# MPA5500
A.C. POWER ADAPTOR

The MPA5500 enables any MTL5500 module that is normally powered from a nominal 24V DC supply (i.e. those that are not loop-powered) to be powered from a high-voltage AC supply.

It plugs into the power socket (terminals 13 and 14) of an MTL5500 module and clips securely onto the module housing. The 25V DC power output from the adaptor is sufficient to supply a single module and can be connected to any normal AC power source.
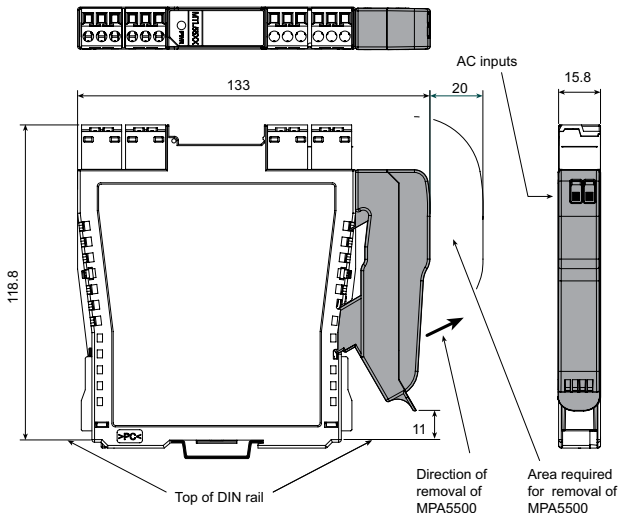
SPECIFICATION

Input voltage
  85 – 265V AC, (45–65Hz)
Efficiency
  71% typ. at 230V AC
Power dissipation
  1.2W typ at 230V AC.
Input terminals
  Cage-clamp terminals accommodating conductors up to 1.5mm^2 stranded or 16AWG single-core
Input protection
  internal fuse, not user serviceable
Output voltage
  25Vdc ± 10%
Output current
  120mA at 25V
Ambient temperature
  Operating: –20 to +60°C
  Storage: –40 to +80°C
Mounting
  Plugs into and clips onto MTL5500 range I/O module
  It is not for use with any equipment other than MTL5500.
Humidity
  5 to 95% relative humidity
Mechanical
  Ingress Protection: IP20
  Material: polycarbonate
 Weight: 28g approx.
Standards compliance
  EN 61326, EN 61010

PCS45/PCL45USB
CONFIGURATOR
FOR MTL CONVERTERS

The PCS45/PCL45USB configurator allows MTL converters to be configured from a standard PC running a Microsoft® Windows® operating system. It comprises PC software, provided on a CD (PCS45), and an ATEX certified interfacing link (PCL45USB). Converters can be configured from the safe area, while on-line, and configurations can be saved to disk and printed out when required. It is suitable for use with MTL4000, MTL4500, MTL5000 and MTL5500 range of products.
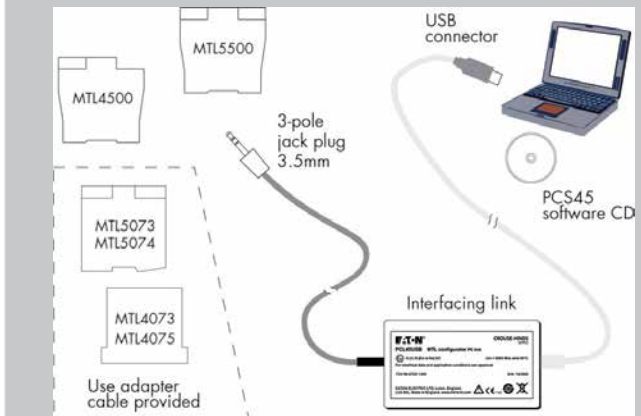
SPECIFICATION

PCL45USB hardware
Location
  Safe area
Connections
  PC side: USB B(F) socket
  Converter side: cable with 3.5mm jackplug, 3-pole for MTL4500 and MTL5500 range of converters. An adapter cable is provided for other earlier MTL converters.
Cable lengths
  Converter side (fitted): 1.5m
  USB cable A(M) to B(M) (supplied): 2m
Ambient temperature limits
  –10°C to +60°C operating
  –20°C to +70°C storage
Humidity
  5 to 95% relative humidity (non-condensing)
Weight
  200g
PCS45 Configuration software
  Compatible with Windows XP, Win7, Win8.
  Consult MTL for operation with any other operating system.
Software medium
  PCS45 supplied on CD
  Updates are available at www.mtl-inst.com
Recommended minimum PC configuration
  Microsoft Windows XP, Win7, Win8
  20MB of available hard disc space
  CD ROM drive
  Available USB port
  Printer (local or network)

Powering Business Worldwide

PSG60E24RM
24V 2.5A PSU
24Vdc Power supply, DIN rail mounting, mains input.

