



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BAS 14.0124X issue No.:2

Status: Current

Date of Issue: 2016-11-16 Page 1 of 4

Certificate history:
Issue No. 2 (2016-11-16)
Issue No. 1 (2014-12-11)
Issue No. 0 (2014-11-12)

Applicant: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom

Equipment: **MTL4851 & MTL4852 HART Multiplexer System**
Optional accessory:


Type of Protection: **Type of Protection 'n'**

Marking: **Ex nA IIC T4 Gc (-40°C to +70°C)**

Approved for issue on behalf of the IECEx Certification Body: R.S. Sinclair

Position: Technical Manager

Signature:
(for printed version)


16 NOVEMBER 2016

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom





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Manufacturer: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom

Additional Manufacturing location(s):

**MTL Instruments Pvt
Limited**
No 3 Old Mahabalipuram
Road
Sholinganallur
Chennai 600119
India

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition: 6.0

IEC 60079-15 : 2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition: 4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/BAS/ExTR14.0238/00

GB/BAS/ExTR14.0348/00

GB/BAS/ExTR16.0298/00

Quality Assessment Report:

GB/BAS/QAR06.0022/06

GB/BAS/QAR07.0017/06



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The MTL4851 & MTL4852 HART Multiplexer System is designed to provide an interface between 'Smart' 4/20mA HART Field devices located in a Zone 2 hazardous area and Control / Safety systems located either in non-hazardous area or a Zone 2 hazardous area via a RS485 communication link.

The system comprises a MTL4851 Master Multiplexer Module and up to fifteen MTL4852 Slave HART Multiplexers modules mounted on interconnected Master and Slave Backplanes that provide the external connection facilities for the system, either directly or via separately certified HART Connection Units.

The MTL4851 Master Multiplexer Module provides the multiplexing of up to 16 individual field devices, making them addressable and identifiable. The MTL4851 in addition to the multiplexer circuitry contains the RS485 circuitry permitting communication with the Control / Safety System, alarm monitoring circuitry to allow the system to be monitored and interface circuitry for connection to MTL4852 Slave Multiplexer Modules via the backplanes. The MTL4851 provides power and transient protection to the other modules fitted in the system.

Each MTL4852 Slave HART Multiplexer Module fitted in the system providing multiplexing of up to 16 additional individual field devices. The MTL4852 comprises similar multiplexing circuitry to the MTL4851 and interconnects with the MTL4851 via the backplanes.

External connections to the MTL4851 Master Multiplexer and MTL4852 Slave Multiplexer Modules are made via either the HMM64 Master & HMS64 Slave Backplanes or the HTP-SC16M-xxx Master & HTP-SC16S-xxx Slave Backplanes. When using the HMM64 & HMS64 Backplanes, external connections to the 'Smart' 4/20mA HART Field devices are made via separately certified HART Terminal Units such as the HCU16-xxx HART Connection Units which connect to these backplanes via plug and sockets connections. On the HTP-SC16M-xxx Master & HTP-SC16S-xxx Slave Backplanes the external connections to the 'Smart' 4/20mA HART Field devices are integral to the backplanes.

See Certificate Annex for further details of the System Configurations and Electrical Parameters.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 1) The equipment must be installed in an area of not more than pollution degree 2 in accordance with IEC 60664-1, and in an enclosure that provides a minimum degree of protection of at least IP54 and complies with the relevant requirements of IEC 60079-0 and IEC 60079-15.
- 2) External connections to the equipment and internal connections between the modules forming the equipment must not be inserted or removed unless either the area in which the equipment is installed is known to be non-hazardous, or the circuits connected have been de-energised.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 2.1

To permit the manufacturer's name to be changed on the certificate and equipment marking. No other changes are made to the equipment design.

ExTR: GB/BAS/ExTR16.0298/00

File Reference: 16/0371

MTL4851 & MTL4852 HART Multiplexer System

The MTL4851 & MTL4852 HART Multiplexer System can be one of two different configurations dependent on the backplanes used.

