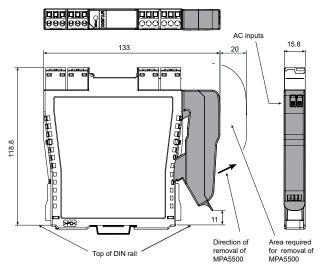
# MPA5500 A.C. POWER ADAPTOR

The MPA5500 enables any MTL5500 Series 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<sup>2</sup> 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 Series 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.

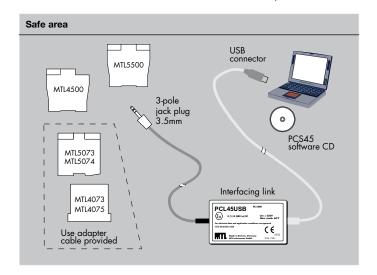
#### Standards compliance

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 series 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 series 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 2000, Windows XP or Windows 7 Consult MTL for operation with any other operating system, e.g. Windows Vista<sup>™</sup>.

#### Software medium

PCS45 supplied on CD

Updates are available at www.mtl-inst.com

#### Recommended minimum PC configuration

Microsoft Windows 2000, Windows XP or Windows 7

20MB of available hard disc space

CD ROM drive

Available USB port

Printer (local or network)

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



EUROPE (EMEA): +44 (0)1582 723633 enquiry@mtl-inst.com

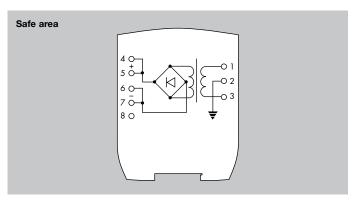
THE AMERICAS: +1 800 835 7075 csinfo@mtl-inst.com

ASIA-PACIFIC: +65 6 645 9888 sales.mtlsing@cooperindustries.com

EPS45/5500 Rev3 200913

# MTL5991 24V DC POWER SUPPLY

A DIN-rail mounted unit for locations where a dc supply is not readily available. The wide input power supply range makes this unit universally applicable and the 24V dc , 2A output will drive a useful number of MTL5000 and MTL5500 series modules.



#### **SPECIFICATION**

**Power supply** 

85 to 264V ac 47 to 63Hz

Power dissipation within unit

7.2W @ 2A

Mounting

35mm DIN (top hat) rail

Output voltage

24V dc nom (23.64 min/24.36 max)

**Output current** 

2A maximum (1.7A with <105V ac input)

**LED** indicators

Green: Power indication

Weight 310q

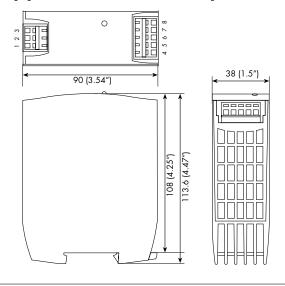
**Ambient temperature** 

Operating temperature -10°C to +50°C Storage temperature -40°C to +85°C

**Terminals** 

Cage clamp type accommodating conductors up to 2.5mm<sup>2</sup>, stranded or single-core

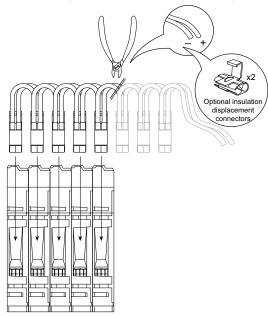
Note: Segregation between hazardous and safe area wiring must be maintained.



# MTL5500 SERIES POWERBUS KITS

PB - 8T,16T,24T,32T

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



#### **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:

 $\mathsf{PVC}$ 

Conductor:

24 strands of 0.2mm dia (0.75mm<sup>2</sup>) 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.

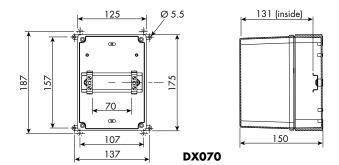
Note: To reduce the risk of excessive voltage drop or overcurrent do not connect powerbuses in series.

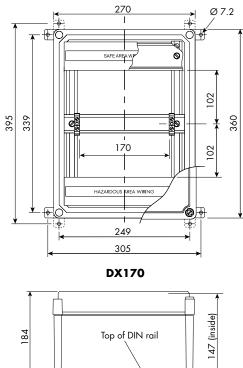


# MTL5500 SERIES

### **ENCLOSURES**

#### **DIMENSIONS (mm) AND MOUNTING**





#### **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 (except DX070)

Note: Isolators are not included.

