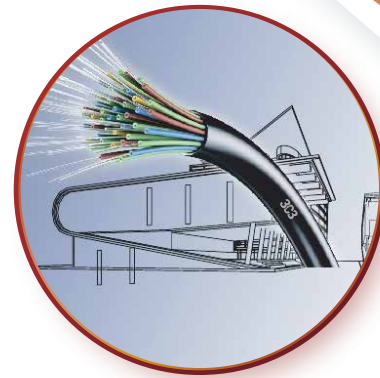# 3C3®

INDUSTRIAL ETHERNET SOLUTIONS
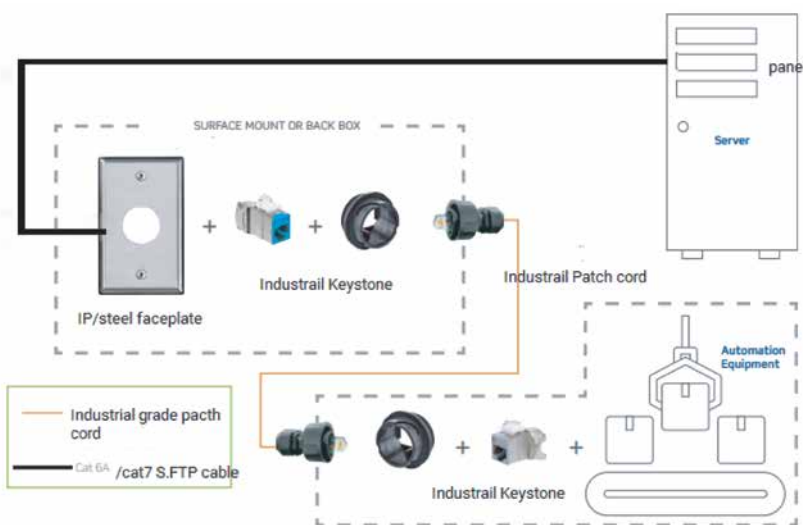
3C3®

INDUSTRIAL ETHERNET SOLUTIONS
Designed based on Industrial application

Today, when we look at the Plant floor we need to understand importance of transmission media which needs to integrate and enhance the transmission performance of its signal for any application, in any type of environment. We at 3C3, provide and develop a reliable and a durable solution which even can be customized for our customer needs. From the connectivity of the Controller to the equipment on the factory floor one can depend on us for seamless data communications to maximize your uptime.

A Designed for repeated retractable conditions application.

B Special high Strength, Flexible type central reinforcing element to ensure fiber strength and bending properties.

C Large are of aramid reinforces fiber optic cable to provide a high mechanical strength.

Application

- Petrochemical
- Automotive manufacturing
- Pharmaceutical
- Power generation
- Water treatment
- Pulp and Paper
- Food and Beverage
- Military Communications
- Coal, Oil, Natural Gas etc
- Geological exploration Communications
- Broadcast television
- Emergency reopened optical fiber communications
- General manufacturing plant

SURFACE MOUNT OR BACK BOX

Industrail Keystone

Industrail Patch cord

IP/steel faceplate

panel

Server

Automation Equipment

Industrial grade pacth cord

Cat 6A /cat7 S.FTP cable

Industrail Keystone

Cabling Solutions for Industrial Ethernet Application

Cat6A S/FTP Cable

High Speed 10Gigabit Ethernet S-FTP 500 MHz Class EA / Category 6A LSZH Cable is produced using 8x23 AWG Solid Bare Copper Conductors. Every pair is separately shielded – pairs in metal foil (PIMF). The twisted pairs are covered with a braided screen (S/FTP) which guarantees outstanding shielding properties and then LSZH Outer Sheath. It supports 10/100/1000Base-T, 155Mbps ATM, IEEE 802.3an (10GBase-T) Standard.