A general purpose 24V dc power supply for use with MTL isolator and barrier product ranges. Single 24V output with adjustable voltage and status indication.

For mounting on 35mm top hat DIN rail.

(replacement for MTL5991)

Terminals	Function
L	Mains input line
N	Mains input neutral
E	Earth
+	24V dc+
-	24Vdc

SPECIFICATION See also common specification

AC input range
85Vac to 264Vac, 47 to 63Hz

DC input range
120Vdc to 375Vdc

DC output
24V (adjustable 24-28V)

Output current
2.5A (3,75A for 5s)

Main interruption holdup time
>20ms

Efficiency
90%

Input to Output isolation
4kVac

Isolation Input/output to ground
1.5kVac

Housing material
Aluminium

Dimensions L x W x H
121 x 32 x 125mm

Weight
370g

Wire size
0.3 to 3.3mm^2, AWG 22-12 with removable terminals
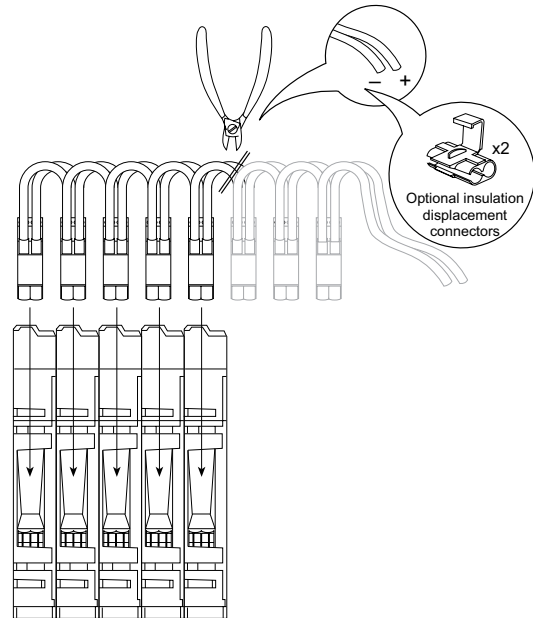
Operating Temperature
-20°C to +80°C

Storage Temperature
-25°C to +85°C

MTL5500 RANGE
POWERBUS KITS
PB - 8T,16T,24T,32T

A quick and easy way to distribute DC power to MTL5500 range modules. Each powerbus kit includes 4 single ferrules, 4 twin ferrules and 2 insulation displacement connectors (Scotchlok).

Optional insulation displacement connectors

SPECIFICATION

Available in 4 different lengths:

PB - 8T	=	8 connectors and loops
PB - 16T	=	16 connectors and loops
PB - 24T	=	24 connectors and loops
PB - 32T	=	32 connectors and loops

Insulation material :
PVC

Conductor :
24 strands of 0.2mm dia (0.75mm^2) standard copper

Insulation thickness :
0.5 to 0.8 mm

Current rating :
12A max

Operating temperature range :
−20°C to +60°C

Max voltage drop on 32 modules drawing 130mA max :
0.5V

CHOOSING A POWERBUS KIT

Choose a powerbus where the number of power plugs is greater than or equal to the number of isolators to be powered and if necessary cut the powerbus to the required number of terminations.

Note: To reduce the risk of excessive voltage drop or overcurrent do not connect powerbuses in series.

F·A·T·N
Powering Business Worldwide

MTL5500 RANGE ENCLOSURES

DIMENSIONS (mm) AND MOUNTING

DX070

DX170

Top of DIN rail
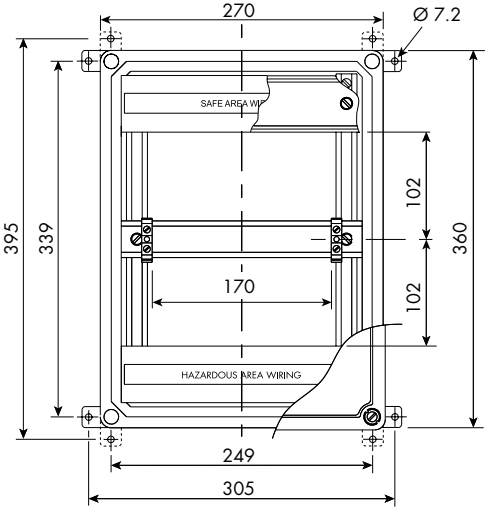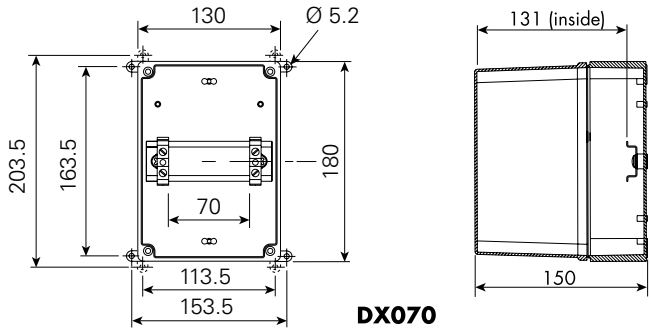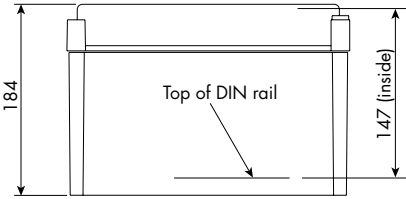
SPECIFICATION

