

AMS Asset Monitor

Online Prediction, Protection, and Process Monitor



Copyright

© 2022 by Emerson. All rights reserved.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form by any means without the written permission of Emerson.

Disclaimer

This manual is provided for informational purposes. EMERSON MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Emerson shall not be liable for errors, omissions, or inconsistencies that may be contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material. Information in this document is subject to change without notice and does not represent a commitment on the part of Emerson. The information in this manual is not all-inclusive and cannot cover all unique situations.

Patents

The product(s) described in this manual are covered under existing and pending patents.

Contents

General.....	5	Hazardous location installation.....	15
Minimum hardware requirements.....	9	Certificates.....	19
First connection to the AMS Asset Monitor...	14		

-  Vermerk zur Installation der Messketten in explosionsgefährdeter Umgebung.
Soll die Messkette in explosionsgefährdeter Umgebung installiert werden, so ist auf die Einhaltung der in der Gebrauchsanweisung enthaltenen Installationshinweise zu achten. Sollten dabei sprachliche Schwierigkeiten auftreten, wenden Sie sich bitte an die Herstellerfirma, sie wird Ihnen eine Übersetzung der relevanten Artikel in der Landessprache des Verwendungslandes zukommen lassen.
-  Nota fuq l-installazzjoni tal-ktajjen tal-kejl f'ambjent esploziv
Jekk il-ktatina tal-kejl suppost li tigi installata f'ambjent esploziv, hu importanti li ssewji l-istruzzjonijiet pertinenti tal-manwal. Jekk issib xi diffikultà bil-lingwa, jekk joghgbok ikkuntatja lill-manifattur biex tikseb traduzzjoni tal-paragrafi rilevanti fil-lingwa mehtiega.
-  Anmärkning beträffande installation av mätkedjorna i explosionsfarlig miljö.
Ska mätkedjan installeras i explosionsfarlig miljö, måste de anvisningar följas som ges i instruktionsboken beträffande installationen. Skulle dävid språkproblem uppstå, ber vi dig kontakta det tillverkande företaget som då kommer att sända dig en översättning av de relevanta artiklarna på användningslandets språk.
-  Opomba za namestitve merilne verige v eksplozivno ogroženem okolju
Če se merilna veriga namešča v eksplozivno ogroženem okolju, je potrebno upoštevati namestitvena opozorila, ki so v Navodilih za uporabo. Če se pri tem pojavijo jezikovne težave, se posvetujte z izdelovalcem; poslali vam bodo prevod ustreznih člankov v jeziku države, kjer se naprava uporablja.
-  Záznam k inštalácii meracích reťazcov vo výbušnom prostredí
Ak má byť merací reťazec inštalovaný vo výbušnom prostredí, treba dbať na dodržiavanie pokynov k inštalácii, uvedených v návode na použitie. V prípade, že by sa pritom vyskytli jazykové problémy, obráťte sa prosím na výrobcu, ktorý Vám zašle preklad relevantných článkov v jazyku Vašej krajiny.
-  Nota referente à instalação de cadeias de agrimensor em ambientes potencialmente explosivos
Caso a cadeia de agrimensor deva ser instalada em um ambiente potencialmente explosivo, é imprescindível observar e cumprir as indicações de instalação das instruções de serviço. Caso tenha dificuldades idiomáticas, queira entrar em contato com a firma produtora, esta poderá enviar-lhe uma tradução dos capítulos mais importantes no idioma do país onde o produto deverá ser empregado.
-  Wskazówka dotycząca instalacji łańcuchów mierniczych w otoczeniach zagrożonych eksplozją.
Jeżeli łańcuch mierniczy ma być zainstalowany w otoczeniu zagrożonym eksplozją, należy uwzględnić wskazówki dotyczące instalacji, które są zawarte w instrukcji obsługi. Jeżeli w trakcie lektury wystąpią jakiegokolwiek problemy związane ze zrozumieniem tekstu, prosimy zwrócić się do producenta, który chętnie wykona tłumaczenie wybranych części dokumentacji na język danego kraju.
-  Opmerking m.b.t. installatie van elektrische meet circuits in explosiegevaarlijke omgeving
Dient de installatie van elektrische meet circuits in een explosiegevaarlijke omgeving te geschieden, moet men toezien dat de in de gebruikshandleiding opgenomen installatieinstructies worden nageleefd. Bij taalkundige problemen gelieve contact op te nemen met de fabrikant, deze zal u vervolgens een vertaling in de taal van het gebruiksland doen toekomen.
-  Pastaba dėl matavimo grandinės įrengimo sprogimo atžvilgiu pavojingoje aplinkoje
Jei matavimo grandinė turi būti įrengta sprogimo atžvilgiu pavojingoje aplinkoje, privaloma laikytis vartotojo instrukcijos pateiktų įrengimo nurodymų. Jei kiltų sunkumų dėl kalbos, prašome kreiptis į gamintojo įmonę, kuri pateiks Jums reikiama skyriaus vertimą į vartotojo valstybės kalbą.
-  Nota sull'installazione delle catene per misurazione in ambienti a rischio di esplosioni
Nel caso in cui si debbano installare le catene per misurazione in ambienti a rischio di esplosioni, è necessario attenersi alle avvertenze per l'installazione contenute nelle istruzioni d'uso. Per difficoltà di carattere linguistico, rivolgetevi alla ditta produttrice. Quest'ultima Vi farà pervenire una traduzione degli articoli rilevanti nella lingua del paese d'impiego.
-  Megjegyzés a mérőláncok robbanásveszélyes környezetben történő szereléséhez.
Ha a mérőláncot robbanásveszélyes környezetben kell felszerelni, akkor ügyeljen a Használati útmutatóban közölt szerelési utasítások betartására. Amennyiben nyelvi nehézségek merülnek fel, szíveskedjen a gyártó céghez fordulni, amely elküldni Önnök a felhasználó ország nyelvére lefordított, erre vonatkozó cikket.