SPECIFICATION		VALUE
Conductor	AWG	23
		Solid bare Copper
Insulation	Material	Foam Polyethylene
Jacket	External DD	7.5±0.4mm
	Material	LSZH
Individual Pair shielding		Aluminium
		/Polyester Tape Shielding
Braid Shield		Tinned Copper Braiding

Features

- Complies to ANSI/TIA-568.2-D Category 6A & ISO/IEC 11801 Class EA
- Fire Rating as per IEC 60332-1
- Full Power Sum Performance
- Supports 10Gigabit Ethernet to a full 100m up to 500 MHz
- Excellent Shielding prevents Alien Crosstalk
- Channel Performance Verified by ETL & UL Listed

Application

- High-speed data networking in office environments.
- Data centers for server connectivity and highdensity installations.
- Industrial settings where robust shielding is essential to prevent interference.
- Telecommunications infrastructure for fast and reliable communication

Cat7 S/FTP Cable

High Speed 10Gigabit Ethernet S-FTP 600 MHz Class F / Category 7 LSZH Cable is produced using 8x23 AWG Solid Bare Copper Conductors. Every pair is separately shielded – pairs in metal foil (PIMF). The twisted pairs are covered with a braided screen (S/FTP) which guarantees outstanding shielding properties and then LSZH Outer Sheath. It supports 10/100/1000Base-T, 155Mbps ATM, IEEE 802.3an (10GBase-T) Standard.

SPECIFICATION		VALUE
Conductor	AWG	23
		Solid bare Copper
Insulation	Material	SkinFoam- Skin
		Polyethylene
Jacket	External DD	7.5±0.4mm
	Material	LSZH
Individual Pair shielding		Aluminium /Polyester Foil
Braid Shield		Tinned Copper Braiding

Features

- Complies to ANSI/TIA-568.2-D Category 6A & ISO/IEC 11801 Class F
- Fire Rating as per IEC 60332-1
- Full Power Sum Performance
- Supports 10Gigabit Ethernet to a full 100m up to 600 MHz
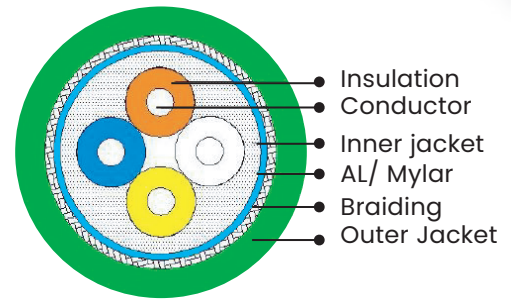- Excellent Shielding prevents Alien Crosstalk

Application

- High-speed data networking in office environments.
- Data centers for server connectivity and highdensity installations.
- Industrial settings where robust shielding is essential to prevent interference.
- Telecommunications infrastructure for fast and reliable communication

PROFINET Cable

PROFINET, as an industrial Ethernet communication protocol, has different variants and profiles that cater to various industrial automation needs and application requirements. These different types of PROFINET are designed to address specific aspects of industrial automation and offer varying levels of performance and functionality.

- Insulation
- Conductor
- Inner jacket
- AL/ Mylar
- Braiding
- Outer Jacket

SPECIFICATION		VALUE
Conductor	AWG	22
	Material	Stranded Bare Copper
Insulation	Material	HDPE
Jacket	External DD	6.5±0.3mm
	Material	PVC (Inner) PVC(Outer)
Cabling	Four Wires Stranded together to a quad	

Features

- Multiple layers of shielding to protect against electromagnetic interference (EMI) and radio frequency interference (RFI) that can disrupt communication signals.
- Cables are built to withstand the harsh conditions found in industrial environments, including exposure to dust, moisture, chemicals,and physical stress.
- PROFINET cables use twisted pair wiring, which helps reduce interference and crosstalk between data lines Maximum throughput, reliability and performance.
- Supports high data rates, so the cables are designed to handle the increased bandwidth requirements of industrial automation systems.
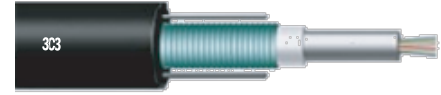
Application

- Factory automation and control systems.
- Process automation and control in chemical, petrochemical, and manufacturing industries.
- Robotics and motion control systems.
- Machine vision and surveillance systems.