Construction
Glass reinforced polycarbonate base - DX070
Glass reinforced polyester base - DX170
Transparent polycarbonate lid

Protection
Dust-tight and water-jet proof to IEC529:IP65

Lid fixing
Captive fixing screws

Weight (excluding barriers/isolators) kg
DX070   0.8
DX170   2.6

Items provided
DIN rail - fitted
ETL7000 Earth terminals (2 x) - fitted
"Take care IS" front adhesive label
Cable trunking (DX170 only)

Note: Isolators are not included.

Mounting
Wall fixing lugs provided. For further details refer to INM5500.

Tagging and earth rail
Accommodates MTL5500 range of accessories.

Permitted location
Safe (non-hazardous) area

Note: N. America/Canada - Enclosures are rated NEMA 4X so can be used in Class 1, Division 2 (gases) location, but check with local requirements and ensure all cable entries also conform. Additional warning label will be required on or near the enclosure, see installation details. Not suitable for Class II or III, Division 2 hazardous locations.

Approximate capacities (on DIN rail between earth terminals)

	Number of MTL5500 isolators	
DX070	4	(2)*
DX170	10	(8)*

* Use these figures when IMB57 mounting blocks for tagging/earth are included.

Ambient temperature limits
Dependent on units fitted. See instruction manual INM5500.

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MTL5500 RANGE ACCESSORIES

MTL5500 range of isolators mount quickly and easily onto standard DIN rail. A comprehensive range of accessories simplifies earthing and tagging arrangements.
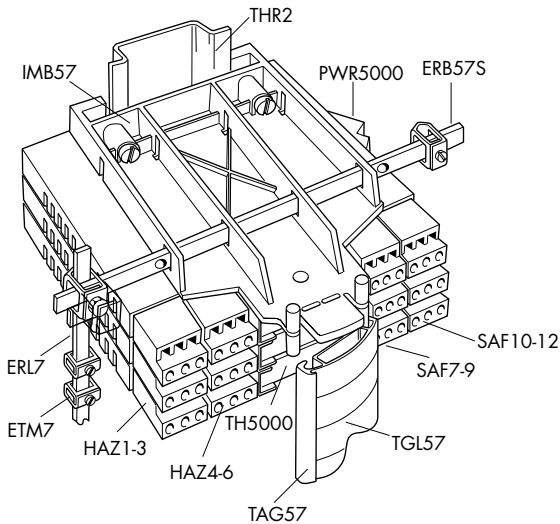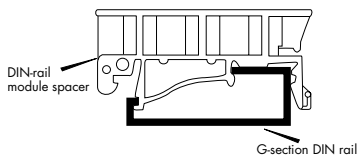

MOUNTING

THR2 DIN rail,1m length
DIN rail to EN50022; BS5584; DIN46277

**MS010 DIN rail module spacer, 10mm, pack of 5**
Grey spacer, one required between each MTL5533 or MTL5995-PS and any adjacent module on a DIN rail, to provide 10mm air-circulation space between modules
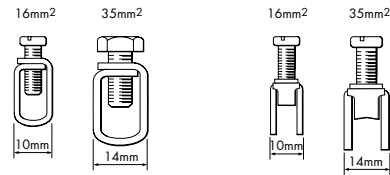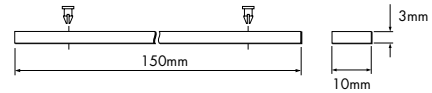

EARTH RAILS AND TAG STRIP

IMB57 Insulating mounting block
One required at each end of a tagging strip/earth rail. Suitable for low-profile (7.5mm) and high-profile (15mm) symmetrical DIN rail.
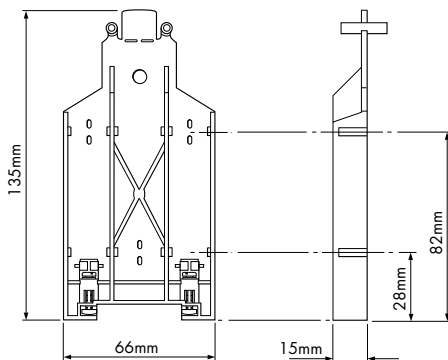
ERB57S Earth-rail bracket, straight
Nickel-plated; supplied with two push fasteners, one (14mm, 35mm^2) earth-rail clamp and one (10mm, 16mm^2) earth clamp.
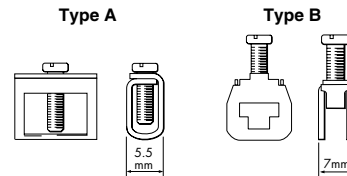

ERL7 Earth rail, 1m length
Nickel-plated; may be cut to length.

