“FOR MORE
SAFETY
IN THE NETWORK

emo systems

PRODUCT CATALOGUE

ELECTRONICS . MECHANICS . OPTICS

www.emosystems.de

CONTENTS

EMO SYSTEMS GMBH

We develop and manufacture our products right here in the heart of Berlin, Germany. Our certified suppliers are also located in the region, strengthening the local industry with lasting effects, and creating a very short supply chain. All of this makes our operations environmentally friendlier, saves resources, and gives us the ability to quickly respond to your needs.

We are interested in long-term, sustainable relationships with our customers. Therefore our core business focuses are: a high level of quality control requirements, supported by an active quality management system; unconditional reliability; fast response times; and most importantly, good and flexible working conditions for our employees.

In the interest of independence and stability in the wake of international financial crises, we have financed the company exclusively with our own resources since its founding. We invest heavily in the development of the company, especially in product improvement and the development of new products, as well as technology development in our fields of activity.

PRODUCT **FAMILIES**

Network Isolators

Foot Switches

Isolation Transformers

Machine Vision Systems

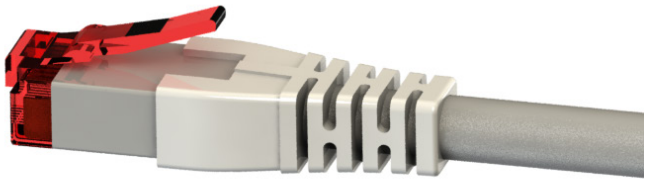
emosafe

emoswitch wireless

emovision

NETWORK ISOLATORS

100% INSPECTION IN OUR QUALITY CONTROL PROCESS

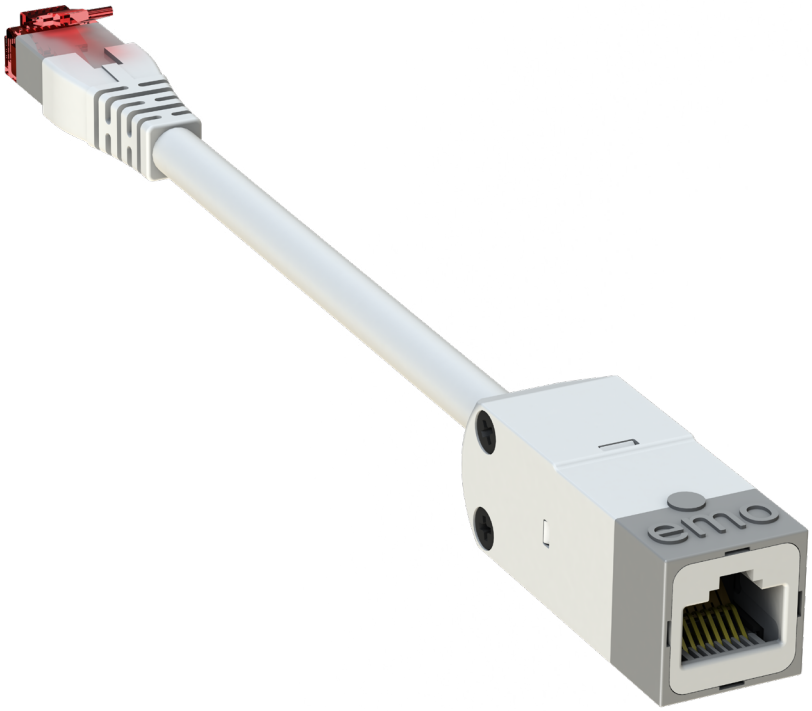


One of our central product lines are Network Isolators. We offer the largest range of Network Isolators worldwide, with performance levels that far exceed those of competing products. Our Network Isolators are engineered and manufactured here in Germany, and meet the requirements of IEC 60601-1. They are also listed as Recognized Components by UL (Underwriters Laboratories).
Network Isolators developed by EMO Systems are galvanic isolation devices which are used to protect people and devices from dangerous voltages arising from the network periphery. Their main uses are in the field of medical technology.

SCOPES OF APPLICATION

- Medical electrical devices whose operation is permitted only when existing signal interfaces present a standards- compliant means of separation. Hence the frequently used term “medical network isolator”.
- Sensitive measuring and monitoring devices in electrical testing laboratories, which are connected through an Ethernet network to a control centre, and need to be protected from transient voltages and potential voltage differences.
- Computer systems which are electrically connected over long distances via Ethernet cabling, where potential equalising currents need to be prevented.
- Audio applications, to reduce the transmission of low frequency alternating currents (AC hum) over the network connection.
- Applications where valuable or especially vulnerable devices need to be protected from overvoltage and line noise from peripheral network equipment.

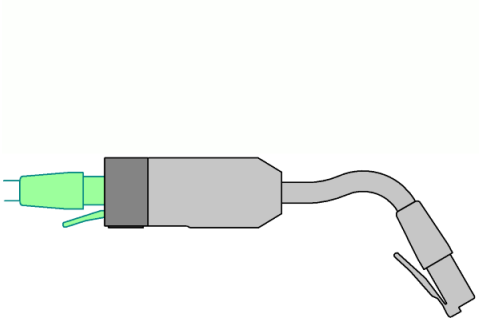
HIGH-PERFORMANCE



HIGH-PERFORMANCE

The type EMOSAFE EN-66e galvanically isolates every conductor (specifically the data and shield conductors) between devices connected via a copper-based Ethernet network. He prevents current flow resulting from differences in electrical potentials, and also protects connected devices and their users from stray external voltages. He's an efficient and compact 10 Gigabit Ethernet network isolator, characterised by exceptional Ethernet performance and a very high dielectric withstanding voltage. The construction with socket and cable stub provides the physical functionality of an extension cable. Low-frequency signal components are strongly attenuated, protecting connected devices from ground loops.

- 10 Gigabit Ethernet
- UL Recognized Component
- RoHS compliant
- 5 kV AC dielectric strength
- 8,5 kV DC dielectric strength
- Extremely low insertion losses; allowing total cable lengths of 100 meters
- ISO/IEC 11801 Class E_A as well as TIA/EIA-568 Cat 6A Ethernet Performance in Channel Links

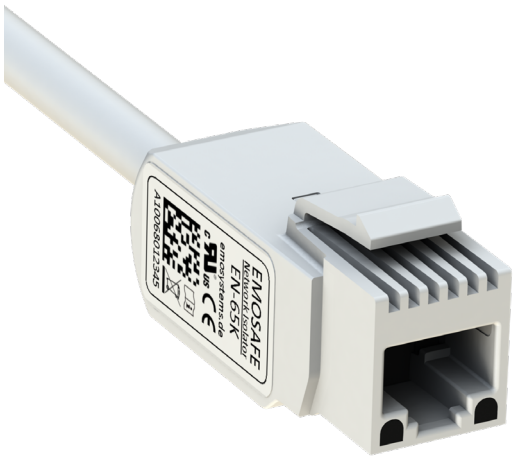


EMOSAFE
EN-66e

SnapFit, Gigabit Ethernet

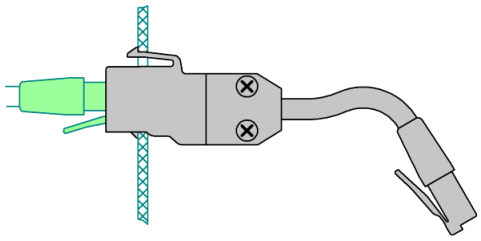
Connection	RJ45 Jack, straight
	RJ45 Plug, cable
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class E_A
Insertion Loss (typical)	see data sheet and white paper
Return Loss (typical)	see data sheet and white paper
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~26 g

HIGH-PERFORMANCE



The type EMOSAFE EN-66K galvanically isolates every conductor (specifically the data and shield conductors) between devices connected via a copper-based Ethernet network. He prevents current flow resulting from differences in electrical potentials, and also protects connected devices and their users from stray external voltages. He's an efficient and compact 10 Gigabit Ethernet network isolator, characterised by exceptional Ethernet performance and a very high dielectric withstanding voltage. As a Keystone module, it can be used in all Keystone-compatible outlet sockets, patch panels, and panel cut-outs. The construction with socket and cable stub provides the physical functionality of an extension cable. Low-frequency signal components are strongly attenuated, protecting connected devices from ground loops.

- 10 Gigabit Ethernet
- UL Recognized Component
- RoHS compliant
- 5 kV AC dielectric strength
- 8,5 kV DC dielectric strength
- Extremely low insertion losses; allowing total cable lengths of 100 meters
- ISO/IEC 11801 Class E_A as well as TIA/EIA-568 Cat 6A Ethernet Performance in Channel Links



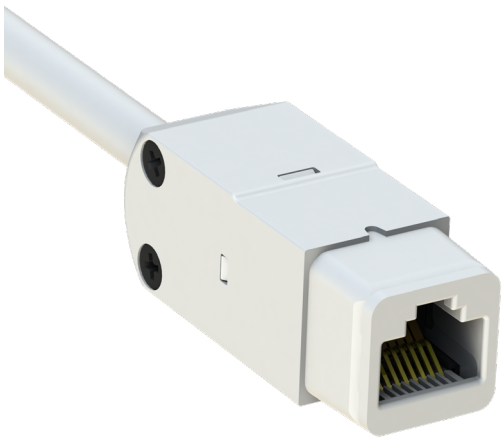
EMOSAFE
EN-66K

Keystone, high performance

Connection	RJ45 Jack, straight
	RJ45 Plug, cable
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	100 Mbit/s, 1000 Mbit/s, 10 Gbit/s
ISO 11801 Performance Category	Class E_A
Insertion Loss (typical)	see data sheet and white paper
Return Loss (typical)	see data sheet and white paper
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~26 g

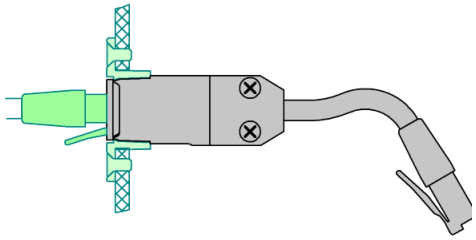
Accessories see page 80

HIGH-PERFORMANCE



The type EMOSAFE EN-66S galvanically isolates every conductor (specifically the data and shield conductors) between devices connected via a copper-based Ethernet network. He prevents current flow resulting from differences in electrical potentials, and also protects connected devices and their users from stray external voltages. He's an efficient and compact 10 Gigabit Ethernet network isolator, characterised by exceptional Ethernet performance and a very high dielectric withstanding voltage. The construction with socket and cable stub provides the physical functionality of an extension cable. Low-frequency signal components are strongly attenuated, protecting connected devices from ground loops.