Industrial Grade Fiber Optic Cable

The Industrial grade Outdoor rated fiber optic cables are designed for use in harsh environments where durability and reliability are essential Constructed with PBT Multi loose tube with colored fiber cores. The constructions are of water-blocking gel material with Non-Metallic Central Strength member & ECCS armoring. This cable has HDPE outer jacket makes it perfect for outdoor applications.

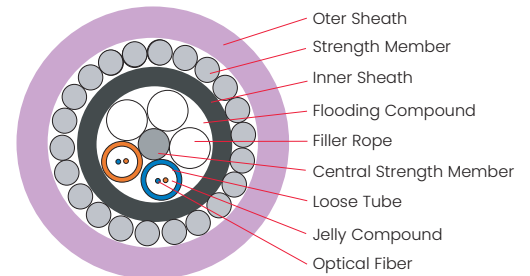| SPECIFICATION	VALUE
Fiber Count	6-96F
Construction	Unitube/Multitube
Armoruing	Corrugated, Chrome Plated (ECCS), Steel tape Corrugated, Chrome Plated (ECCS), Steel tape
Outer Sheath	HDPE UV Resistance
Tensile Strength (Long Term)	2500N
Tensile Strength (Short Term)	4000N
Bend Radius	20D
Kink Radius	10D
Crush Resistance (Short)	4000N/100mm
Crush Resistance (Long)	3000N/100mm
Impact Resistance	10 Nm
Torsion Strength	±180 degree

Features

- Complies to ANSI/TIA568.3-D, ITU-T G652.D, Telcordia GR-20, IEC 60794-2/ 60794-3-10
- HDPE jacket
- ECCS Armoring
- Water proof layer & excellent moisture resistance provided
- Excellent consistence performance

Fiber Optic Armoured Cable

The Industrial grade Outdoor rated fiber optic cables are designed for use in harsh environments where durability and reliability are essential Available in Single Mode Multi Loose Tube, Double Sheath, Steel Rod Armored optical fiber cables are prefect for direct burial applications. We supply Multi Loose Tube of 6 to 24 fiber capacity. These cables are perfectly suited for both gigabit Ethernet and 10 gigabit Ethernet plant network and backbone applications.

SPECIFICATION	VALUE
Fiber Count	6-24F
Construction	Multitube
Armoruing	Steel Rod Armoring
Outer Sheath	HDPE UV Resistance
Tensile Strength (Long Term)	1000N
Tensile Strength (Short Term)	4000N
Bend Radius	20D
Kink Radius	10D
Crush Resistance (Short)	4000N/100mm
Crush Resistance (Long)	1000N/100mm
Impact Resistance	10 Nm
Torsion Strength	±180 degree

Oter Sheath
Strength Member
Inner Sheath
Flooding Compound
Filler Rope
Central Strength Member
Loose Tube
Jelly Compound
Optical Fiber

Features

- Complies to ANSI/TIA568.3-D, ITU-T G652.D, Telcordia GR-20, IEC 60794-2/ 60794-3-10
- HDPE jacket
- Water proof layer & excellent moisture resistance provided
- Excellent consistence performance

Industrial Ethernet Patching solutions

IP68 Rated Copper Patch Cord – C6

Category 6 Shielded IP68 rated Industrial Grade Patch Cords are used for rugged application for Machine or Equipment connectivity. By screw fixing with the waterproof coupler and keystone modules, it provides a safe and reliable network environment for users. It can work with IP44 faceplate or surface mount boxes. The Rigid Industrial category 6 Networking products can be used for multiple applications such as military networking, pharmaceutical laboratories or some units under harsh environments

SPECIFICATION	VALUE
Type	Industrial Grade, RJ 45
Cable Type	STP
IP rated	IP68
Conductor	26AWG
Gold Plated	50 micron

Features

- Excellent dust proof and water proof performance
- IP68 Protection
- Multi- style options
- Plug is designed with tail cable jacket to prevent cable from being folded
- Compliant to ANSI/TIA/EIA 568.2-D