ETM7 Earth terminal, bag of 50
For terminating cable screens and 0V returns on the ERL7 earth rail. For cables ≤ 4mm^2. Exact dimension dependent on manufacturer.

TAG57 Tagging strip, 1m length
Cut to size. Supplied with tagging strip label suitable for MTL5000 or MTL5500 modules.

TGL57 Tagging strip labels, set of 10 x 0.5m
Spares replacement, for use with TAG57 tagging strip. Suitable for MTL5000 or MTL5500 modules.

INDIVIDUAL ISOLATOR IDENTIFICATION

TH5000 tag holders
Each isolator may be fitted with a clear plastic tag holder, as shown below. Order TH5000, pack of 20.
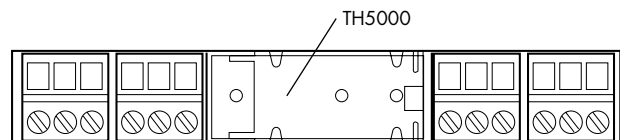
CONNECTORS

Each MTL5500 unit is supplied with signal and power connectors, as applicable.

Spares replacement connectors are available separately; see ordering information.

See also
'MTL5500 range of powerbus kits'

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CUSTOM, STANDARD AND UNIVERSAL BACKPLANES FOR EASY DCS INTEGRATION
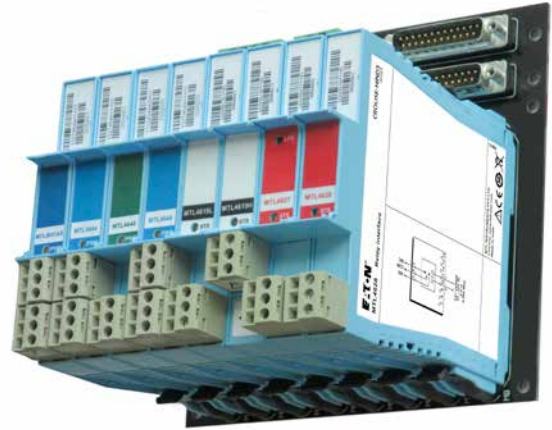
- Total flexibility
- Reduce wiring
- Simplify installation
- Special functions
- Signal conditioning
- HART® integration

The MTL4500/MTL4600 range of backplanes, enclosures and other accessories provide comprehensive, flexible and remarkably compact mounting facilities for system vendors, original equipment manufacturers and end users alike.

CUSTOMISED BACKPLANES

Eaton provides a complete design and manufacturing service for MTL customised backplanes. Customised backplanes give the vendors and users of process control and safety systems the opportunity to integrate MTL4500/MTL4600/HART® modules directly into their system architecture. As there are no hazardous-area circuits on the backplanes, customised versions can be produced without the need for IS certification, so simplifying design and lowering costs.

UNIVERSAL CUSTOM BACKPLANES

The 'universal' backplane allows a fast and economic approach to providing a custom interface. Where tight time schedules exist, the backplane can be installed to allow the panel building and wiring to be completed. The customised adapter card can then be plugged in at any time up to integrated test.

ADAPTER CARDS

Adapter cards already exist for many of the DCS companies. In addition there is a range of general purpose cards that offer reduced wiring for use with specific MTL modules. These are also available in left- and right-hand versions to ease panel wiring.

STANDARD MTL BACKPLANES

Standard MTL backplanes are available to accommodate 4, 8, 16, or 24 modules using screw-clamp connectors for the safe-area circuits. On an individual backplane, any module can be plugged into any position and module types can be mixed. For 8-, 16- and 24-way backplanes, screw-clamp connectors which plug into the backplanes provide primary and secondary 24V dc power supplies. Power to several 8- or 16-way backplanes can be interconnected to reduce and simplify wiring – see instruction manual INM4500/INM4600 for details.

OPTIONAL ACCESSORIES

Optional accessories include colour coded tagging strip kits for all three sizes of backplane and earth rail kits for 8 and 16-way versions. Mounting accessories are available for surface (all backplanes), T-section and G-section DIN-rail (8- and 16-way versions), and a horizontal plate for mounting 24-way backplanes in 19-inch racks.

WEATHERPROOF ENCLOSURES

Weatherproof enclosures are available for applications where separate safe–area enclosures are required for backplanes with modules. Available to accommodate one 4-way or one 8-way backplane, they are manufactured from GRP giving protection against dust and water to IEC529:IP65. The lids are made from transparent high-strength polycarbonate so that LEDs, switches, etc, on the tops of the modules are easy to see.