Remarque concernant l'installation des chaînes de mesure dans un environnement présentant un risque d'explosion



Si la chaîne de mesure doit être installée dans un environnement présentant un risque d'explosion, il est impératif de veiller à respecter les consignes d'installation contenues dans les instructions de service. S'il devait ce faisant surgir des problèmes linguistiques, veuillez vous adresser à la société fabricante: elle vous fera parvenir une traduction des articles significatifs dans la langue du pays de mise en oeuvre.



Huomautus mittausketjun asentamisesta räjähdysalttiissa ympäristössä

Jos mittausketju tulee asentaa räjähdysalttiissa ympäristössä, on käyttöohjeessa annettuja asennusohjeita noudatettava. Jos käyttöohjeessa käytetty kieli aiheuttaa ongelmia, kääntykää valmistajayrityksen puoleen. Se toimittaa käyttöönnne tarvittavat artikkelit käyttömaan viralliselle kielelle käännettynä.



Juhend mõõdukettide ülespanemiseks plahvatusohtlikus piirkonnas.

Kui panna üles mõõdukettid plahvatusohtlikkus piirkonnas, nii tuleb jälgida kasutusjuhendis sisaldatud instalationimärkmeid. Juhul kui tekkivad raskused keelega, siis pöörduge palun tootja poole. Tootja saadab emakeelse tõlge vastavalt artiklile ning maale.



Notas sobre la instalación de cadenas de medición en un entorno potencialmente explosivo.

Si ha de instalar la cadena de medición en un entorno potencialmente explosivo, deberá respetar las indicaciones sobre la instalación, contenidas en el manual de uso. Si surgieran dificultades lingüísticas, póngase en contacto con la empresa fabricante, que le facilitará una traducción del artículo en la lengua del país donde se emplee.



Note on the installation of the measuring chains in an explosive environment

If the measuring chain is supposed to be installed in an explosive environment, it is important to follow the pertinent installation instructions in the manual. Should you encounter difficulties with the language, please contact the manufacturer to obtain a translation of the relevant paragraphs into the language required.