- 10 Gigabit Ethernet
- UL Recognized Component
- RoHS compliant
- 5 kV AC dielectric strength
- 8,5 kV DC dielectric strength
- Extremely low insertion losses; allowing total cable lengths of 100 meters
- ISO/IEC 11801 Class E_A as well as TIA/EIA-568 Cat 6A Ethernet Performance in Channel Links



EMOSAFE
EN-66S

SnapFit, high performance

Connection	RJ45 Jack, straight
	RJ45 Plug, cable
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	100 Mbit/s, 1000 Mbit/s, 10 Gbit/s
ISO 11801 Performance Category	Class E_A
Insertion Loss (typical)	see data sheet and white paper
Return Loss (typical)	see data sheet and white paper
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~26 g

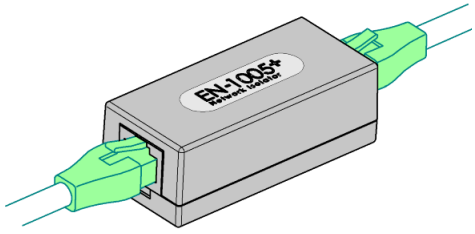
Accessories see page 79

SELF-ENCLOSED

SELF-ENCLOSED

The EN-1005+ is equipped with transient voltage suppression (TVS) diode circuity. While conventional network isolators can only block voltage spikes that occur simultaneously at all signal lines (arising, for example, from potential voltage differences), potentially dangerous or damaging differential voltages on individual signal lines are clipped by the TVS circuity, preventing these voltages from reaching Ethernet devices, operators, and patients.
A special feature of EN-1005+ is the possibility to have your very own product labeling - perfect for OEM companies.

- High performance Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5.0 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D Ethernet



EMOSAFE
EN-1005+

Standalone, Gigabit Ethernet

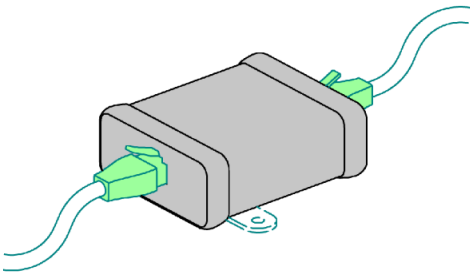
Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.7 dB @ 100MHz
Return Loss (typical)	20 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~30 g

Accessories see page 81

SELF-ENCLOSED

EMOSAFE EN-30 Network Isolators disconnect every electrically conducting connection (specifically the data and shield conductors) between devices connected together via a copper-based Ethernet network. The Network Isolators prevent current flow resulting from differences in electrical potentials, and also protect connected devices and their users from stray external voltages and power surges. In the elegant aluminum housing, this network isolator also scores with its rugged design and data rates of 10, 100, and 1000 Mbit/s.

- Gigabit Ethernet
- IEC 60601-1 compliant
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Hardwearing aluminium housing



EMOSAFE
EN-30

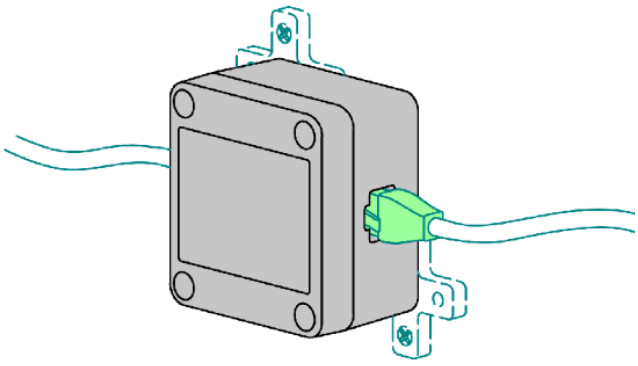
Standalone, Gigabit Ethernet

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	1.5 dB @ 100MHz
Return Loss (typical)	8.0 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP40
Weight	~75 g

SELF-ENCLOSED

The EMOSAFE EN-20G Network Isolator facilitates the safe Ethernet connection of MEs product within the patient environment. The EN-20G fulfils all the constructional requirements of IEC 60601-1, and forms two Means Of Patient Protection (2 MOPP) within the network interface, as well as practically eliminating the risk to patients and operators arising from electrical shocks created by stray voltages present on the network connection.

- Gigabit Ethernet
- IEC 60601-1 compliant
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Optionally usable mounting brackets



EMOSAFE
EN-20G

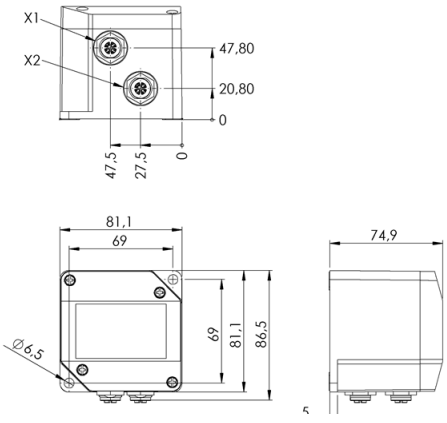
Standalone, Gigabit Ethernet

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	1.5 dB @ 100MHz
Return Loss (typical)	8.0 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP40
Weight	~95 g

SELF-ENCLOSED

The type EMOSAFE EN-95 interrupts the electrically conductive connection (wires and shield) between devices that are connected to each other via copper-guided Ethernet cabling. He prevents equipotential bonding currents and protect connected devices and their users from transient over voltages. He protects connected terminal devices against the hazards described in section 3. The EN-95 fulfils all design requirements of DIN EN 50155.

- Gigabit Ethernet
- DIN EN 50155 compliant
- RoHS compliant
- 4,0 kV AC dielectric strength
- 5,6 kV DC dielectric strength
- ISO 11801 Class D Performance
- Extremely low insertion loss

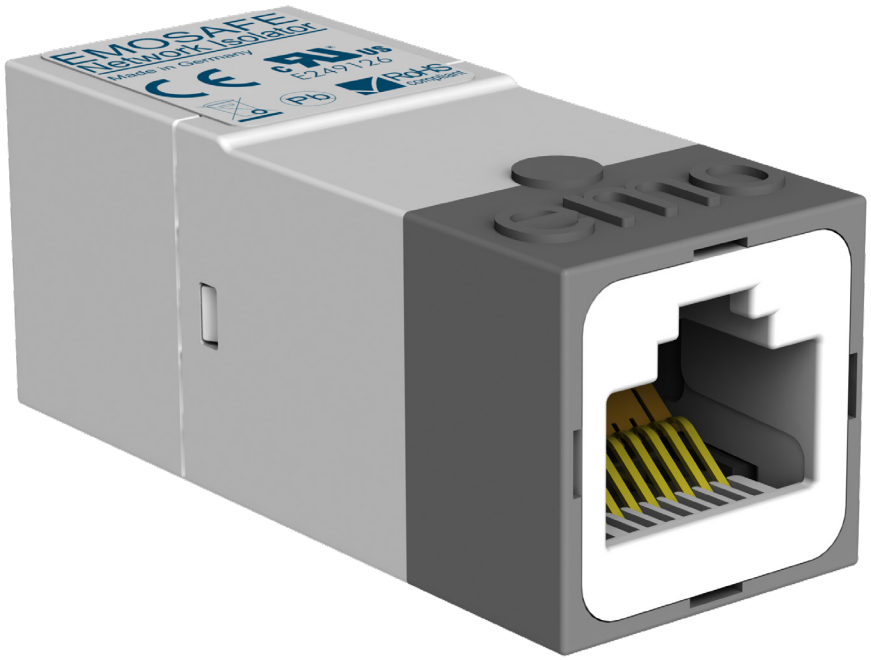


EMOSAFE
EN-95

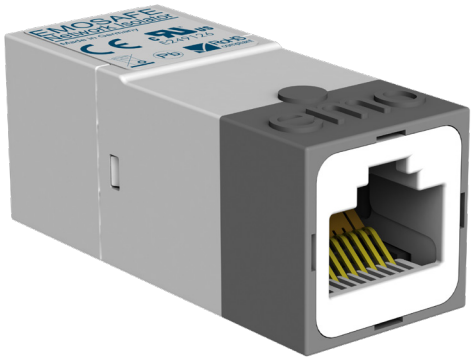
Standalone, Gigabit Ethernet

Connection	M12X-Jack, 8-pole, straight (both sides)
	RJ45 Jack, angled
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0,7 dB @ 100 MHz
Return Loss (typical)	20,0 dB @ 100 MHz
Overvoltage Category according to IEC 60664-1	III
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP65
Weight	~347 g

ULTRA-COMPACT

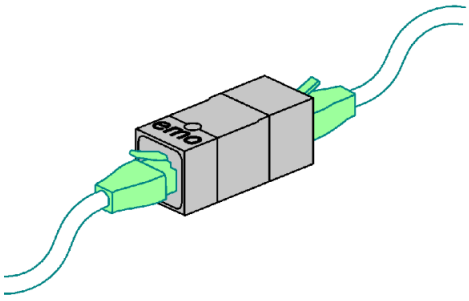


ULTRA-COMPACT



Above all, the EMOSAFE EN-70e Network Isolators are characterized by their particularly small installation size and their universal applicability. Built into a medical electrical (ME) product, the EMOSAFE EN-70 Network Isolator facilitates the safe Ethernet connection of this ME product within the patient environment.

- Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4.6 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D

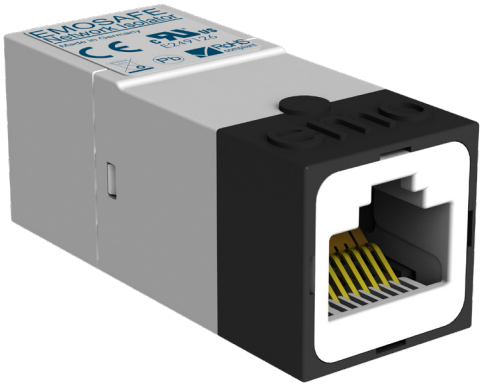


EMOSAFE
EN-70e

Standalone, Gigabit Ethernet

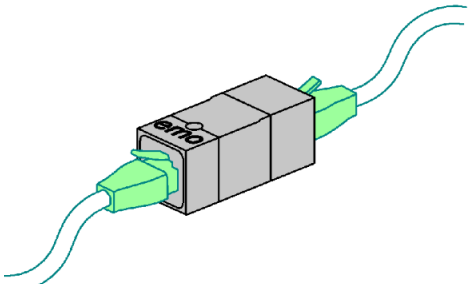
Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	4500V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	1.0 dB @ 100MHz
Return Loss (typical)	17 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~12 g

ULTRA-COMPACT



Above all, the EMOSAFE EN-70HD Network Isolators are characterized by their particularly small installation size and their universal applicability. Built into a medical electrical (ME) product, the EMOSAFE EN-70 Network Isolator facilitates the safe Ethernet connection of this ME product within the patient environment. The EN-70HD offers a particularly effective level of device protection. Voltage spikes on individual signal conductors are eliminated by means of a supplementary TVS diode circuit. These transient voltages cannot be repressed by conventional network isolators.

- Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5.0 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D

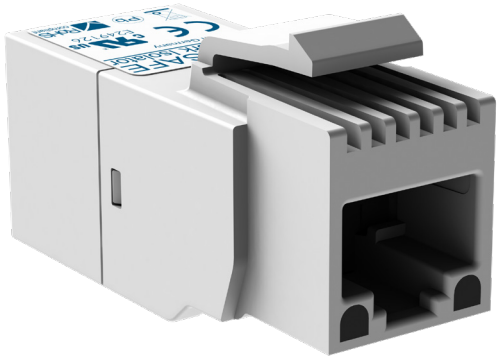


EMOSAFE
EN-70HD

Standalone, Gigabit Ethernet

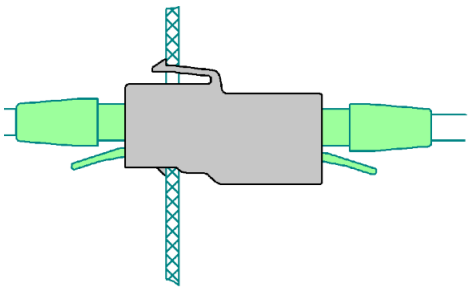
Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.7 dB @ 100MHz
Return Loss (typical)	20 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~12 g

ULTRA-COMPACT



Above all, the EMOSAFE EN-70HD-K Network Isolators are characterized by their particularly small installation size and their universal applicability. Built into a medical electrical (ME) product, the EMOSAFE EN-70 Network Isolator facilitates the safe Ethernet connection of this ME product within the patient environment. The EN-70 series offers a particularly effective level of device protection. Voltage spikes on individual signal conductors are eliminated by means of a supplementary TVS diode circuit. These transient voltages cannot be repressed by conventional network isolators.

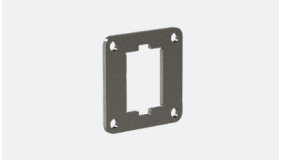
- Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5.0 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-70HD-K

Keystone, Gigabit Ethernet

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.7 dB @ 100MHz
Return Loss (typical)	20 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~12 g



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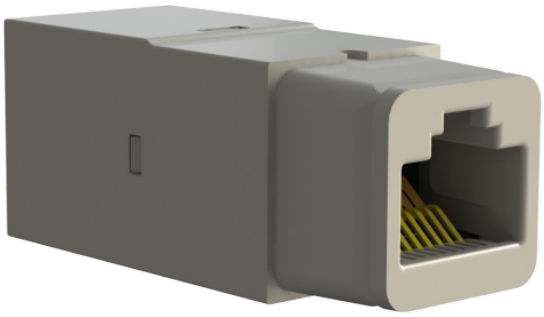
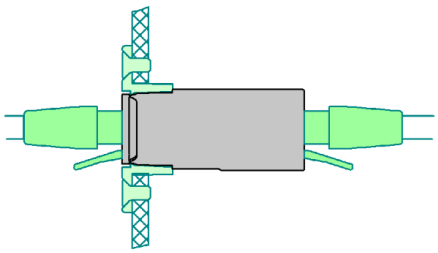
ULTRA-COMPACT



Above all, the EMOSAFE EN-70HD-S Network Isolators are characterized by their particularly small installation size and their universal applicability. Built into a medical electrical (ME) product, the EMOSAFE EN-70 Network Isolator facilitates the safe Ethernet connection of this ME product within the patient environment. The EN-70HD-S offers a particularly effective level of device protection. Voltage spikes on individual signal conductors are eliminated by means of a supplementary TVS diode circuit. These transient voltages cannot be repressed by conventional network isolators.

- Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



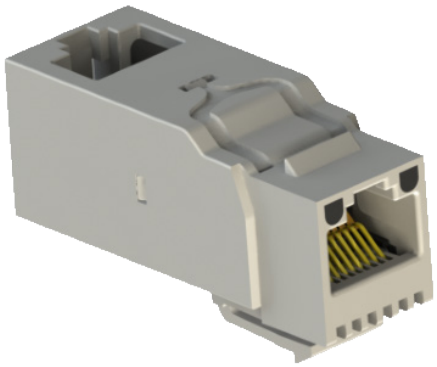
EMOSAFE
EN-70HD-S

SnapFit, Gigabit Ethernet

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.7 dB @ 100MHz
Return Loss (typical)	20 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~12 g

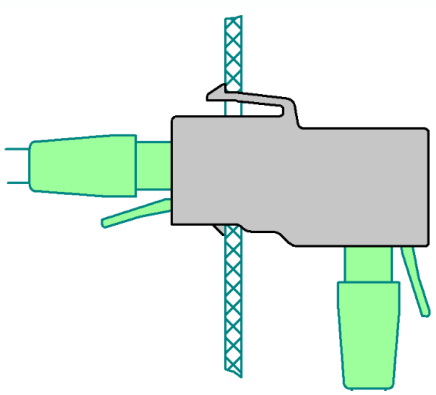
Accessories see page 79

ULTRA-COMPACT



Above all, the EMOSAFE EN-70VD-K Network Isolators are characterized by their parcularly small installation size and their universal applicability. Built into a medical electrical (ME) product, the EMOSAFE EN-70 Network Isolator facilitates the safe Ethernet connecon of this ME product within the paent environment. The EN-70VD-K offers a parcularly effecve level of device protecon. Voltage spikes on individual signal conductors are eliminated by means of a supplementary TVS diode circuit. These transient voltages cannot be repressed by convenonal network isolators.

- Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5 kV AC dielectric strength
- 8,5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-70VD-K

Keystone, Gigabit Ethernet

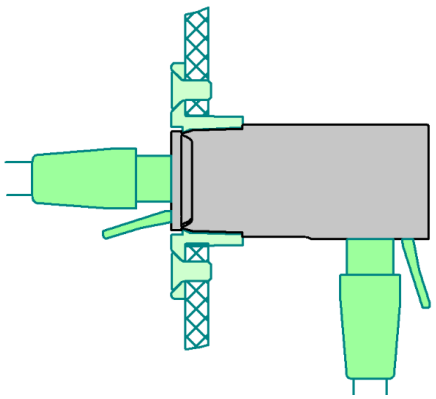
Connection	RJ45 Jack, straight
	RJ45 Jack, angled
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.7 dB @ 100MHz
Return Loss (typical)	20 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~12 g

Accessories see page 80

ULTRA-COMPACT

Above all, the EMOSAFE EN-70VD-S Network Isolators are characterized by their parcularly small installation size and their universal applicability. Built into a medical electrical (ME) product, the EMOSAFE EN-70 Network Isolator facilitates the safe Ethernet connecon of this ME product within the paent environment. The EN-70VD-S offers a parcularly effecve level of device protecon. Voltage spikes on individual signal conductors are eliminated by means of a supplementary TVS diode circuit. These transient voltages cannot be repressed by convenonal network isolators.

- Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5 kV AC dielectric strength
- 8,5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-70VD-S

SnapFit, Gigabit Ethernet

Connection	RJ45 Jack, straight
	RJ45 Jack, angled
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.7 dB @ 100MHz
Return Loss (typical)	20 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~12 g

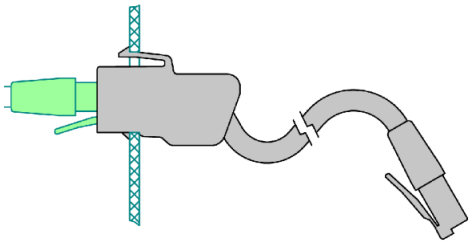
Accessories see page 79

WITH CABLE

WITH CABLE

The EMOSAFE EN-60KDS is an efficient and compact gigabit Ethernet network isolator, characterised by exceptional Ethernet performance and a very high dielectric withstanding voltage. As a Keystone module, it can be used in all Keystone-compatible outlet sockets, patch panels, and panel cut-outs. The construction with socket and cable stub provides the physical functionality of an extension cable. The EN-60KDS is further complemented by additional electrostatic discharge (ESD) and lightning strike protection. Normal network isolators do not suppress voltage spikes within individual signal lines. The EN-60KDS eliminates these spikes by means of a supplementary transient voltage suppression (TVS) diode circuit. This is particularly effective against the effects of electrostatic discharge, which can, for example, occur as cables are connected and removed.