DCS VENDORS/SYSTEMS SUPPORTED:

ABB Automation
S100, INFI90, S800

Emerson
Delta V, M Series, S Series

GE Bently-Nevada

HIMA
HIMax

Honeywell
PMIO, C200, C300, UPIO, Safety Manager, USIO

Rockwell Automation
ICS Triplex, Plantguard

Schneider Electric
Foxboro I/A, Triconex Trident/Tricon, Modicon

Siemens
ET200, S7

Yokogawa
Centum R3, VP, Prosafe RS, CS3000

MTL CPS STANDARD BACKPLANES

| Backplane model no. | Number of modules | Safe-area connections | MOUNTING KITS | | | ACCESSORIES | | |
			Surface	DIN–rail (T or G)	19–inch rack	Earth–rail kit	Tagging strip kit	Spare fuse pack
CPS04	4	Screw–clamp	SMS01	DMK01	–	–	–	FUS1.0ATE5
CPS08	8	Screw–clamp	SMS01	DMK01	–	ERK08	TSK08	FUS1.0ATE5
CPS16	16	Screw–clamp	SMS01	DMK01	–	ERK16	TSK16	FUS2.0ATE5 or FUS2.5ATE5
CPS24	24	Screw–clamp	SMS01	DMK01	HMP24	–	TSK24	FUS4.0ATE5

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CPS BACKPLANE DIMENSIONS (mm)
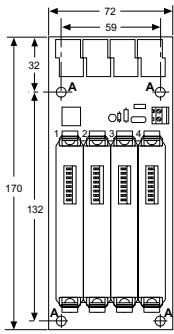
CPS04
CPS04-CC
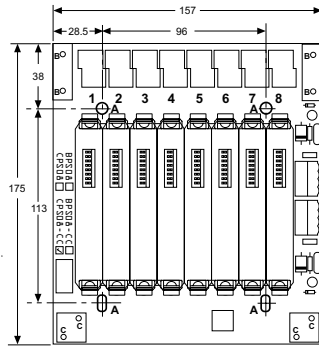
CPS08
CPS08-CC

CPS16
CPS16-CC

-CC - Conformal Coating

CPS24

Power requirements, Vs
21V dc to 35V dc through plug-in connectors
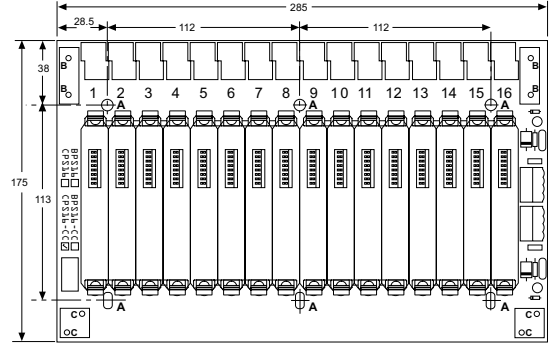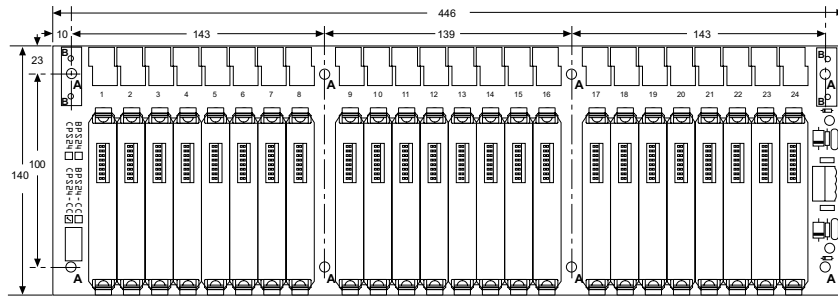
Safe–area connections
CPS: 2.5mm^2 screw-clamp terminals – 6 positions per module

Weight (without modules or accessories)

CPS04:	96g
CPS08:	225g
CPS16:	419g
CPS24:	592g

HMP24 - 19" RACK MOUNTING PLATE FOR CPS24

483mm

132.5mm
(3U)

BACKPLANE ACCESSORIES

Earth terminals

Earth rail

Tagging strip
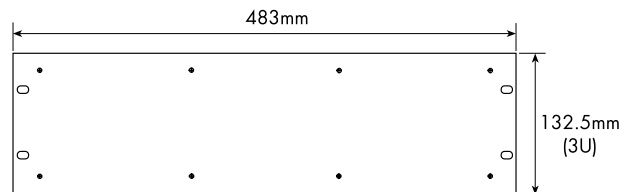
Fuses
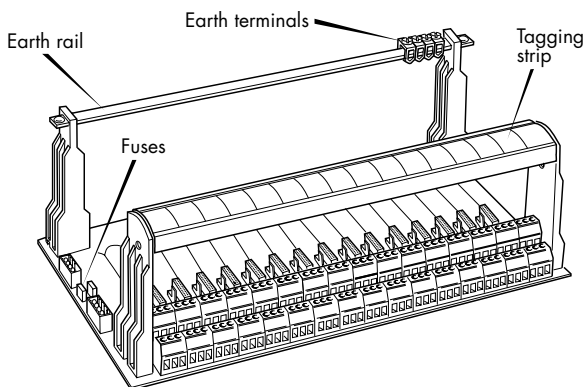
SCK45 - backplane clips