IP68 Rated Copper Patch Cord – Cat 6A

Category 6A S/FTP Industrial Grade IP68 Patch Cords are used for rugged application for IP camera or antennas. By screw fixing with the waterproof coupler and keystone modules, it provides a safe and reliable network environment for users. It can work with IP44 faceplate or surface mount boxes. The Rigid Industrial category 6A Networking products can be used for multiple applications such as military networking, pharmaceutical laboratories or some units under harsh environments

SPECIFICATION	VALUE
Type	Industrial Grade, RJ 45
Cable Type	STP
IP rated	IP68
Conductor	26AWG
Gold Plated	50 micron

Features

- Excellent dust proof and water proof performance
- IP68 Protection
- Multi- style options
- Plug is designed with tail cable jacket to prevent cable from being folded
- Compliant to ANSI/TIA/EIA 568.2-D

IP68 Rated Industrial Grade Fiber Patch Cord

The IP 68 rated Rugged Fiber Optic Patch cords are basically a Fiber Optic Patch Cords suggested for more rugged harsh environments. The spiral steel tape provides additional crush resistant and rodent attack prevention. The patch cord comes in many variations in terms of fibers, cables and connectors.

SPECIFICATION	VALUE
Fiber Count	2
Fiber Type	G.657A1
Tight Buffer Fiber OD	0.80±0.05mm
Inner Sheath Material	LSZH
Inner Sheath OD	2.0±0.1 mm

Features

- Good mechanical and temperature characteristics.
- Small diameter, light weight, easy to connect, and support large capacity data transmission.
- The aramid fiber is deployed to enhance the tensile strength of optical cable, which is more suitable for long distance cable.
- IP68 water, dust proof and corrosion resistant
- Outer jacket material has the advantages of water proof, flame retardant, environmental protection.
- Compliant to ANSI/TIA/EIA 568.3-D

Industrial Ethernet Patching solutions

IP Rated Industrial Grade Copper Coupler C6

Shielded 180° Industrial Grade IP68 RJ45 bulkhead coupler are used for rugged application. The waterproof IP68 bulkhead couplers are designed and manufactured to comply with test requirements as defined per ISO 11801 2nd Edition and ANSI / TIA-568.2-D standard.

SPECIFICATION	VALUE
Type	Industrial Grade,RJ 45
Contact Compatibility	Accommodates 22 to 24AWG solid"
IP rated	IP68
Cable diameter accommodate	5.5mm to 7.0mm
Insertion Loss	750 mating
Material Housing	PBT+GF,UL94V0

Features

- Excellent dust proof and water proof performance
- IP68 Protection
- Fit with IP44 faceplate
- Multi- style options

IP Rated Industrial Grade Copper Coupler C6A

Shileded 180° Industrial Grade IP68 RJ45 bulkhead coupler are used for rugged application. The waterproof IP68 bulkhead couplers are designed and manufactured to comply with test requirements as defined per ISO 11801 2nd Edition and ANSI / TIA-568.2-D Standard.

SPECIFICATION	VALUE
Type	Industrial Grade,RJ 45
Contact Compatibility	Accommodates 22 to 24AWG solid"
IP rated	IP68
Cable diameter accommodate	5.5mm to 7.0mm
Insertion Loss	750 mating
Material Housing	PBT+GF,UL94V0
Shielded Case	Brass, Nickel Plated

Features

- Excellent dust proof and water proof performance
- IP68 Protection
- Fit with IP44 faceplate
- Multi- style options

DIN Rail Mountable Solutions

DIN Rail mount fiber patch panel is designed either to support direct termination or fusion splicing of the fibers and Copper The compact size of the DIN Rail mount patch panel helps to save space especially when it is mounted within enclosures or cabinet with other DIN Rail mount equipment. The panel can support upto 24F fiber and 8Port Copper Unshielded and Shielded and can be installed within PLC Panel and Network Racks on the plant floor

SPECIFICATION	VALUE
Material	SPCC (Cold rolled steel)
Material thickness	1mm
Dimension (WxDXH)	154.5 x 136 x 30mm
Color	Siemens Grey
Connector Type	LC/SC/ST/ Keystone Shielded & Unshielded
Operating Temperature	-10ºC to +70ºC

