choque / vibración

Emisión de ruidos de conformidad con la norma EN55032	Clase B	Limitación de corrientes de armónicos de red	Conforme a la norma EN 61000-3-2
Prueba de resistencia a interferencias según	EN 61000-4-2 (ESD), EN 61000-4-3 (RS), EN 61000-4-4 (encendido), EN 61000-4-5 (sobretensión), EN 61000-4-6 (dirigido), EN61000-4-8 (Fields), EN61000-4-11 (Dips)	Resistencia a la vibración según IEC 60068-2-6	1 g conforme a la norma EN 50178
Resistencia al impacto según IEC 60068-2-27	15 g en todas las direcciones		

Seguridad eléctrica (normas aplicadas)

Equipamiento eléctrico de las máquinas	según EN60204	Equipos electrónicos con componentes electrónicos	según EN50178 / VDE0160
Protección contra corrientes peligrosas	Según VDE 0106-101	Separación segura / protección frente a choques eléctricos	VDE0100-410 / según DIN57100-410
Tensión baja de protección	SELV según IEC 60950-1, PELV conforme a la norma EN 60204-1	Transformadores de seguridad para fuentes de alimentación conmutadas	Conforme a la norma EN 61558-2-16

Datos de conexión (entrada)

Sección de conexión del conductor AWG/kcmil , max.	12	Sección de conexión del conductor AWG/kcmil , min.	26
Sección de conexión del conductor, flexible , max.	2,5 mm²	Sección de conexión del conductor, flexible , min.	0,5 mm²
Sección del conductor, rígido , máx.	6 mm²	Sección del conductor, rígido , mín.	0,5 mm²
Sistema de conexión	Conexión brida-tornillo		

Datos de conexión (salida)

Número de bornes	6 (++,–,13,14)	Sección de conexión del conductor AWG/kcmil , max.	12
Sección de conexión del conductor AWG/kcmil , min.	26	Sección de conexión del conductor, flexible , max.	2,5 mm²
Sección de conexión del conductor, flexible , mín.	0,5 mm²	Sección del conductor, rígido , máx.	6 mm²
Sección del conductor, rígido , mín.	0,5 mm²	Sistema de conexión	Conexión brida-tornillo

PA52_7 Señalización

Carga de contacto (CNA)	max. 30 V DC / 1 A	Contacto libre de potencial	Sí
Relé encendido/apagado	Tensión de salida >21,6 V DC/ <20,4 V DC, sobrecarga		

Homologaciones

Instituto (cULus)	CULUS	N.º de certificado (cULus)	E258476

Clasificaciones

ETIM 6.0	EC002540	ETIM 7.0	EC002540
ETIM 8.0	EC002540	ECLASS 9.0	27-04-07-01
ECLASS 9.1	27-04-07-01	ECLASS 10.0	27-04-07-01
ECLASS 11.0	27-04-07-01	ECLASS 12.0	27-04-07-01

Conformidad medioambiental del producto

REACH SVHC	Lead 7439-92-1
SCIP	6d8cdf22-8230-4af8-86c8-3558c716666d

4.4. CP DC UPS 24V 20A/10A SERVICE

Dimensiones y pesos

Profundidad	150 mm	Profundidad (pulgadas)	5,905 inch
Altura	130 mm	Altura (pulgadas)	5,118 inch
Anchura	66 mm	Anchura (pulgadas)	2,598 inch
Peso neto	1.139 g		

Temperaturas

Temperatura de almacenamiento	-40 °C...85 °C	Temperatura de servicio	-25 °C...70 °C
Temperatura de servicio, min.	-25 °C	Temperatura de servicio, max.	70 °C
Humedad	5...95 % (sin condensación)		

Cargador de batería integrado

Coeficiente de temperatura	- 48 mV / °C	Corriente de carga	0,15 cA
Función de carga	Curva característica IU	Tensión de carga (compensación en función de la temperatura)	27, 48 V a 20°C
Test de disponibilidad de batería	cada minuto		

Elementos operativos y entradas de mando

Conmutador DIP de funciones	Inversión de salidas de transistor, Funcionamiento sin sonda de temperatura	Desconexión remota (enclavamiento)	Sí
Selector corriente de salida	20 A, 10 A	Selector de batería	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Sin batería, Servicio
Selector de tiempos de autonomía	0,5 min, 1 min, 3 min, 5 min, 10 min, 20 min, 30 min, 45 min, ∞, ∞ w/0	Sonda de temperatura	NTC 100 kΩ

Módulo batería

Conexión en paralelo opcional	Sí, máx. 2	Medio de almacenamiento	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Seleccionable con conmutador rotativo
Tensión nominal	24 V		

Entrada

Consumo de corriente DC	máx. 200 mA (sin batería), máx. 0,5 A (con batería totalmente cargada)	Corriente de entrada	≤ 13 A (para 10 A), ≤ 23 A (para 20 A)
Corriente de entrada máxima admisible	28 A	Fusible de entrada (interno)	Sí
Gama de tensión de entrada DC	20...30 V DC	Tensión nominal de entrada	24 V DC
Técnica de conexión de conductores	Conexión brida-tornillo		