10 x strip of four

MCK45 - backplane clips

16 x strip of two

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CUSTOM BACKPLANES

MTL4500 range of backplanes can be customised for specific applications and customer's requirements. All the signals on the backplane are 'safe-area' so custom designs are possible without the need for certification. Eaton offers a fast and efficient customising service upon request.

Many installations can benefit from the use of existing custom solutions. These provide reduced system wiring, modularisation of the channels to match the IO card. In addition diagnostics, such and line fault detection, can be grouped prior to connection into the system.

Remote cable connections:

In addition to the many DCS solutions, listed on a previous page, are backplanes and cables that are ideal when the isolators are mounted in remote cabinets and the signals need to be returned to the system via a multicore cable.

CP-DYN RANGE

FTA	Size	Function	MTL modules
CP-DYNB-AIO	B	16ch analogue input /output	MTL4541, 4546Y, 4573
CP-DYNB-AI250	B	16ch analogue input 1-5V o/p	MTL4541, 4573
CP-DYNA-2AIO	A	16ch analogue input / output	MTL4544, 4549Y
CP-DYNB-DI	B	16ch digital input	MTL4511, 4514
CP-DYNB-DILF	B	16ch digital input with LFD	MTL4514
CP-DYNB-2DI	B	32ch digital input	MTL4513, 4516, 4517
CP-DYNB-4DI	B	48ch digital input	MTL4510
CP-DYNA-DO	A	8ch digital output	MTL4521, 4521L
CP-DYNB-DO	B	16ch digital output	MTL4521, MTL4521L

DESCRIPTION

For use when the IS interfaces are remotely mounted from the control system, this series of cable connected FTAs provide a simple plug/ socket connection method for IS field devices to any control system. The FTAs come fitted with mounting pillars for surface mounting or may be used with the DIN rail mounting kit to mount on a single DIN rail.

The cable connections between the system card and the FTA use the Tyco Dynamic range of connector which provide a reliable and high density solution.
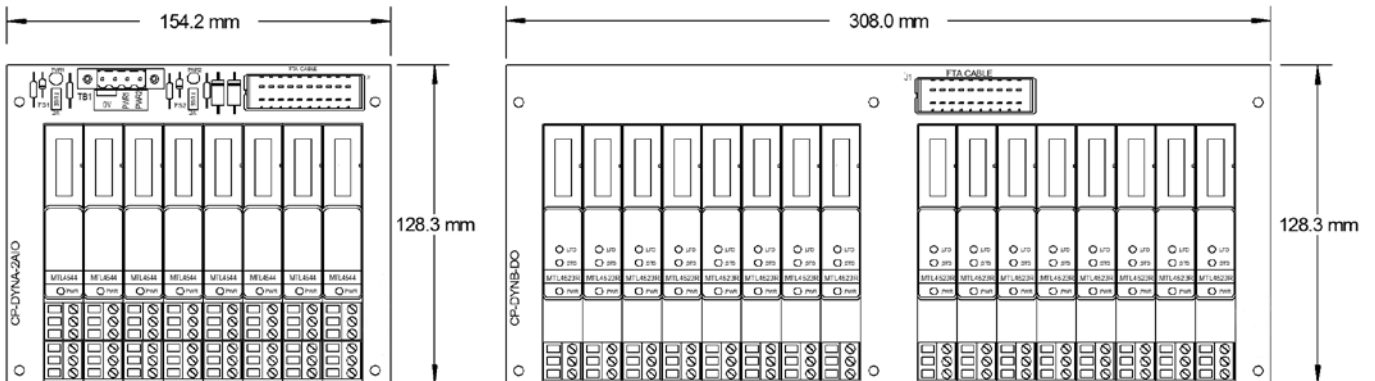
CABLES

All FTAs use the Tyco 20 pin Dynamic range of connectors. Cables are fitted with a mating connector and free ends the other, for connection to the system card.

Cable ordering code

CABDYN20-0.5	0.5m cable
CABDYN20-1	1.0m
CABDYN20-2	2.0m
CABDYN20-3	3.0m
CABDYN20-5	5.0m
CABDYN20-8	8.0m
CABDYN20-10	10m
CABDYN20-15	15m
CABDYN20-20	20m
CABDYN20-25	25m
CABDYN20-30	30m

CP-DYN DIMENSIONS

For full technical details please contact you local Eaton sales office.