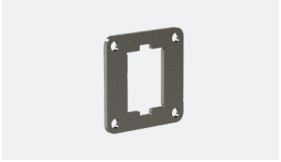
- Compact Keystone module with cable
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 6 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-60KDS

Standalone, Gigabit Ethernet

Connection	RJ45 Jack, straight
	RJ45 Plug, cable
AC Dielectric Strength @ 50Hz	6000 V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.7 dB @ 100MHz
Return Loss (typical)	17 dB @100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~22 g

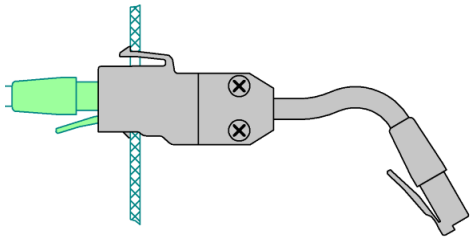


Accessories see page 80

WITH CABLE

The EMOSAFE EN-65K is designed as a keystone module and is therefore particularly suitable for installation in wall ducts and supply bridges. The EN-65K is equipped with transient voltage suppression (TVS) diode circuity. While conventional network isolators can only block voltage spikes that occur simultaneously at all signal lines (arising, for example, from potential voltage differences), potentially dangerous or damaging differential voltages on individual signal lines are clipped by the TVS circuity, preventing these voltages from reaching Ethernet devices, operators, and patients. Such differential voltage spikes can be caused, for example, by malfunctioning devices connected to the Ethernet, or also by electrostatic discharge events during the plugging processes.

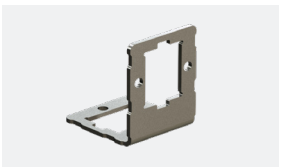
- High Performance Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5.0 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D

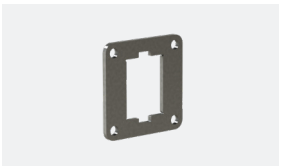


EMOSAFE
EN-65K

Keystone, Gigabit Ethernet

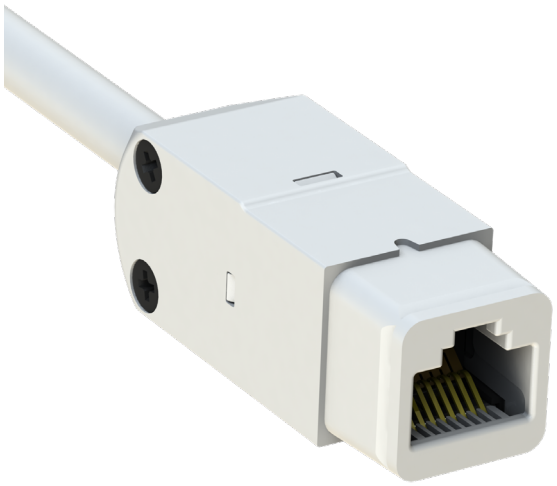
Connection	RJ45 Jack, straight
	RJ45 Plug, cable
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.5 dB @ 100MHz
Return Loss (typical)	20 dB @100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~26 g





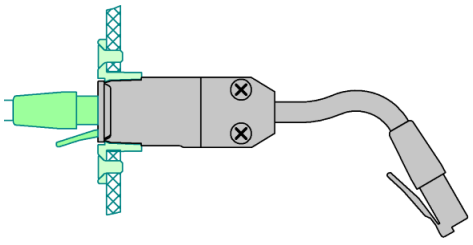
Accessories see page 80

WITH CABLE



The EMOSAFE EN-65S is designed for panel mounting. The snap-fit accessories provide both front and rear panel mounting options.The EN-65S is equipped with transient voltage suppression (TVS) diode circuity. While conventional network isolators can only block voltage spikes that occur simultaneously at all signal lines (arising, for example, from potential voltage differences), potentially dangerous or damaging differential voltages on individual signal lines are clipped by the TVS circuity, preventing these voltages from reaching Ethernet devices, operators, and patients. Such differential voltage spikes can be caused, for example, by malfunctioning devices connected to the Ethernet, or also by electrostatic discharge events during the plugging processes.

- High Performance Gigabit Ethernet
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 5.0 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



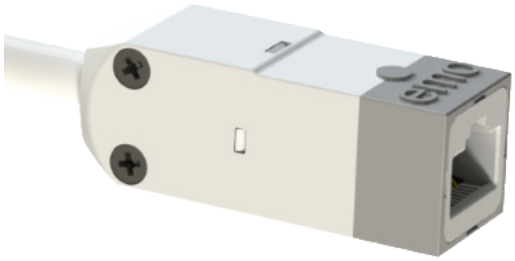
EMOSAFE
EN-65S

SnapFit, Gigabit Ethernet

Connection	RJ45 Jack, straight
	RJ45 Plug, cable
AC Dielectric Strength @ 50Hz	5000V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.5 dB @ 100MHz
Return Loss (typical)	20 dB @100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~26 g

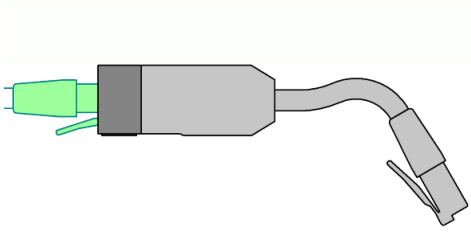
Accessories see page 79

WITH CABLE



The EMOSAFE EN-85e is a cable-terminated external network isolator equipped with an overload release (OTAR), which provides mechanical protection of the Ethernet interface in addition to the electrical protection features. A common cause of failure for potentially expensive equipment arises from mechanical damage to Ethernet sockets resulting from excessive tensile or lateral forces. These forces act upon RJ45 sockets and their supporting circuit boards, potentially damaging them beyond repair. Such forces can arise, for example, when movable Ethernet devices are moved further than their connecting Ethernet cable naturally allows, or when people accidentally trip over attached patch cables. When the EN-85e is plugged into an Ethernet socket of a device to be electrically protected, the socket is simultaneously protected against such hazards. The OTAR socket of the connected Network Isolator simply releases the Ethernet cable automatically when applied tensile forces exceed a defined limit.

- Overtension Auto-Release (OTAR)
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4.6 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D

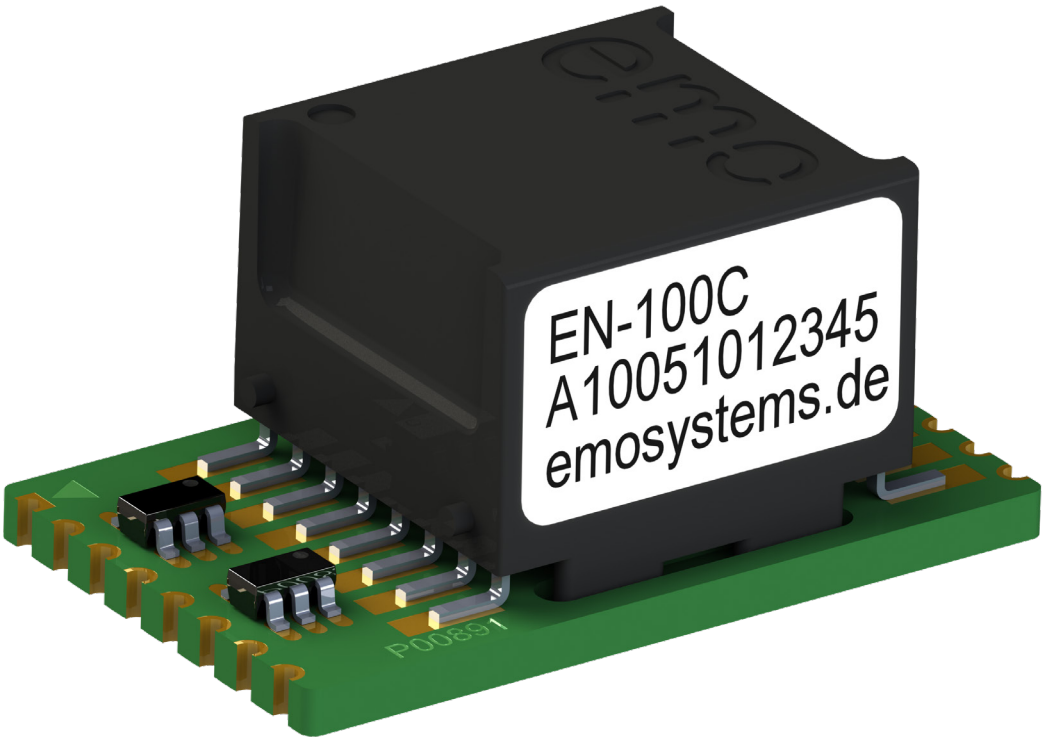


EMOSAFE
EN-85e

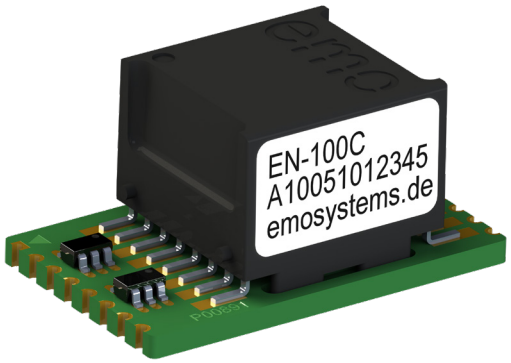
Standalone, Gigabit Ethernet

Connection	RJ45 Jack, straight
	RJ45 Plug, cable
AC Dielectric Strength @ 50Hz	4600 V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.4 dB @ 100MHz
Return Loss (typical)	17 dB @100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
EN 60529 Protection Rating	IP40
Weight	~24 g

FOR PCB ASSEMBLY

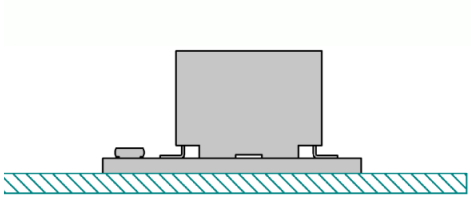


FOR PCB ASSEMBLY



EMOSAFE EN-100C Network Isolators are intended for integration into printed circuit boards (PCBs) of electronic devices requiring advanced protection. The EN-100C is soldered directly to the circuit board. Their extremely compact design allows them to be utilised in situations where there is limited physical space. Additional TVS diodes protect individual wire pairs from voltage surges.