#### Mounting

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

#### Tagging and earth rail

Accommodates MTL5500 Series 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)

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

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

#### **Ambient temperature limits**

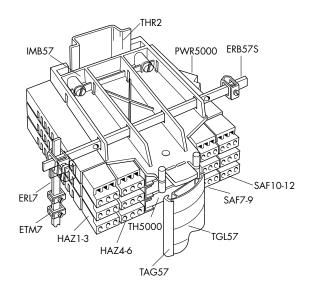
Dependent on units fitted. See instruction manual INM5500.



## MTL5500 SERIES

### **ACCESSORIES**

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



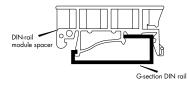
#### **MOUNTING**

#### THR2 DIN rail,1m length

DIN rail to EN50022; BS5584; DIN46277

#### MS010 DIN rail module spacer, 10mm, pack of 5

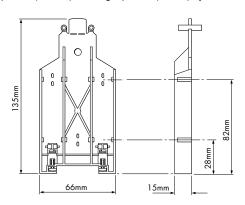
Grey spacer, one required between each MTL5533 or MTL5995-PS and any adjacent module on a DIN rail, to provide 10mm air-circulation space between modules



#### **EARTH RAILS AND TAG STRIP**

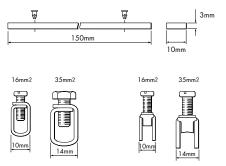
#### IMB57 Insulating mounting block

One required at each end of a tagging strip/earth rail. Suitable for low-profile (7.5mm) and high-profile (15mm) symmetrical DIN rail.



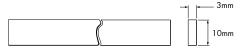
#### ERB57S Earth-rail bracket, straight

Nickel-plated; supplied with two push fasteners, one (14mm, 35mm<sup>2</sup>) earth-rail clamp and one (10mm, 16mm<sup>2</sup>) earth clamp.



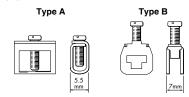
#### ERL7 Earth rail, 1m length

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  $\leq 4$ mm $^2$ . Exact dimension dependent on manufacturer.



#### TAG57 Tagging strip, 1m length

Cut to size. Supplied with tagging strip label suitable for MTL5000 or MTL5500 modules.



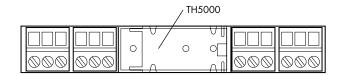
#### TGL57 Tagging strip labels, set of 10 x 0.5m

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 Series powerbus kits'



# CUSTOM, STANDARD AND UNIVERSAL BACKPLANES FOR EASY DCS INTEGRATION

- Total flexibility
- Special functions
- Reduce wiring
- Signal conditioning
- Simplify installation
- HART® integration

The MTL4500 Series 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**

MTL provides a complete design and manufacturing service for customised backplanes. Customised backplanes give the vendors and users of process control and safety systems the opportunity to integrate MTL4500/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 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

**Bently-Nevada** 

**Emerson** 

M Series, S Series

Foxboro

IA FBM & FBM2xx

HIMA

HIMax

Honeywell

PMIO, C200, C300, UPIO

Honeywell-SMS

Safety Manager, USIO

ICS

Triplex, Plantguard

**Rockwell Automation** 

Schneider Modicon

Siemens

ET200, S7

Triconex

Tricon, Trident

Yokogawa

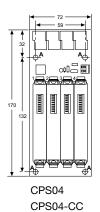
Centum R3, VP, Prosafe RS, CS3000

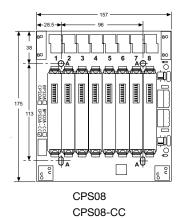
#### MTL CPS STANDARD BACKPLANES

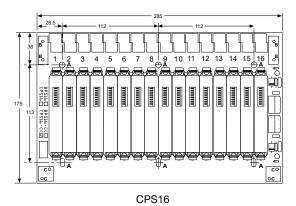
			MOUNTING KITS			ACCESSORIES		
Backplane model no.	Number of modules	Safe-area connections	Surface	DIN-rail (T or G)	19–inch rack	Earth–rail kit	Tagging strip kit	Spare fuse pack
CPS04	4	Screw-clamp	SMS01	DMK01	-	-		FUS1.0ATE5
CPS08	8	Screw-clamp	SMS01	DMK01	-	ERK08	TSK08	FUS1.0ATE5
CPS16	16	Screw-clamp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



