

MTL TP-AC range

Transmitter mounting surge protector

1 INTRODUCTION

The TP-AC range of surge protectors provide surge protection for field mounted process transmitters and is available for 1/2" NPT, 20mm ISO and G1/2" threaded conduit entries. The TP-AC range can be used in hazardous areas. More details of this are shown throughout this installation guide.

2 IMPORTANT SAFETY INFORMATION



WARNING

- In Ex d / explosion proof applications where explosive gases may be present, the loop must be isolated before any Ex d / explosion proof covers are removed.
- The TP range must be installed, operated and maintained by trained competent personnel.
- The TP unit must not be subjected to mechanical or thermal stresses in excess of those outlined in the specification or FM certificate.
- The TP range must not be installed in an area where it may be attacked by aggressive substances.
- Where hazardous area protection concepts are being applied the product must be installed in accordance with the requirements of the FM certificate.



WARNING

- The 'transmitter' must be electrically isolated during the installation procedure.
- All installation and maintenance must be carried out in accordance with all appropriate international, national and local standard codes of practice and site regulations and in accordance with the instructions contained within this manual.

3 INSTALLATION

3.1 Select conduit entry to be used for installation, and remove any blanking plug.

NOTE

If direct installation onto the apparatus itself is impossible e.g. because all conduit entries are in use already, use the TP-ACS range which includes a conduit hub.

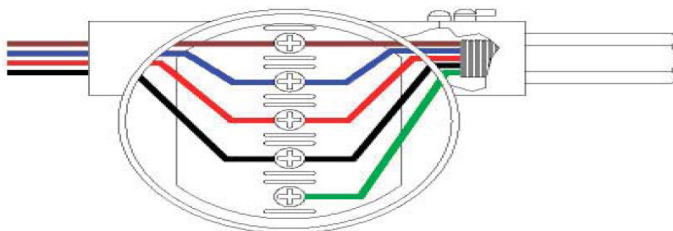
The TP-AC is supplied with 300mm leads, which should be sufficient for them to reach the transmitter terminals from a junction box. If these leads are not long enough then use supplementary terminals and wiring. Installation should be within 1m of, and bonded to, the transmitter.

- 3.2** Ensure that the TP-AC body thread matches the conduit entry. Thread types are not interchangeable, but adapters may be used where necessary.
- 3.3** Remove apparatus terminal housing cover.
- 3.4** Insert connecting wires into apparatus body and start threading unit into conduit entry using moderate handforce, with lubricants as necessary.
- 3.5** Tighten fully (hand-tight plus 1/2 turn of 23mm A/F spanner). The steel body of the TP-AC is not used as part of the electrical circuit, therefore sealing of the thread with PTFE tape or other sealing compounds will not affect the performance of the TP-AC.

NOTE

In Explosionproof (Ex d) applications, sealing of the thread is not permitted - The TP should be treated in the same way as any other cable gland hub into similar equipment.

- 3.6** For effective protection, the leads of the TP-AC should be as short as possible. Before wiring to the transmitter terminals, cut the leads to the appropriate length and strip back 10mm of insulation. Do not try to coil excess lengths of cable into the transmitter housing as this will degrade the protection given by the surge protector.
- 3.7** Connect the flying leads to the terminals indicated on below;-




NOTE

The protection circuit needs to be connected in parallel with the transmitter, not in series. Many transmitters offer linked terminals to avoid installation with multiple wires in each terminal. If your transmitter does not, then use an appropriate termination method e.g. ring-tag, piggy-back Faston tab, split ferrule etc. to complete the connection satisfactorily.

- 3.8** Ensure that all connections are tight, particularly the earth bonding connection, which is likely to be via a stud with in the apparatus terminal housing.
- 3.9** Refit apparatus terminal housing cover. Reconnect circuit if it was previously isolated.

	LINE	NEUTRAL	Signal	Earth/Ground
TP-AC TP-ACS	Brown	Blue	N/A	Green/Yellow
TP-ACFF TP-ACSFF	Brown	Blue	Red = Signal + Black = Signal-	Green/Yellow
TP-AC420 TP-ACS420	Brown	Blue	Red = Signal + Black = Signal-	Green/Yellow
TP-AC485 TP-ACS485	Brown	Blue	Red = Signal + Black = Signal-	Green/Yellow

4. EARTHING / GROUNDING

	<p>WARNING</p> <p>The enclosure does not provide an external or internal connection for earthing or grounding the enclosure. It is the user's responsibility to provide adequate earth continuity via the mounting arrangements for all locations and all protection methods.</p>
---	--

The TP-AC earth wire (Green/Yellow) should be connected to the earth terminal or stud usually provided inside the transmitter housing. In the unlikely event that no such stud exists, make the connection to a structural mounting part, such as a terminal block fixing screw.