The configurations are as follows: -

Configuration 1:

A MTL4851 Master HART Multiplexer Module and up to three MTL4852 Slave HART Multiplexer Modules can be mounted on a HMM64 Master Backplane providing monitoring for up to 64 'Smart' 4/20mA HART Field devices. To expand the system, up to three HMS64 Slave Backplanes can be connected to the HMM64 Backplane in a 'daisy chain' configuration, each with up to four MTL4852 Slave Modules fitted. This increases the system monitoring capacity to up to 256 'Smart' 4/20mA HART Field devices.

The System Power Supply, RS485 and Alarm Monitoring external connections are made via terminals on the HMM64 Master Backplane. The external connections to the 'Smart' 4/20mA HART Field devices are made via separately certified HART Connection Units, such as the HCU16-xxx HART Connection Units which plug into the HMM64 & HMS64 Backplanes via secured plug and socket connectors P1, P2, P3 & P4.

Configuration 2:

A MTL4851 Master HART Multiplexer Module mounted on the HTP-SC16M-xxx HART Master Multiplexer Backplane provides monitoring for up to 16 'Smart' 4/20mA HART Field devices. To expand the system, up to four HTP-SC16S-xxx HART Slave Multiplexer Backplanes, each with a MTL4852 Slave HART Multiplexer Module fitted can be connected in a 'daisy chain' configuration. This increases the system monitoring capacity to up to 80 'Smart' 4/20mA HART Field devices.

The System Power Supply, RS485 and Alarm Monitoring external connections are made via terminals on the HTP-SC16M-xxx HART Master Multiplexer Backplane. The external connections to the 'Smart' 4/20mA HART Field devices are made via Field & System screw terminals on the HTP-SC16M-xxx Master and HTP-SC16S-xxx Slave Backplanes.

The HTP-SC16M-xxx HART Master and HTP-SC16S-xxx Slave Multiplexer Backplanes are available with either none, series or parallel connected termination resistors fitted to the 'Smart' 4/20mA HART Field devices connections. The configuration is defined by the code at the end of the model number. The following variants of backplane can be used in the system configuration: -

HTP-SC16M	Master Multiplexer Backplane with no Termination Resistors fitted
HTP-SC16M-S240	Master Multiplexer Backplane with 240Ω series Termination Resistors fitted
HTP-SC16M-P250	Master Multiplexer Backplane with 250Ω parallel Termination Resistors fitted
HTP-SC16S	Slave Multiplexer Backplane with no Termination Resistors fitted
HTP-SC16S-S240	Slave Multiplexer Backplane with 240Ω series Termination Resistors fitted
HTP-SC16S-P250	Slave Multiplexer Backplane with 250Ω parallel Termination Resistors fitted

The various configurations of the equipment have the following input parameters: -

Input Parameters:

Power Connector Terminals: 1, 2 & 0V (Master Backplanes only)

Maximum Working Voltage = 35V d.c.

Alarm Output Terminals: OUT & 0V (Master Backplanes only)

Maximum Working Voltage = 35V d.c.

Maximum Input current = 10mA

RS485 Terminals A, B & C (Master Backplanes only)

RS485 Communications between the backplane and the Control / Safety System made using RS485 communication protocol.

HART Connection Unit Connectors P1, P2, P3 & P4 (HMM64 & HMS64 Backplanes only)

Plug and Socket Connectors P1, P2, P3 & P4 designed for connection to a suitably certified HART Connection Unit (e.g. HCU16-xxx HART Connection Unit) which provide external connection facilities for the individual field devices connected to the system.

Field Device Connection Terminals SYSTEM & FIELD Terminals 1A & 1B to 16A & 16B (HTP-SC16M-xxx & HTP-SC16S-xxx Backplanes only)

These terminals provide connection for up to sixteen individual 4/20mA HART Field devices.