- Ultra-compact
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4.6 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-100C

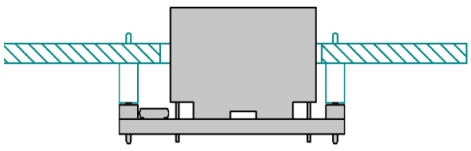
PCB Assembly, Gigabit Ethernet

Connection	Solder pads (both sides)
AC Dielectric Strength @ 50Hz	4600V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.8 dB @ 100MHz
Return Loss (typical)	17 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
Weight	~6 g

FOR PCB ASSEMBLY

EMOSAFE EN-100L Network Isolators are intended for integration into printed circuit boards (PCBs) of electronic devices requiring advanced protection. The EN-100L potentially reduces the total mounting height of the assembly by being mounted from underneath the host PCB, protruding through a corresponding recess. Due to their extremely compact design, they are still in very tight spaces usable.

- Ultra-compact
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4.6 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-100L

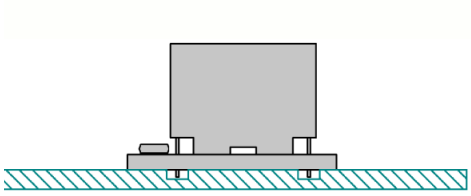
PCB Assembly, Gigabit Ethernet

Connection	pin headers (both sides)
AC Dielectric Strength @ 50Hz	4600V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.8 dB @ 100MHz
Return Loss (typical)	17 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
Weight	~6 g

FOR PCB ASSEMBLY

EMOSAFE EN-100S Network Isolators are intended for integration into printed circuit boards (PCBs) of electronic devices requiring advanced protection. The EN-100S is soldered directly to the PCB and features extra short solder terminals. Due to the extremely compact design, it can also be used in very tight spaces. Additional TVS diodes protect individual wire pairs from voltage surges.

- Ultra-compact
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4.6 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-100S

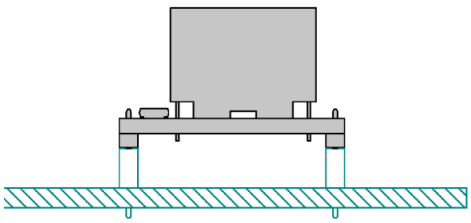
PCB Assembly, Gigabit Ethernet

Connection	Solder pads (both sides)
AC Dielectric Strength @ 50Hz	4600V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.8 dB @ 100MHz
Return Loss (typical)	17 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
Weight	~6 g

FOR PCB ASSEMBLY

EMOSAFE EN-100T Network Isolators are intended for integration into printed circuit boards (PCBs) of electronic devices requiring advanced protection. The EN-100T can either be plugged into a socket or soldered directly to the circuit board. Due to their extremely compact design, they are still usable in very tight spaces. Additional TVS diodes protect individual wire pairs from voltage surges.

- Ultra-compact
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4.6 kV AC dielectric strength
- 8.5 kV DC dielectric strength
- ISO 11801 Class D



EMOSAFE
EN-100T

PCB Assembly, Gigabit Ethernet

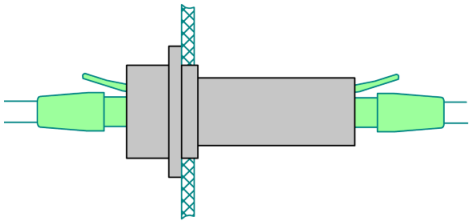
Connection	pin headers (both sides)
AC Dielectric Strength @ 50Hz	4600V
DC Dielectric Strength	8500V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
Supplementary ESD Protection	yes (TVS)
ISO 11801 Performance Category	Class D
Insertion Loss (typical)	0.8 dB @ 100MHz
Return Loss (typical)	17 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	400 V AC
Weight	~6 g

PANEL MOUNT

PANEL MOUNT

The EN-10 possesses an extremely robust waterproof and dustproof connector. When built into a suitably protected housing, and when used in combination with the optionally available IP67 Plug Housing Z-1, the EN-10H reaches the protection class IP67. Additionally, the IP67 Plug Housing Z-1 offers an additional strain relief. The EMOSAFE EN-10H is thereby also suitable for application in devices used outdoors, as well as in environments where exceptional mechanical loads and strains are placed upon the connector or cable.
The cable connection inside is horizontal.

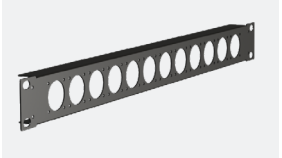
- Robust socket
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Protection class IP67 attainable



EMOSAFE
EN-10H

Panel Mount

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	0.5 dB @ 100MHz
Return Loss (typical)	12 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP20 (IP67 when used in conjunction with accessories Z-1 or Z-2)
Weight	~25 g

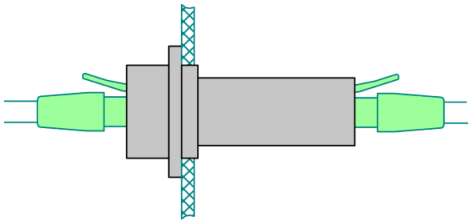


Accessories see page 78 & 83

PANEL MOUNT

The EN-10HG possesses an extremely robust waterproof and dustproof connector. When built into a suitably protected housing, and when used in combination with the optionally available IP67 Plug Housing Z-1, the EN-10HG reaches the protection class IP67. Additionally, the IP67 Plug Housing Z-1 offers an additional strain relief. The EMOSAFE EN-10HG is thereby also suitable for application in devices used outdoors, as well as in environments where exceptional mechanical loads and strains are placed upon the connector or cable. The cable connection inside is horizontal. The EN-10HG allows data rates up to 1000 Mbit/s.

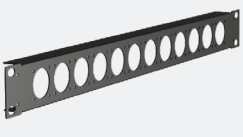
- Robust socket
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Protection class IP67 attainable



EMOSAFE
EN-10HG

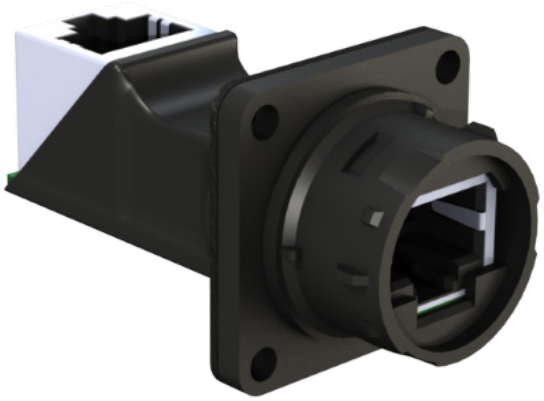
Panel Mount, Gigabit Ethernet

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	0.8 dB @ 100MHz
Return Loss (typical)	15 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP20 (IP67 when used in conjunction with accessories Z-1 or Z-2)
Weight	~25 g



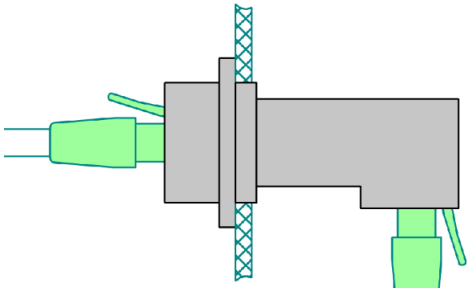
Accessories see page 78 & 83

PANEL MOUNT



The EN-10V possesses an extremely robust waterproof and dustproof connector. When built into a suitably protected housing, and when used in combination with the optionally available IP67 Plug Housing Z-1, the EN-10V reaches the protection class IP67. Additionally, the IP67 Plug Housing Z-1 offers an additional strain relief. The EMOSAFE EN-10V is thereby also suitable for application in devices used outdoors, as well as in environments where exceptional mechanical loads and strains are placed upon the connector or cable. The cable connection inside is vertical.

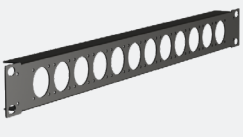
- Robust socket
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Protection class IP67 attainable



EMOSAFE
EN-10V

Panel Mount

Connection	RJ45 Jack, straight
	RJ45 Jack, angled
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	0.5 dB @ 100MHz
Return Loss (typical)	12 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP20 (IP67 when used in conjunction with accessories Z-1 or Z-2)
Weight	~25 g

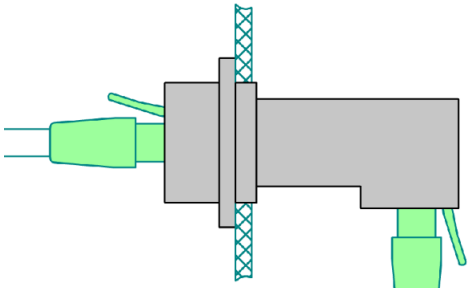


Accessories see page 78 & 83

PANEL MOUNT

The EN-10VG possesses an extremely robust waterproof and dustproof connector. When built into a suitably protected housing, and when used in combination with the optionally available IP67 Plug Housing Z-1, the EN-10VG reaches the protection class IP67. Additionally, the IP67 Plug Housing Z-1 offers an additional strain relief. The EMOSAFE EN-10VG is thereby also suitable for application in devices used outdoors, as well as in environments where exceptional mechanical loads and strains are placed upon the connector or cable.
The cable connection inside is vertical. The EN-10VG allows data rates up to 1000 Mbit/s.