Σημείωση για την εγκατάσταση αλυσίδων μέτρησης σε περιβάλλον, στο οποίο υπάρχει κίνδυνος έκρηξης

Εάν η αλυσίδα μέτρησης πρόκειται να εγκατασταθεί σε περιβάλλον, στο οποίο υπάρχει κίνδυνος έκρηξης, πρέπει να τηρηθούν οπωσδήποτε οι οδηγίες εγκατάστασης που περιλαμβάνονται στις οδηγίες χρήσης. Εάν υπάρχουν γλωσσικές δυσκολίες κατανόησης, παρακαλούμε να απευθυνθείτε στην κατασκευαστρια εταιρεία, η οποία θα φροντίσει για την αποστολή μιας μετάφρασης του σχετικού άρθρου στη γλώσσα της χώρας χρήσης.



Info vedrørende installation af målekæderne i eksplosionstruede omgivelser

Hvis målekæden skal installeres i eksplosionstruede omgivelser, skal installationsanvisningerne i brugsanvisningen følges. Hvis der i denne forbindelse opstår sproglige problemer, bedes De henvende Dem til produktionsfirmaet, som så vil sørge for, at De modtager en oversættelse af den relevante artikel på Deres sprog.



Poznámka k instalaci měřicích řetězců v prostředí s nebezpečím výbuchu.

Když má být měřicí řetězec (sestávající z čidla a konvertoru) instalován v prostředí s nebezpečím výbuchu, tak je třeba respektovat instalační pokyny, které jsou součástí návodu k upotřebení. Kdyby při tom došlo k jazykovým potížím, tak prosíme kontaktujte výrobní firmu, která Vám relevantní článek zašle v jazyku krajiny použití.



Piezīme par mērīšanas ķēžu instalēšanu sprādzienbīstamās zonās.

Ja mērīšanas ķēde jāuzstāda sprādzienbīstamā zonā, ir jāievēro lietošanas instrukcijā dotie instalēšanas norādījumi. Ja rodas kādas valodas grūtības, lūdzu griezieties pie izgatavotāja firmas, kas Jums nosūtīs nozīmīgāko nodaļu tulkojumus lietotāja valsts valodā.

Emerson

epro GmbH

Jöbkesweg 3

48599 Gronau

Germany

T +49 2562 709 0

F +49 2562 709 401

www.Emerson.com

1 General

This quick start guide contains first steps in using the AMS Asset Monitor, information about the hazardous location installation, and certificates. For the complete installation guide and other technical documentation, go to <https://emerson.com/AMSAssetMonitor> and select **View Product**. For a current firmware file go to <https://guardian.emerson.com>.

The hazardous location approvals described in [Hazardous location installation](#), the EU Declaration of Conformity¹, and the AM 5820-IM China RoHS certificate do not apply to the blue AMS Asset Monitor – Marine Paint variant AM 5820-IM BL.

Table 1-1: Related documents

MHM-97925-PBF	Installation Guide AM 5125 VI Piezo CHARM
MHM-97929-PBF	Installation Guide VI Voltage CHARM
MHM-97930-PBF	Installation Guide VI Tach CHARM
MHM-97923-PBF	Installation Guide AMS Asset Monitor
MHM-97924-PBF	Operating Manual AMS Asset Monitor

Table 1-2: Product type and ordering numbers of AMS Asset Monitor, compatible DeltaV hardware, and accessories

Hardware	Product type number	Ordering number
AMS Asset Monitor	AM 5820-IM	SE8701T01-IM
AMS Asset Monitor – Marine Paint	AM 5820-IM BL	SE8701T01-IM2
+24 V DC Power Module	AM 5730	SE8701T02-IP
Address Terminal Screw Block	KL4502X1-DA1	KL4502X1-DA1
Address Terminal Plug #1	KL4501X1-BA1	KL4501X1-BA1
VI Piezo CHARM	AM 5125	SE8701V01-PZ
VI Voltage CHARM ¹	AM 5620	SE8701V02-VT
VI Tach CHARM ¹	AM 5312	SE8701V03-TH
RTD CHARM	KL3031X1-BA1	SE4303T03
Thermocouple/mV input CHARM	KL3032X1-BA1	SE4303T02

¹ AM 5820-IM BL EU Declaration of Conformity on request

Table 1-2: Product type and ordering numbers of AMS Asset Monitor, compatible DeltaV hardware, and accessories (continued)