Features

- Space-Saving installation
- DIN-Rail mountable
- Up to 12 duplex ports Fiber
- Up to 8 Port- Copper
- Compliant to ANSI/TIA/EIA
- 568.3-D, ANSI/TIA/EIA 568.2-
- D and ISO/IEC 11801 standard

IP Rated Angled Shielded Field Termination Plug C6A

Category 6A Angled Field Terminate Plug are designed for use on Solid cable assemblies and strand conductors of sizes from AWG 23 through AWG 26. The angled design of the plug allows for better cable management in tight spaces or areas where straight connectors may cause cable strain or protrusion. The angled orientation helps route the cable in a more organized and space-efficient manner. This plug design accommodates large diameter cabling in the form factor of a standard RJ45 plug. FTP offers a distinct approach for connectivity for an IP enabled IoT devices/ PoE enabled devices. Developed under MPTL for delivering custom-length cables to be terminated on field locations for direct connections to end point devices. FTP exceeds all Category 6A performance requirements to easily support high-speed machine applications like 5GHz Wi-Fi and High resolution Video cameras

SPECIFICATION	VALUE
Housing Material	Zinc–Alloy fully shielded
IDC Contact	T=0.4mm phosphor bronze, Sn over nickel plating
PoE	PoE++ Type 4
Compatible Cable	26-23 AWG, OD :6- 8.5mm

Features

- Complies to EN 50173 &ISO/IEC 11801, IEC 60512- 99-001:2012 & IEC 60512-9-3:2011
- Permanent Link & Channel ANSI/-TIA-568.2-D
- IP20 rated Field Terminable Plug
- Toolless deign
- PoE++ Application support
- 90° Shielding for better EMI/EMC
- Qualified Screened Class 6A Component

IP Rated Shielded Field Termination Plug C6A

Category 6A Field Terminate Plug are designed for use on Solid cable assemblies and strand conductors of sizes from AWG 23 through AWG 26. This plug design accommodates large diameter cabling in the form factor of a standard RJ45 plug. FTP offers a distinct approach for connectivity for an IP-enabled IoT devices/ PoE enabled devices. Developed under MPTL for delivering custom-length cables to be terminated on-field locations for direct connections to end point devices. FTP exceeds all Category 6A performance requirements to easily support high-speed machine applications like 5GHz Wi-Fi and High resolution Video cameras

SPECIFICATION	VALUE
Housing Material	Zinc–Alloy fully shielded
Plug Contact	T==0.35mm phosphor bronze,
Contact Area	Gold over nickel plating
IDC Contact	T=0.4mm phosphor bronze,
	Sn over nickel plating

Features

- Complies to EN 50173 &ISO/IEC 11801, IEC 60512- 99-001:2012 & IEC 60512-9-3:2011
- Permanent Link & Channel ANSI/-TIA-568.2-D
- IP20 rated Field Terminable Plug
- Toolless deign
- PoE+ Application support
- 360° Shielding for better EMI/EMC
- Qualified Screened Class 6A Component

PROFINET Shielded Field Equipment Plug

PROFINET Field Terminate Plug are designed for use on PROFINET Cables This plug design accommodates large diameter cabling in the form factor of a standard Cat5e RJ45 plug 2 pair.

SPECIFICATION	VALUE
Housing Material	Zinc–Alloy fully shielded
IDC Contact	T=0.4mmphosphor bronze, Sn over nickel plating
Insulation Resistance	500 Mohms minimum
Contact Resistance	20 Mohms minimum

Features

- Complies to ANSI /TIA 568.2-D, EN 50173-1 & ISO/IEC 11801 2-2, IEC 60603-7-5
- supports PoE & PoE++ Application
- Compatible with Industrial Ethernet cable
- Field Bus
- Supports high data rates, so the cables are designed to handle the increased bandwidth requirements of industrial automation systems.

M12 X-Coded Male Cable Connector

M12 X-coded male cable connector is a type of industrial electrical connector that is commonly used in automation, manufacturing, and industrial environments. The "M12" designation refers to the connector's size, which is 12 millimeters in diameter. The "X-coded" designation indicates a specific type of M12 connector that is designed for high-speed data transmission, typically for use with Ethernet or other data communication protocols..