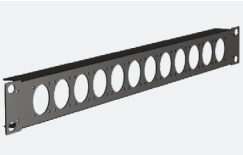
- Robust socket
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Protection class IP67 attainable



EMOSAFE
EN-10VG

Panel Mount, Gigabit Ethernet

Connection	RJ45 Jack, straight
	RJ45 Jack, angled
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	0.8 dB @ 100MHz
Return Loss (typical)	15 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP20 (IP67 when used in conjunction with accessories Z-1 or Z-2)
Weight	~25 g

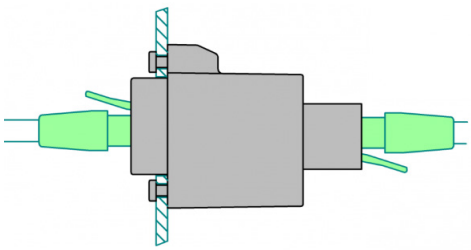


Accessories thee page 78 & 83

PANEL MOUNT

Conventional Network Isolators, which also create an electrical separation of the cable shielding, present the electromagnetic problem of radiant energy leaking from the panel housing opening, which can in turn lead to difficulties for electromagnetic compliance (EMC) testing. Devices and cables attached to ungrounded Ethernet interfaces can hereby be the cause of electromagnetic disturbances. To avoid this problem, the EN-50 series of Network Isolators provides an electrical connection to the otherwise separated earth connection via an integrated resistor network and parallel Y-Class capacitors. This results in a greatly reduced risk of radiated and received electromagnetic interference, without compromising the protective effect of the Network Isolator. With its highly resistive shielding connection, the EN-50 also enables the slow and gentle equalisation of potential voltage differences.

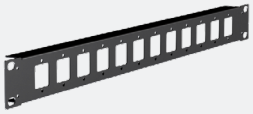
- Compact
- Conforms to IEC 60601-1 UL
- Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Optional contact protection



EMOSAFE
EN-50HG-S

Panel Mount, Gigabit Ethernet

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	1.5 dB @ 100MHz
Return Loss (typical)	8.0 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP20
Weight	~35 g

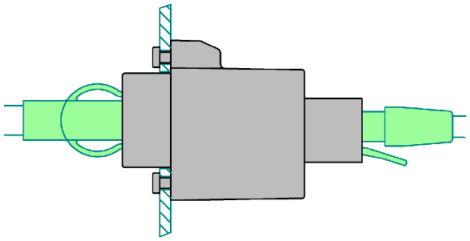


Accessories see page 82 & 83

PANEL MOUNT

Conventional Network Isolators, which also create an electrical separation of the cable shielding, present the electromagnetic problem of radiant energy leaking from the panel housing opening, which can in turn lead to difficulties for electromagnetic compliance (EMC) testing. Devices and cables attached to ungrounded Ethernet interfaces can hereby be the cause of electromagnetic disturbances. To avoid this problem, the EN-50 series of Network Isolators provides an electrical connection to the otherwise separated earth connection via an integrated resistor network and parallel Y-Class capacitors. This results in a greatly reduced risk of radiated and received electromagnetic interference, without compromising the protective effect of the Network Isolator. With its highly resistive shielding connection, the EN-50 also enables the slow and gentle equalisation of potential voltage differences. The Yamaichi Y-Con quick coupling guarantees a better retention force and a lower risk of contact.

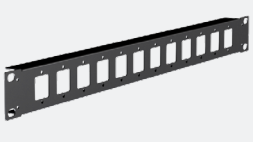
- Compact
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Optional contact protection



EMOSAFE
EN-50HG-Y

Panel Mount, Gigabit Ethernet

Connection	RJ45 Jack, straight (both sides)
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	1.5 dB @ 100MHz
Return Loss (typical)	8.0 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP20
Weight	~35 g

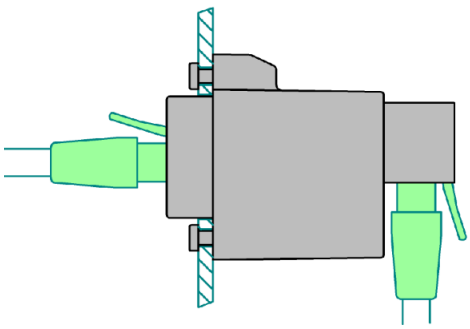


Accessories see page 82 & 83

PANEL MOUNT

Conventional Network Isolators, which also create an electrical separation of the cable shielding, present the electromagnetic problem of radiant energy leaking from the panel housing opening, which can in turn lead to difficulties for electromagnetic compliance (EMC) testing. Devices and cables attached to ungrounded Ethernet interfaces can hereby be the cause of electromagnetic disturbances. To avoid this problem, the EN-50 series of Network Isolators provides an electrical connection to the otherwise separated earth connection via an integrated resistor network and parallel Y-Class capacitors. This results in a greatly reduced risk of radiated and received electromagnetic interference, without compromising the protective effect of the Network Isolator. With its highly resistive shielding connection, the EN-50 also enables the slow and gentle equalisation of potential voltage differences.

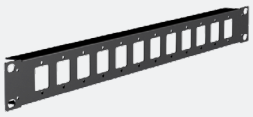
- Compact
- Conforms to IEC 60601-1
- UL Recognized Component
- RoHS compliant
- 4 kV AC dielectric strength
- 5.6 kV DC dielectric strength
- Optional contact protection



EMOSAFE
EN-50VG-S

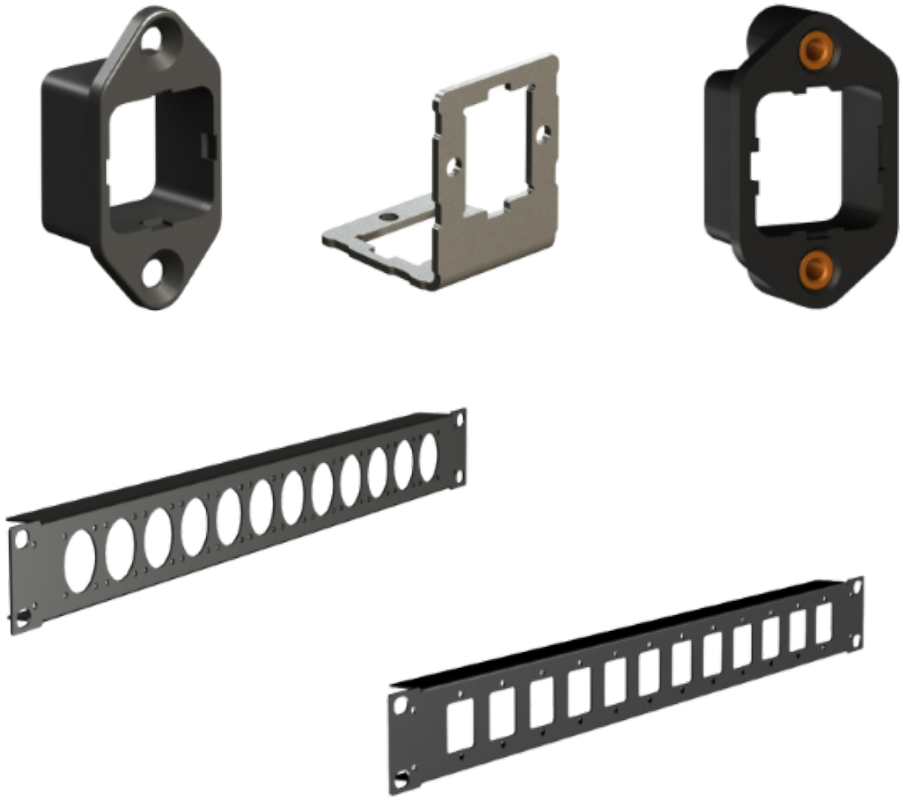
Panel Mount, Gigabit Ethernet

Connection	RJ45 Jack, straight
	RJ45 Jack, angled
AC Dielectric Strength @ 50Hz	4000V
DC Dielectric Strength	5600V
Supported Ethernet Transfer Rates	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s
ISO 11801 Performance Category	Class C
Insertion Loss (typical)	0.8 dB @ 100MHz
Return Loss (typical)	15 dB @ 100MHz
UL File No.	E362969
Maximum Working Voltage Environment	250 V AC
EN 60529 Protection Rating	IP20
Weight	~35 g



Accessories see page 82 & 83

ACCESSORIES



ACCESSORIES
Z-1

DESCRIPTION

Robust plug housing; simple retrofitting of an existing patch cable; protects against water and dust in accordance with IP67; mechanical protection of the mating connection; touch protection

ACCESSORIES
Z-2

DESCRIPTION

Robust plug housing; protects against water and dust in accordance with IP67; mechanical protection of the mating connection

ACCESSORIES
Z-3-SF-INT

DESCRIPTION

Internally fitted bezel for flush panel mounting of SnapFit compatible Network Isolators. Black plastic.

ACCESSORIES
Z-4-SF-EXT

DESCRIPTION

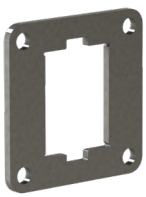
Externally fitted bezel for protruding panel mounting of SnapFit compatible Network Isolators. Black plastic

ACCESSORIES
Z-5-KMB

DESCRIPTION

Bracket for variable mounting of Keystone-compatible Network Isolators and other Keystone-compatible modules to flat surfaces. Four possible mounting orientations. Stainless steel.

ACCESSORIES
Z-6-KMB



DESCRIPTION

Universal Keystone Bracket

ACCESSORIES
Z-6-R

DESCRIPTION

DIN rail adapter for EN-1005+

ACCESSORIES
Z-6-W

DESCRIPTION

Wall mounting plate for EN-1005+

ACCESSORIES
Z-EN50-SLB

DESCRIPTION

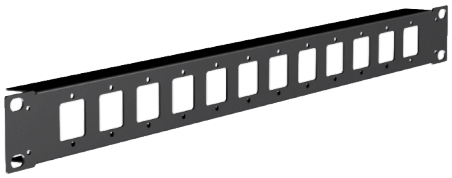
Safety Bezel for EN-50 Network Isolators, with touch protection and safety locking. Unlocking is only achievable with a tool (e.g. screw-driver). Black plastic.