Powering Business Worldwide
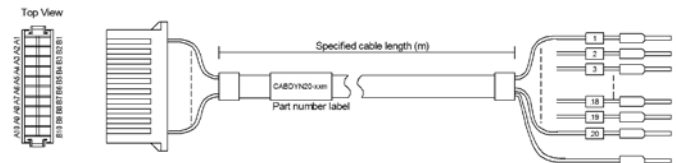
CPELCO RANGE

A range of dedicated backplanes to interface with MTL4500 range of intrinsically safe isolator modules and the MTL HART maintenance system products. The backplanes offer a standard Elco interface connector for use in systems where the IS interfaces are remote from the DCS.

| Backplane	Function	MTL module	Cable
CPM08-2AIO	16ch AI 4-20mA	MTL4544/4576/4549Y x 8	Elco38 x 1
CPM08-2AV	16ch AI 1-5V	MTL4544/4576 x 8	Elco38 x 1
CPM16-AIO	16ch AIO 4-20mA	MTL4541/4573/4546Y	Elco38 x 1
CPM16-2AIO	32ch AI 4-20mA	MTL4544/4576/4549Y x 16	Elco38 x 2
CPM16-2AV	32ch AI 1-5V	MTL4544/4576 x 16	Elco38 x 2
CPM08-DDI	16ch DI	MTL4513/4516	Elco38 x 1
CPM16-DO	16ch DO	MTL4524/4523R	Elco38 x 1
CGM08-DO	8ch DO	MTL4521/4521L (loop powered)	Elco38 x 1
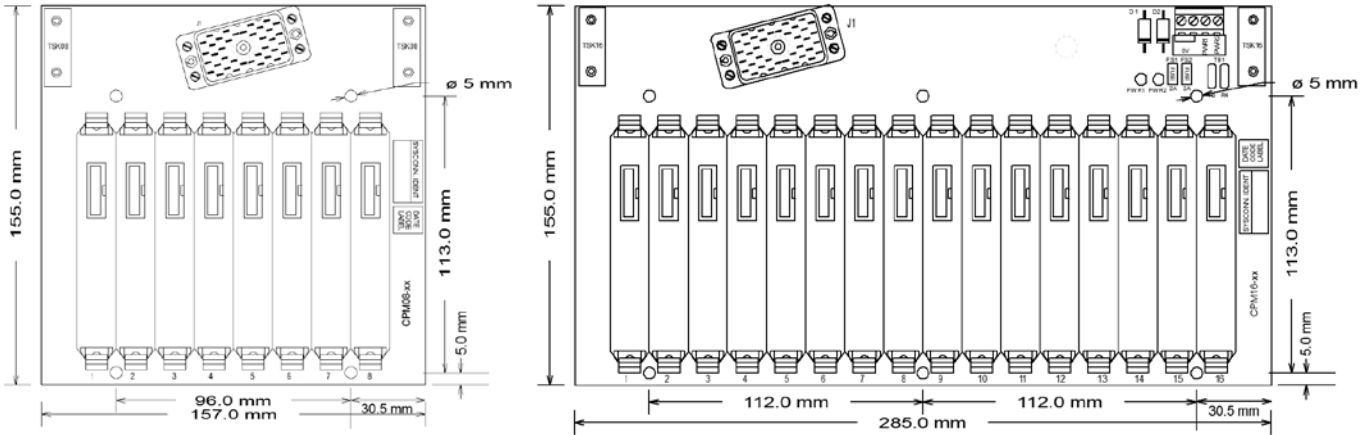
For full technical details please contact your local MTL sales office.

ANALOGUE SIGNAL REPEAT

CPS04-AIREP backplane may be used to generate a repeat output from a single transmitter source. This includes high integrity loops in general purpose applications. The MTL4641 is used to generate an isolated repeat signal from an existing 4-20mA loop.

CPS04-2AIO, 8 channel backplane, is used with IS signals with 2 channel AI or AO modules or with the MTL4544D to generate 4 inputs with repeat outputs.
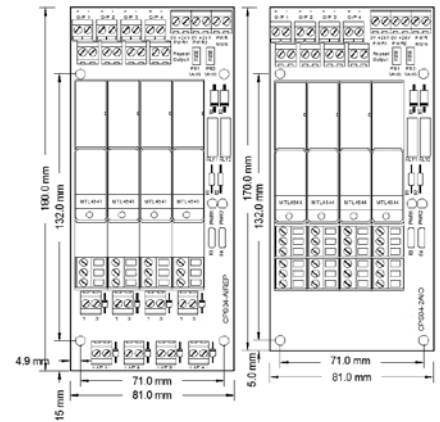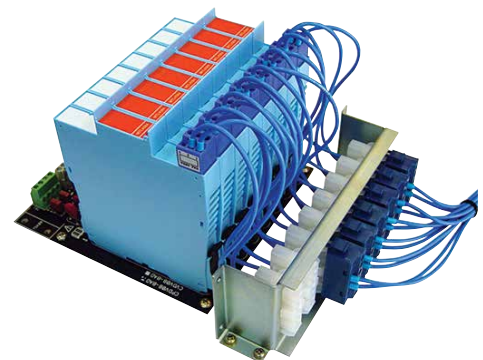

MTL CUSTOM BACKPLANE SOLUTIONS

A wide range of backplanes can be offered with application specific functions. System connection options and modularity for individual signal types can be provided to offer significant space and cost savings. Please contact your local Eaton sales office if you wish to discuss your application requirements.