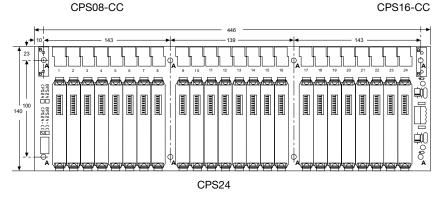
#### **CPS BACKPLANE DIMENSIONS (mm)**







-CC - Conformal Coating



#### Power requirements, Vs

21V dc to 35V dc through plug-in connectors

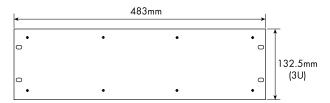
#### Safe-area connections

CPS: 2.5mm<sup>2</sup> screw-clamp terminals – 6 positions per module

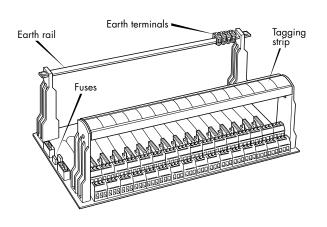
#### Weight (without modules or accessories)

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

#### HMP24 - 19" RACK MOUNTING PLATE FOR CPS24



#### **BACKPLANE ACCESSORIES**



#### SCK45 - backplane clips



MCK45 - backplane clips





## **CUSTOM BACKPLANES**

MTL4500 series backplanes can be customised for specific applications and customer's requirements. All the signals on the backplane are 'safearea' so custom designs are possible without the need for certification. MTL 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 SERIES**

FTA	Size	Function	MTL modules	
CP-DYNB-AIO	В	16ch analogue input /output	MTL4541, 4546Y, 4575	
CP-DYNB-Al250	В	16ch analogue input	MTL4541, 4575	
CP-DYNA-2AIO	Α	16ch analogue input / output	MTL4544, 4549Y	
CP-DYNB-DI	В	16ch digital input	MTL4511, 4514	
CP-DYNB-DILF	В	16ch digital input with LFD	MTL4514	
CP-DYNB-2DI	В	32ch digital input	MTL4513, 4516, 4517	
CP-DYNB-4DI	В	48ch digital input	MTL4510	
CP-DYNB-DO	В	16ch digital output	MTL4521, 4521L	

#### **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 series of connector which provide a reliable and high density solution.

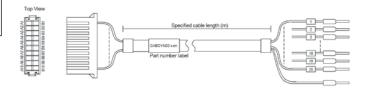


#### **CABLES**

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

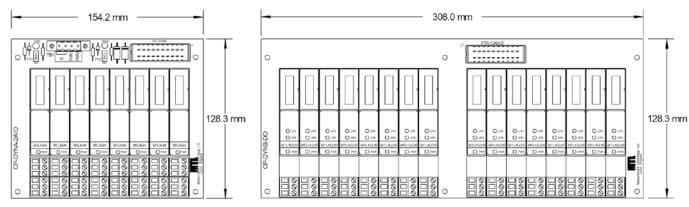
#### Cable ordering code

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
CABDYN20-20	20m
CABDYN20-25	25m
CABDYN20-30	30m





#### **CP-DYN DIMENSIONS**

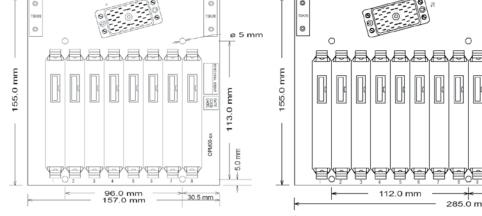


For full technical details please contact MTL.

#### **CPELCO SERIES**

A range of dedicated backplanes to interface with MTL4500 series 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 Al 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	MTL4541/4575/4546Y	Elco38 x 1
CPM16-2AIO	32ch Al 4-20mA	MTL4544/4576/4549Y x 16	Elco38 x 2
CPM16-2AV	32ch Al 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



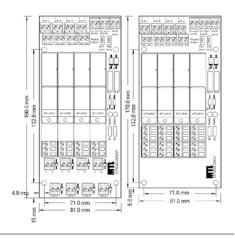
For full technical details please contact MTL.

# 

#### **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.





#### **ORDERING INFORMATION**



#### MTL4500/5500 Series 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 9SAF10-12 Safe-area plug, terminals 10, 11 and 12PWR5000 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

IMB57Insulating mounting blockERB57SEarth-rail bracket, straightERL7Earth-rail, 1m lengthETM7Earth terminal, bag of 50TAG57Tagging 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 MTL 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 mounting24-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 Series instruction manual INM4500 MTL4500 Series 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.