ACCESSORIES
Z-EN50-B

DESCRIPTION

Bezel for EN-50 Network Isolators, black plastic

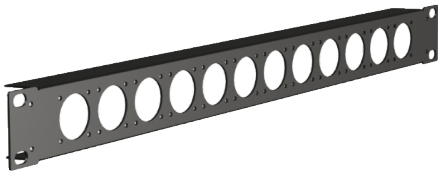
ACCESSORIES
Z-EN50-RP



DESCRIPTION

19″ Patch Panel provides mounting locations for 12 × EN-50 Network Isolators. Material: matt black powder coated steel.

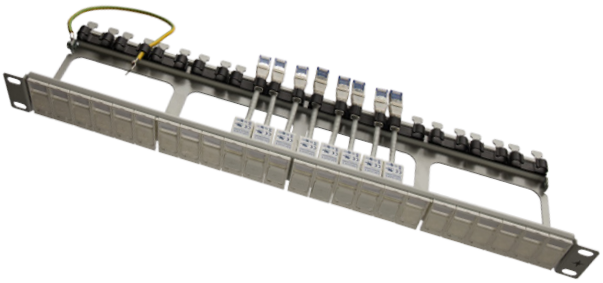
ACCESSORIES
Z-EN10-RP



DESCRIPTION

19″ Patch Panel provides mounting locations for 12 × EN-10 Network Isolators. Material: matt black powder coated steel.

ACCESSORIES
KEYSTONE-MODULE CARRIER



DESCRIPTION

Direct connection of Network Isolators to an Ethernet switch; High mounting density: up to 24 Network Isolators in a module carrier

FOOTSWITCH

FOR MEDICAL TECHNOLOGY & INDUSTRIAL APPLICATIONS!

EMO Systems develops and manufactures standard and customised footswitches, both wired and wireless models, in single and multi-pedal designs. The footswitches meet the highest standards of safety, ergonomics and design. The switches are robust, waterproof and incredibly flat.

Each pedal operates one or two microswitches with freely adjustable switching points. As a result, two-stage or self-monitoring circuits can be implemented.

The housing is milled from high-quality aluminium, which is optionally anodized or powder-coated. Baseplates and foot pedals are made of stainless steel, and are also available with various surface finishes.

Switching functions can be labelled via laser or machine engraving, colour-coding, or adhesive decals. Footswitches are constructed from materials that resist standard disinfection and cleaning agents.

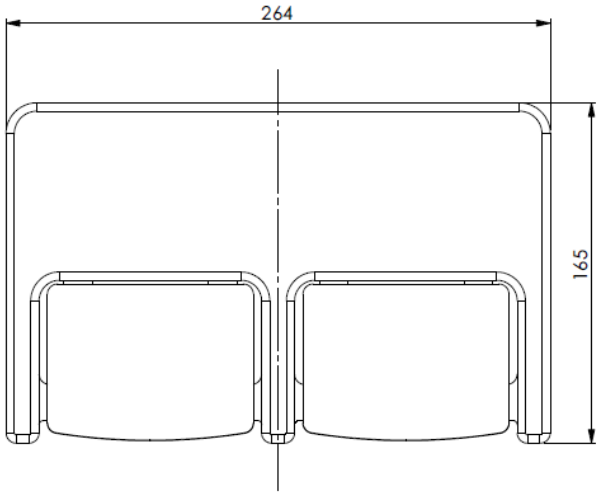
FEATURES & OPTIONS

- Ultra-flat, robust aluminum housing
- Surface anodised or powder coated
- Housing cover, foot pedals and screw fixings made of stainless steel
- 2.4 GHz wireless module
- All seals made of EPDM rubber. Resistant to common disinfectants and cleaners
- Microswitches with molded connections. Service life: 500,000 switching cycles at 24 V and 4 mA
- Integrated cable strain relief
- Fully customisable cable and plug configuration: e.g. AMP 3+, AMP D-sub, ODU, LEMO, DIN, mini DIN, Preh.

FOOTSWITCH

For wired footswitches, the termination of the switch wires can be freely specified upon ordering. The switch contacts are available as electrically isolated connections.
It is possible to operate the EMOSWITCH footswitches via serial interfaces and bus systems (for example, USB, RS232, RS458, CAN), or also to customise the footswitches exactly to your requirements; time-controlled switching functions for example.

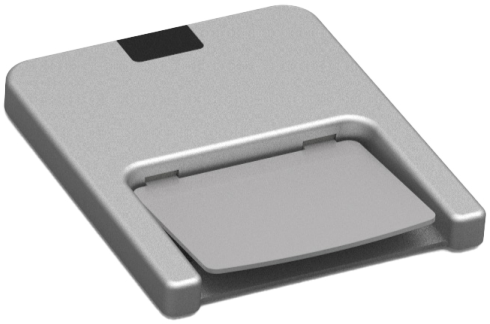
- ultra-flat aluminum housing
- either wired or wireless with a USB receiver
- optional ingress protection up to IP65



EMOSWITCH DOUBLE

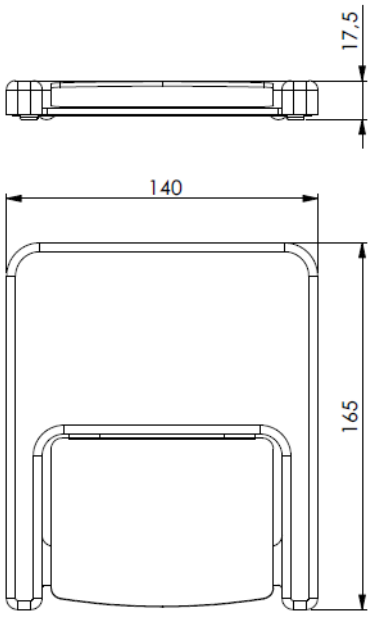
OPERATING CONDITIONS	
temperature	1° to 45°
humidity	10% to 90%
air pressure	860 hPa to 1060 hPa
STORAGE AND TRANSPORT	
temperature	-25° to 80°
humidity	10% to 90%
air pressure	600 hPa to 1060 hPa
ingress protection [Housing]	IP65
weight	1484g

FOOTSWITCH



For wired footswitches, the termination of the switch wires can be freely specified upon ordering. The switch contacts are available as electrically isolated connections.
It is possible to operate the EMOSWITCH footswitches via serial interfaces and bus systems (for example, USB, RS232, RS458, CAN), or also to customise the footswitches exactly to your requirements; time-controlled switching functions for example.

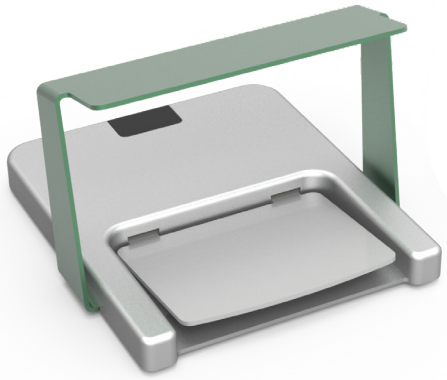
- ultra-flat aluminum housing
- either wired or wireless with a USB receiver
- optional ingress protection up to IP65



EMOSWITCH
SINGLE

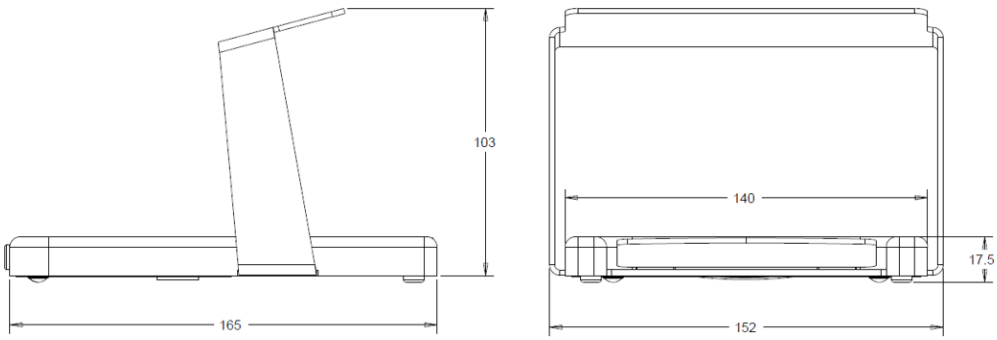
OPERATING CONDITIONS	
temperature	1° to 45°
humidity	10% to 90%
air pressure	860 hPa to 1060 hPa
STORAGE AND TRANSPORT	
temperature	-25° to 80°
humidity	10% to 90%
air pressure	600 hPa to 1060 hPa
ingress protection [Housing]	IP65
weight	739g

FOOTSWITCH



For wired footswitches, the termination of the switch wires can be freely specified upon ordering. The switch contacts are available as electrically isolated connections.
It is possible to operate the EMOSWITCH footswitches via serial interfaces and bus systems (for example, USB, RS232, RS458, CAN), or also to customise the footswitches exactly to your requirements; time-controlled switching functions for example.

- ultra-flat aluminum housing
- either wired or wireless with a USB receiver
- optional ingress protection up to IP65



EMOSWITCH
SINGLE-GUARDED

OPERATING CONDITIONS	
temperature	1° to 45°
humidity	10% to 90%
air pressure	860 hPa to 1060 hPa
STORAGE AND TRANSPORT	
temperature	-25° to 80°
humidity	10% to 90%
air pressure	600 hPa to 1060 hPa
ingress protection [Housing]	IP65
weight	942g

ISOLATION TRANSFORMERS

Isolation transformers, in a narrower sense, can also be called network transformers.
The network voltage is transmitted low-loss to a secondary winding. This is isolated galvanically from the primary winding by means of a protective separation.
The medical isolation transformers IMEDi and IMEDe increase the protection against electric shocks for patients and staff.
Isolation transformers however, do not protect against electric shocks when one or both output terminals (Phase or Neutral) are touched.