SPECIFICATION	VALUE
Housing Material	Die Casting
Nut	Brass Nickel Plated
IDC Contact	Phosphor Bronze gold over nickel plated"
Shield Spring	Phosphor Bronze gold over nickel plated"

Features

- Complies to ISO/IEC 11801 IEC 61076-2-109
- PoE++ Application support
- Industrial Application

DIN Rail Bracket

Din Rail Mountable bracket for shielded Keystone jack to be mounted on the standard Din rail. The grounding makes contact with the outer casing of the keystone jack to give a secure earthing point through to the Din Rail. Supports unshielded & shielded Cat5e, Cat6, Cat6A, LC, SC, ..etc Keystone Modules.

DIN Rail Module

Din Rail Mountable Module for shielded Keystone jack to be mounted on the standard Din rail. The grounding makes contact with the outer casing of the keystone jack to give a secure earthing point through to the Din Rail. Supports unshielded & shielded Cat5e, Cat6, Cat6A, LC, SC, ..etc Keystone Modules.

IP44 Rated Faceplate

IP44 Rated Faceplate allows mounting Keystone Outlets to suit all the installation requirements for The Plant floor application. The standard face plates are available in stainless steel. Available in 1, 2 and 4 port options.
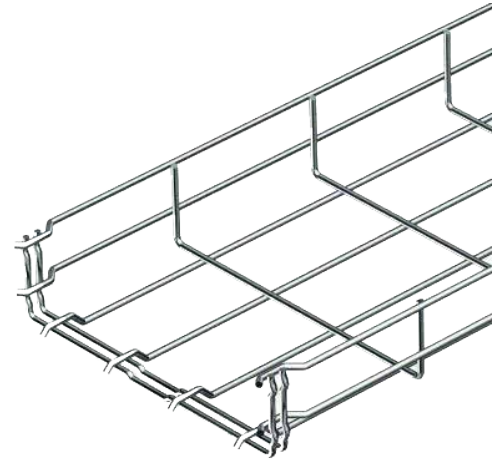

IP68 rated Surface Mount Box

The IP68 rated Industrial Surface Mounting boxes guarantees protection in water up to 1.5m deep or the same period of time. Both are resistant to dust, prevent the network parts from moisture, dirt, and insects for quality connections. With water-proof cable glands, it provide better waterproof and Anti-corrosion performance, protecting your instruments even under the adverse environment. Supports unshielded & shielded Cat5e, Cat6, Cat6A, LC, SC, ..etc Keystone Modules.

Over Head Mesh System (OHMS)

Over Head Mesh System (OHMS) utilizes high quality mechanical strength wires welded in a 2" x 4" grid pattern, producing a strong, versatile & economical cable support system & is designed for maximum flexibility. These prefabricated fittings are a time-saving and cost effective and can be easily field cut bent, assembled & can have convenient cable drops.

The Over Head Mesh System is designed to route and manager copper data cables within the plant floor and connected buildings for industrial automation application. In addition OHMS provide a segregated copper and fiber cabling system and available in Electroplated Zinc finish after fabrication.

SPECIFICATION	VALUE
Material Straight Section	Steel
Sizes	"2" to 24"(Length),1.5" to 6"(Depth)"

Features

- Faster Deployment
- Time-saving and cost effective
- Field fabrication for Easy transitions & Adaptability
- Excellent ventilation
- Maximum strength for minimum weight
- Reduce dust retention and improve hygiene of the working environment.
- Ideal for routing and supporting cables throughout fiber cable networks.
- OMHS can be installed from the ceiling, on the wall or over the Network/ Server Cabinets using different accessories

Rack Solutions

Outdoor Rack

The IP55 rated Outdoor cabinets are designed to provide a safe solution to install telecommunications equipment within the plant floor and outdoor applications. These cabinets are offering protection against different weather condi-tions, dust and vandalism.