5. MAINTENANCE

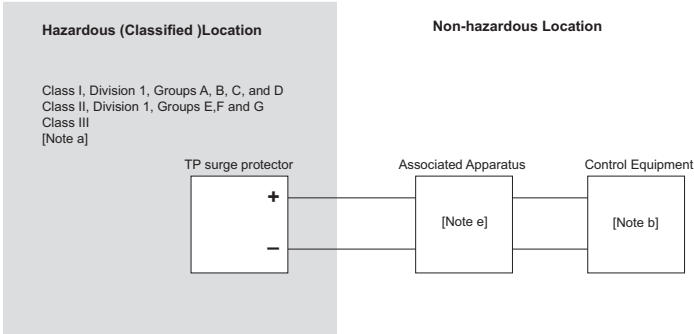
At intervals of not more than one year (more frequently for particularly harsh environments) visually check the installation and ensure that:

- i) Device and/or enclosure is firmly attached to mounting
- ii) There are no signs of external damage or corrosion
- iii) Interconnecting cables are not frayed or otherwise damaged
- iv) All connections are properly made with clear labelling

If this unit suffers damage send it back to your local sales office for evaluation which should only be carried out by Eaton's MTL trained personnel. This product is not field repairable.

6. APPROVALS

In hazardous locations check the marking on the device to ensure that is appropriate for the application.



NOTES

- a) Dust-tight conduit seal must be used when installed in Class II and Class III environments.
- b) Control equipment connected to the Associated Apparatus must not use or generate more than 250Vrms or Vdc.
- c) Installation in the U.S. should be in accordance with ANSI/ISA RP12.6 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code® (ANSI/NFPA 70) Sections 504 and 505.
- e) Associated Apparatus manufacturer's installation drawing must be followed when installing this equipment.

AUSTRALIA

MTL Instruments Pty Ltd,
10 Kent Road, Mascot, New South Wales, 2020, Australia
Tel: +61 1300 308 374 Fax: +61 1300 308 463
E-mail: mtlsalesanz@eaton.com

BeNeLux

MTL Instruments BV
Ambacht 6, 5301 KW Zaltbommel
The Netherlands
Tel: +31 (0) 418 570290 Fax: +31 (0) 418 541044
E-mail: mtl.benelux@eaton.com

CHINA

Cooper Electric (Shanghai) Co. Ltd
955 Shengli Road, Hading Industrial Park
Pudong New Area, Shanghai 201201
Tel: +86 21 2899 3817 Fax: +86 21 2899 3992
E-mail: mtlcn@eaton.com

FRANCE

MTL Instruments srl,
7 rue des Rosières, 69410 Champagne au Mont d'Or
France
Tel: +33 (0)4 37 46 16 53 Fax: +33 (0)4 37 46 17 20
E-mail: mtlfrance@eaton.com

GERMANY

MTL Instruments GmbH,
Heinrich-Hertz-Str. 12, 50170 Kerpen, Germany
Tel: +49 (0)22 73 98 12-0 Fax: +49 (0)22 73 98 12-2 00
E-mail: cskkerpen@eaton.com

INDIA

MTL India,
No.36, Nehru Street, Off Old Mahabalipuram Road
Sholinganallur, Chennai- 600 119, India
Tel: +91 (0) 44 24501660/24501857 Fax: +91 (0) 44 24501463
E-mail: mtlindiasales@eaton.com

ITALY

MTL Italia srl,
Via San Bovio, 3, 20090 Segrate, Milano, Italy
Tel: +39 02 959501 Fax: +39 02 95950759
E-mail: chmninfo@eaton.com

JAPAN

Cooper Crouse-Hinds Japan KK,
MT Building 3F, 2-7-5 Shiba Daimon, Minato-ku,
Tokyo, Japan 105-0012
Tel: +81 (0)3 6430 3128 Fax: +81 (0)3 6430 3129
E-mail: mtl-jp@eaton.com

NORWAY

Norex AS
Fekjan 7c, Postboks 147,
N-1378 Nesbru, Norway
Tel: +47 66 77 43 80 Fax: +47 66 84 55 33
E-mail: info@norex.no

RUSSIA

Cooper Industries Russia LLC
Elektrozavodskaya Str 33
Building 4
Moscow 107076, Russia
Tel: +7 (495) 981 3770 Fax: +7 (495) 981 3771
E-mail: mtlrussia@eaton.com

SINGAPORE

Cooper Crouse-Hinds Pte Ltd
No 2 Serangoon North Avenue 5, #06-01 Fu Yu Building
Singapore 554911
Tel: +65 6 645 9888 Fax: +65 6 487 7997
E-mail: sales.mtsing@eaton.com

SOUTH KOREA

Cooper Crouse-Hinds Korea
7F Parkland Building 237-11 Nonhyun-dong Gangnam-gu,
Seoul 135-546, South Korea
Tel: +82 6380 4805 Fax: +82 6380 4839
E-mail: mtl-korea@eaton.com

UNITED ARAB EMIRATES

Cooper Industries/Eaton Corporation
Office 205/206, 2nd Floor SJ Towers, off. Old Airport Road,
Abu Dhabi, United Arab Emirates
Tel: +971 2 44 66 840 Fax: +971 2 44 66 841
E-mail: mtgulf@eaton.com

UNITED KINGDOM

Eaton Electric Limited,
Great Marlings, Butterfield, Luton
Beds LU2 8DL
Tel: +44 (0)1582 723633 Fax: +44 (0)1582 422283
E-mail: mtlenquiry@eaton.com

AMERICAS

Cooper Crouse-Hinds MTL Inc.
3413 N. Sam Houston Parkway W,
Suite 200, Houston TX 77086, USA
Tel: +1 281-571-8065 Fax: +1 281-571-8069
E-mail: mtl-us-info@eaton.com