FEATURES & OPTIONS

- fixed input and output AC voltage of 230V
- built-in inrush current limiter on semiconductor basis (NTC)
- one or two equipotential bonding studs (in accordance with DIN 42801)
- designed for continuous operation
- self-resetting temperature switch
- conformity test according to EN60601-1
- equipped with a basic equipotential bonding

ISOLATION TRANSFORMER

Isolation transformers, in a narrower sense, can also be called network transformers. The network voltage is transmitted low-loss to a secondary winding. This is isolated galvanically from the primary winding by means of a protective separation. The medical isolation transformers IMEDi and IMEDe increase the protection against electric shocks for patients and staff. Isolation transformers do not protect against electric shocks when one or both output terminals (Phase or Neutral) are touched.

IMEDe 150

max. power output	150 VA
output sockets	2 x IEC 320
housing protection class	IP20
weight without packaging	approx. 3 kg
dimensions (L x W x H) mm	194x148x77
device leakage current	< 100 uA
output leakage current	< 50 µA
inrush current limiter	thermal semiconductor
short circuit protection	micro fuse primary
excess temperature protection	self reseting temperature switch
housing design	sheet steel housing, powder-coated, light-grey RAL7035
mains cable primary	included in delivery
mounting possibility	floor, table or wall mounting
conformity	EN60601-1
classification according to German Medical Devices Act (MPG) classification	product class I

ISOLATION TRANSFORMER

Isolation transformers, in a narrower sense, can also be called network transformers. The network voltage is transmitted low-loss to a secondary winding. This is isolated galvanically from the primary winding by means of a protective separation. The medical isolation transformers IMEDi and IMEDe increase the protection against electric shocks for patients and staff. Isolation transformers do not protect against electric shocks when one or both output terminals (Phase or Neutral) are touched.

IMEDe 300

max. power output	300 VA
output sockets	4 x IEC 320
housing protection class	IP20
weight without packaging	approx. 4.5 kg
dimensions (L x W x H) mm	194x148x92
device leakage current	< 100 uA
output leakage current	< 70 µA
inrush current limiter	thermal semiconductor
short circuit protection	micro fuse primary
excess temperature protection	self reseting temperature switch
housing design	sheet steel housing, powder-coated, light-grey RAL7035
mains cable primary	included in delivery
mounting possibility	floor, table or wall mounting
conformity	EN60601-1
EN60601-1 classification according to German Medical Devices Act (MPG) classification	product class I

ISOLATION TRANSFORMER

Isolation transformers, in a narrower sense, can also be called network transformers. The network voltage is transmitted low-loss to a secondary winding. This is isolated galvanically from the primary winding by means of a protective separation. The medical isolation transformers IMEDi and IMEDe increase the protection against electric shocks for patients and staff. Isolation transformers do not protect against electric shocks when one or both output terminals (Phase or Neutral) are touched.

IMEDe 600

max. power output	600 VA
output sockets	6 x IEC 320
housing protection class	IP20
weight without packaging	approx. 9 kg
dimensions (L x W x H) mm	270x188x92
device leakage current	< 100 uA
output leakage current	< 100 µA
inrush current limiter	thermal semiconductor
short circuit protection	micro fuse primary
excess temperature protection	self reseting temperature switch
housing design	sheet steel housing, powder-coated, light-grey RAL7035
mains cable primary	included in delivery
mounting possibility	floor, table or wall mounting
conformity	EN60601-1
classification according to German Medical Devices Act (MPG) classification	product class I

ISOLATION TRANSFORMER

Isolation transformers, in a narrower sense, can also be called network transformers. The network voltage is transmitted low-loss to a secondary winding. This is isolated galvanically from the primary winding by means of a protective separation. The medical isolation transformers IMEDi and IMEDe increase the protection against electric shocks for patients and staff. Isolation transformers do not protect against electric shocks when one or both output terminals (Phase or Neutral) are touched.

IMEDe 1000

max. power output	1000 VA
output sockets	9 x IEC 320
housing protection class	IP20
weight without packaging	approx. 14 kg
dimensions (L x W x H) mm	305x218x110
device leakage current	< 100 uA
output leakage current	< 100 µA
inrush current limiter	thermal semiconductor
short circuit protection	micro fuse primary
excess temperature protection	self reseting temperature switch
housing design	sheet steel housing, powder-coated, light-grey RAL7035
mains cable primary	included in delivery
mounting possibility	floor, table or wall mounting
conformity	EN60601-1
classification according to German Medical Devices Act (MPG) classification	product class I

ISOLATION TRANSFORMER

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IMEDe 2000

max. power output	2000 VA
output sockets	2 x IEC 320
housing protection class	IP20
weight without packaging	approx. 21 kg
dimensions (L x W x H) mm	312x285x110
device leakage current	< 350 uA
output leakage current	< 100 µA
inrush current limiter	thermal semiconductor
short circuit protection	micro fuse primary
excess temperature protection	self reseting temperature switch
housing design	sheet steel housing, powder-coated, light-grey RAL7035
mains cable primary	included in delivery
mounting possibility	floor or table mounting
floor, table or wall mounting conformity	EN60601-1
classification according to German Medical Devices Act (MPG) classification	product class I

ACCESSORIES
IEC CABLE 1M

DESCRIPTION

Adapter cable for connecting a device with a Schuko plug according to CEE 7/4 to the outlet of an isolation transformer (IEC 60320 C13). Cable length is one metre. Prices for resellers and device manufacturers on request.

ACCESSORIES
ELG 130060

DESCRIPTION

The earth leakage guard of the ELG-series controls the dielectric resistance between the medical supply circuit and the earth potential. The typically arranged protective measures against insulation fault on the building power supply (such as ground fault circuit breaker) may not principally identify possible insulation defects on the output side due to the galvanic insulation through the IMED isolating transformer. This leads to a potential danger for the patients or the operating personnel. The earth leakage guards of the ELG-series close this security gap reliably by clearly warning against insulation faults. To achieve this, the device monitors the isolation resistance, and compares this to a specified limit. If this limit is overstepped, then the ELG warns optically as well as acoustically.

MACHINE VISION SYSTEMS

emovision

We solve challenging measuring tasks with state-of-the-art image processing equipment. Acquisition of image data usually is performed with high-resolution industrial black-and-white and color CCD cameras.

- 3D-contour acquisition through structured lighting
- Special lighting systems e.g. for the acquisition of metallic surfaces
- Combination of mechanical axes and optical measuring systems
- Dimensional measurement of large and small objects

MISCELLANEOUS

For medical electrical systems, inside and outside of treatment areas, no standard socket strips may be used. A medical electrical system must be protected against change by unauthorized persons. The SLG-4-MED secures the system against unauthorized changes with a lockable aluminum protective cover. This can only be opened by a tool. In addition, the IEC60601-1: 2006 (3rd edition) requires additional equipotential bonding for devices connected to a multiple socket. This additional equipotential bonding distributor is already installed in the SLG-4-MED and thus saves the otherwise required purchase of an extra distributor. A green function indicator light, even when closed, clearly indicates whether the power strip is live.
A separate protection of phase and neutral guarantees a fast response time of the fuses. The transparent power plug helps you to operate the power strip in the correct phase.

- EN 60601-1 & EN 60601-1-2
- lockable cap
- increased safety
- closed lid
- child lock
- recognition of operating mode

SLG-4-MED POWER STRIP

type	4-way power strip
cable length	3m
housing	aluminium
socket current rating	16A
colour	silver

OUR SERVICES

DESIGN & DEVELOPMENT

- product development
- electronic development
- image processing

MACHINE VISION SYSTEMS

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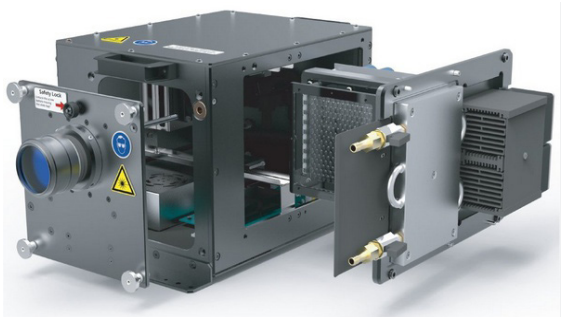
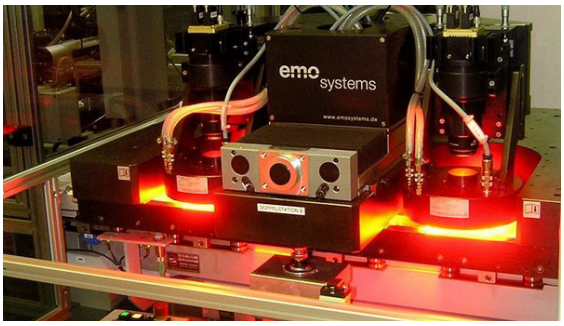
- Reverse Engineering

PROJEKT WORK

- Prototype Construction & Series Production
- Technical Documentation
- Consultations

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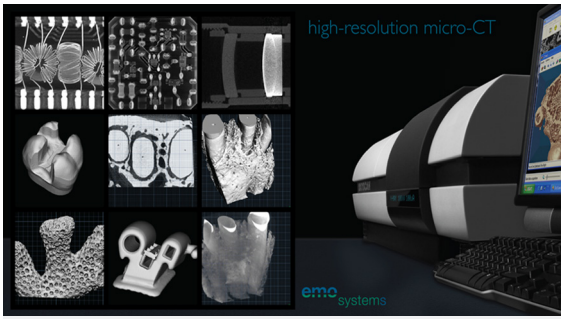
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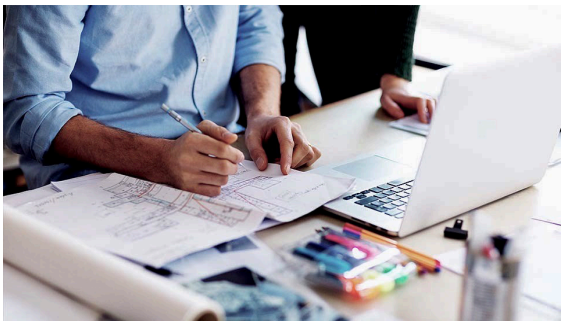

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PD1184-V20