Salida

Coeficiente de temperatura	- 48 mV / °C	Conmutado paralelo	Sí, máx. 2, sí, con módulo del diodo
Corriente de salida continua @ $U_{Nominal}$	24 A @ 45 °C, 20 A @ 60 °C, 15 A @ 70 °C	Corriente de salida nominal para $U_{nominal}$	20 A @ 60 °C
Intensidad de salida, max.	24 A	Protección contra tensión inversa	Sí
Protección de sobrecarga	Sí	Rizado residual, picos de tensión de desconexión	< 50 mV_{PP} @ 24 V DC, I_N
Sonda de temperatura	NTC 100 kΩ	Tensión de salida, observacione	Vo = Vin - 0,2 V funcionamiento normal (Imáx), Vo = Vin - 0,3 V alimentación batería (Imáx)
Tensión nominal de salida	24 V DC ± 1 %	Técnica de conexión de conductores	Conexión brida-tornillo

Datos generales

Categoría de sobretensión	III	Grado de eficiencia	≥ 96% modo normal, batería cargándose, ≥ 98% modo normal, batería cargada, ≥ 98% modo memoria tampón
Humedad	5...95 % (sin condensación)	Limitación de intensidad	> 120 % I_N
Margen	En función de la batería conectada	Medio de almacenamiento	1,3 Ah, 3,4 Ah, 7,2 Ah, 12 Ah, 17 Ah, Seleccionable con conmutador rotativo
Pie de enclavamiento	Metálico	Posición de montaje, instrucciones de montaje	Horizontal en un carril TS35, 50 mm de espacio en parte superior e inferior para circ. de aire. Se pueden montar en línea sin espacio intermedio.
Protección contra cortocircuito	Sí	Protección contra tensión inversa de la carga	32...34 V DC
Pérdida de potencia	< 10 W	Tipo de protección	IP20
Versión especial de la capota	Metal, resistente a la corrosión		

Coordenadas de aislamiento

Categoría de sobretensión	III	Clase de protección	III, sin conexión PE, para SELV
Grado de polución	2	Separación galvánica de entrada-tierra	1 kV
Separación galvánica de salida-tierra	1 kV	Tensión de aislamiento	1 kV DC

EMC / choque / vibración

Emisión de ruidos de conformidad con la norma EN55032	Clase B	Prueba de resistencia a interferencias según	EN 61000-4-2 (ESD)| EN 61000-4-3 y EN 61000-4-8 (campos)|EN 61000-4-4 (encendido)| EN 61000-4-5 (sobretensión)|EN 61000-4-6 (dirigido)|EN 61000-4-11 (inmersiones)
Resistencia a la vibración según IEC 60068-2-6	2,3 g	Resistencia al impacto según IEC 60068-2-27	30 g en todas las direcciones

4.5. BATTERY WEIDMULLER CP A BATTERY 24V DC3.4AH

Dimensions and weights			
Depth	137 mm	Depth (inches)	5.394 inch
Height	144 mm	Height (inches)	5.669 inch
Width	108 mm	Width (inches)	4.252 inch
Net weight	3,478 g		
Temperatures			
Storage temperature	-15 °C...40 °C	Ambient temperature	0°...+40°C (Charging); -15° ...+50°C (Discharging)
Operating temperature	0 °C...40 °C	Operating temperature, min.	0 °C
Operating temperature, max.	40 °C		
Operating interfaces and control inputs			
Temperature probe	NTC 100 kΩ		
Input			
Charging current, max.	0.51 A	Nominal capacity	3.4 Ah
Rated input voltage	24 V DC		
Output			
Buffer time 10A	11.3 min	Buffer time 20A	5 min
Output current, max.	25 A	Overload and short circuit protection	25 A fuse
Parallel connection option	Yes	Protection against inverse voltage	Yes
Temperature probe	NTC 100 kΩ		
General data			
Clip-in foot	metal	Max. perm. air humidity (operational)	5 %...95 % RH
Protection degree	IP20	Shock wall acc. to IEC 68227	30 g
Vibration DIN rail/wall in accordance with IEC 68-2-6	0.7 / 0.7 g		
Insulation coordination			
Protection class	III, with no ground connection, for SELV		
Connection data (input)			
Conductor cross-section, AWG/kcmil , max.	10	Conductor cross-section, AWG/kcmil , min.	22
Conductor cross-section, flexible , min.	0.5 mm²	Conductor cross-section, rigid , max.	6 mm²
Conductor cross-section, rigid , min.	0.2 mm²	Wire connection cross section, flexible (input), max.	6 mm²
Connection data (output)			
Conductor cross-section, AWG/kcmil , max.	10	Conductor cross-section, AWG/kcmil , min.	22
Conductor cross-section, flexible , max.	6 mm²	Conductor cross-section, flexible , min.	0.5 mm²
Conductor cross-section, rigid , max.	6 mm²	Conductor cross-section, rigid , min.	0.2 mm²
Number of terminals	2 (+ / -)		

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Technical data

Connection data (signal)

Number of terminals	2	Wire connection method	Pluggable screw connection
Wire cross-section, AWG/kcmil , max.	16	Wire cross-section, AWG/kcmil , min.	28
Wire cross-section, solid , max.	1.5 mm²	Wire cross-section, solid , min.	0.2 mm²

Approbations

Certificate no. (cULus)	E349959	Institute (cULus)	CULUS

Classifications

ETIM 6.0	EC002850	ETIM 7.0	EC002850
ETIM 8.0	EC002850	ECLASS 9.0	27-04-06-92
ECLASS 9.1	27-04-92-01	ECLASS 10.0	27-04-06-92
ECLASS 11.0	27-04-06-92	ECLASS 12.0	27-04-06-92

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
SCIP	30bf869c-8adc-4ed2-ad02-c1fec963e943