SPECIFICATION	VALUE
Dimension(H*W*D)	500 x600 x600mm
Temperature	-30° C to +75°C
Material	Galvanized Steel Single Wall (1.2mm Thickness)
Application	Outdoor
Structure	Welded with Outdoor Silicon Sealant with locking provision
Cable Entry	At bottom through PG Glands
Grounding Protection	Copper Stud Wire
No of Fans option	2
Load Capacity	45-55Kg
Air Pressure	70kPa -106kPa

Features

- Solid structure with the advantages of good performance of dust proof, pleasing and neat appearance
- Material: Galvanized steel with anti corrosion outdoor powder coating
- Standard color: RAL7035.
- Wall mount & Pole Mount Provision
- IP rating: IP55

Outdoor Rack with AC

The IP55 Rated Outdoor floor mount Air conditioned cabinets are designed to provide a safe solution to install telecommunications equipment within the plant floor and outdoor applications. These cabinets are offering protection against different weather condi-tions, dust and vandalism.

SPECIFICATION	VALUE
Dimension(HXWXD)	1150 x875 x1125mm
Temperature	-30°C to +75°C
Air Pressure	70kPa -106kPa
Air Conditioner	
Cooling Current	2.5A/3.5A
Power Supply	"220VAC 15%. 50/60Hz"
Cooling Capacity (rated)	1300W@L35/L35
Power Consumption(rated)	565W@L35/L35
Heating	1000W
Airflow	500m /h
Working Temperature Range	-40°C ~+55°C
Max Noise Level	65dB(A)
IP Grade	IP55
Size (Wx Hx D)	446*746*200mm

Features

- Solid structure with the advantages of good performance of dust proof, pleasing and neat appearance
- Material: cold-rolled steel with powder coating
- Standard color: RAL7035.
- IP rating: IP55
- 18U available height for equipment
- Four 19" mounting rails are adjustable. The fixed distance between the front rail to rear rail to be minimum
- High security digital combination lock provided on every cabinet ensures the safety of the fibers. and this lock can be opened by the master key or password
- Custom cover on the outside of the lock, one padlock can be added inside for double security
- One 10-hole M6 grounding bar.
- 2 units of Air conditioner (AC1300W) fixed on the front door and rear door.
- Fan is available upon request (optional)
- PDU or other devices are available upon request (optional)

Industrial Grade media Converted

3C3® Industrial Grade Managed PoE Gigabit Media Converter that provides 4*10/100/1000 Base-T(X) With IEEE 802.3 af/at PoE compliant (30W/Port) + 1*10/100/1000Base-TX RJ45 Port and 2*100/1000 SFP Slot

SPECIFICATION	VALUE
IP Protection	IP30
Dimensions (W x H x D)	54 x 142 x 99mm
Weight	Unit weight: 0.95kg
Mounting	DIN-Rail Mounting, Wall Mounting

Features

- Support 4*Port 10/100/1000 Base- T(x) IEEE 802.3af/at ComplianPoE,30W/port
- 1Port 10/100/1000 Base-TX RJ 45 Port
- 2-Port 100/1000 SFP Slots
- Power Input : 48-55VDC in 6- Pin terminal Block
- IP30 Protection
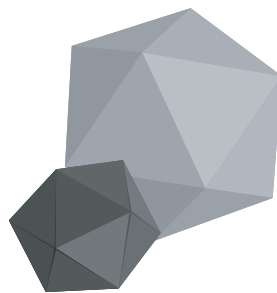- DIN Rail or Wall mountable

PoE Surge Protector Outdoor

Power over Ethernet surge protector is designed for POE power supply equipment, are widely used in the areas of wireless coverage, security monitoring etc. to protect the communication equipment's POE port line from the impact of lightning Electromagnetic pulse, lightning electromagnetic pulse, switching overvoltage.

Features

- Multi. Protection circuits, Gas-Tube+ TVS technology
- Dual protection in Common module and different module
- TVS array technology, low capactance
- Multi-Strike Capability
- IP65 rated

3C3®

10 YEARS OF
#CONNECTIVITYWITHEXCELLENCE

THANK YOU FOR BEING AN
INTEGRAL PART OF OUR JOURNEY.
YOUR SATISFACTION IS WHAT MOTIVATES
US TO REACH GREATER HEIGHTS!

3C3

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