PRODUCT MIGRATION

Migration options for legacy MTL4000 range installations are also available. This enables isolators to be easily upgraded, or re-connecting existing isolators to a new control system, with the minimum of disturbance to existing wiring. For more information on product migration visit the resource section at www.mtl-inst.com

ORDERING INFORMATION

MTL4500/5500 range isolators
Specify part number: **eg, MTL4511, MTL5575**

Individual isolator identification
TH5000	Tag holder (Pack of 20)

Connectors - MTL4500 & MTL5500
HAZ1-3	Hazardous-area plug, terminals 1, 2 and 3
HAZ4-6	Hazardous-area plug, terminals 4, 5 and 6
HAZ-CJC	Hazardous-area plug, terminals 1 and 3 with cold-junction sensor
HAZ-CJC2	Hazardous-area plug, terminals 4 and 6 with cold-junction sensor
SAF1-3	Safe-area plug, terminals 1, 2 and 3
SAF4-6	Safe-area plug, terminals 4, 5 and 6

Connectors - MTL5500 only
SAF7-9	Safe-area plug, terminals 7, 8 and 9
SAF10-12	Safe-area plug, terminals 10, 11 and 12
PWR5000	Power connector, terminals 13 and 14

PowerBus - MTL5500 only
PB-8T	Powerbus Kit for up to 8 isolators
PB-16T	Powerbus Kit for up to 16 isolators
PB-24T	Powerbus Kit for up to 24 isolators
PB-32T	Powerbus Kit for up to 32 isolators

MTL5500 mounting accessories
THR2	1m length of DIN rail to EN 50022; BS 5584; DIN 46277
MS010	DIN-rail module spacer, 10mm (pack of 5)

MTL5500 earth-rail and tag strip accessories
IMB57	Insulating mounting block
ERB57S	Earth-rail bracket, straight
ERL7	Earth-rail, 1m length
ETM7	Earth terminal, bag of 50
TAG57	Tagging strip, 1m length
TGL57	Tagging strip labels, set of 10 x 0.5m
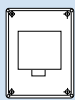
MTL5500 enclosures
DX070	Enclosure for MTL5500 x 4
DX170	Enclosure for MTL5500 x 10

MTL4500 standard backplanes
CPS04	4-way backplane screw-clamp connector
CPS08	8-way backplane screw-clamp connector
CPS16	16-way backplane screw-clamp connector
CPS24	24-way backplane screw-clamp connector

MTL4500 custom backplanes
Contact your local Eaton sales office for options and advice

MTL4500 backplane mounting accessories
DMK01	DIN-rail mounting kit, T- or G-section (pack of 40) 8-way backplanes require 4, 16-way backplanes require 6
SMS01	Surface mounting kit (pack of 40) 4- and 8-way backplanes require 4, 16-way backplanes require 6, 24-way backplanes require 8
HMP24	Horizontal mounting plate and screws for 19-inch rack mounting 24-way backplanes only
BMK08	Mounting kit for one 4- or 8-way backplane
BMK16	Mounting kit for one 16-way backplane

MTL4500 backplane accessories
ERK08	Earth rail kit for CPS08 backplane
ERK16	Earth rail kit for CPS16 backplane
TSK08	Tagging strip kit for CPS08 backplane
TSK16	Tagging strip kit for CPS16 backplane
TSK24	Tagging strip kit for CPS24 backplane
FUS1.0ATE5 Fuse kit,	1.0A (pack of 10)
FUS2.0ATE5 Fuse kit,	2.0A (pack of 10)
FUS2.5ATE5 Fuse kit,	2.5A (pack of 10)
FUS4.0ATE5 Fuse kit,	4.0A (pack of 10)
MCK45	MTL4000 backplane conversion kit (16 clip pairs per pack)
SCK45	Module 4-clip strips (10 strips + 40 rivets per pack)
MPL01	Module position label (blank) (50 per pack)
MCC45	Module backplane connector cover (pack of 50)

Literature
INM5500	MTL5500 range instruction manual
INM4500/ 4600	MTL4500/MTL4600 range instruction manual

Configurator and software
PCL45USB	Configurator, PC interface and software
PCS45	PC software

Please go to our website at www.mtl-inst.com for the latest information regarding safety approvals, certificates and entity parameters.

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