Hardware	Product type number	Ordering number
AI 4 to 20 mA CHARM	KL3021X1-BA1	SE4303T01
DI 24 V DC Low-Side Sens (dry contact) CHARM	KL3003X1-BA1	SE4301T02
DO 24 V DC High-Side CHAR	KL3002X1-BA1	SE4302T01
Standard Terminal Block	KL4502X1-BA1	SE4501
Thermocouple/mV Terminal Block	KL4502X1-NA1	SE4504
Relay Output Terminal Block	KL4502X1-MA1	SE4503
Channel Identifier Label/Wiring Cover (8 pcs)	---	SE4606T04
Universal mounting bracket	---	SE8701UMB

1 Requires an AMS Asset Monitor with firmware version 2.0.x or higher.

⚠ DANGER

Because the device is electrical equipment, commissioning and service must be performed only by trained and authorized personnel. Maintenance must be carried out only by trained, specialized, and experienced personnel.

⚠ DANGER

The KL4502X1-MA1 CHARM Relay Output Terminal Block may have hazardous live voltages on its output terminals. This terminal block is capable to switch field power of 250 V AC. Ensure that proper safety precautions, such as de-energizing field power, are observed during installation, maintenance, or any time wiring changes are made to the CHARM Relay Output Terminal Block.

1.1 Symbols

Note

This symbol marks passages that contain important information.

⚠ CAUTION

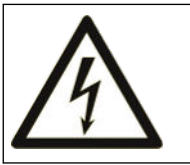
This symbol marks operations that can lead to malfunctions or faulty measurements, but will not damage the device.

⚠ DANGER

A danger indicates actions that can lead to property damage or personal injury.



According to IEC 61010, this symbol means that this device must be operated with DC voltage.



Warning, electric shock hazard.



According to IEC 61010, this symbol means that the documentation of the device must completely be read and understood before installing and commissioning of the device. Observe all safety related instructions in this document.

1.2 CCC Certification – AMS Asset Monitor

With the announcement of the Chinese market regulation authority SAMR (State Administration for Market Regulation), a Compulsory Product Certification (CCC certification) is mandatory for many explosion protection products. This explosion proof (“Ex”) product complies to the CCC obligation and is certified (certification number: 2020322309002379).



This China Compulsory Certificate mark (CCC), is a compulsory safety mark for many products imported, sold, or used in the Chinese market and indicates that the product is certified in accordance to GB 3836.1-2010, GB 3836.4-2010, and GB 3836.8-2014. If the product label is too small to contain the CCC certification mark it is sufficient to have the mark printed on the minimum package and in the attached document.

1.3 Technical support

You may need to ship this product for return, replacement, or repair to an Emerson Product Service Center. Before shipping this product, contact

Emerson Product Support to obtain a Return Materials Authorization (RMA) number and receive additional instructions.

Product Support

Emerson provides a variety of ways to reach your Product Support team to get the answers you need when you need them:

Phone	Toll free 800.833.8314 (U.S. and Canada) +1.512.832.3774 (Latin America) +63.2702.1111 (Asia Pacific, Europe, and Middle East)
Email	Guardian.GSC@Emerson.com
Web	http://www.emerson.com/en-us/contact-us

To search for documentation, visit <http://www.emerson.com>.

To view toll free numbers for specific countries, visit <http://www.emersonprocess.com/technicalsupport>.

Note

If the equipment has been exposed to a hazardous substance, a Material Safety Data Sheet (MSDS) must be included with the returned materials. An MSDS is required by law to be available to people exposed to specific hazardous substances.

2 Minimum hardware requirements

The AMS Asset Monitor BASE hardware consists of a rugged enclosure with internal electronics designed to support up to 12 CHARMS, an address module, and a AM 5730 +24 V DC Power Module. The BASE unit provides the infrastructure that connects the CHARMS and their field signal to the integrated analytics. For communication and configuration, the AMS Asset Monitor is equipped with three Ethernet interfaces.

The following parts are required to connect to the AMS Asset Monitor BASE and to the system:

- +24 V DC / 4 A external power supply
- PC with one free Ethernet port for a direct one-to-one connection to the AMS Asset Monitor.
- The PC must have a compatible web browser installed.

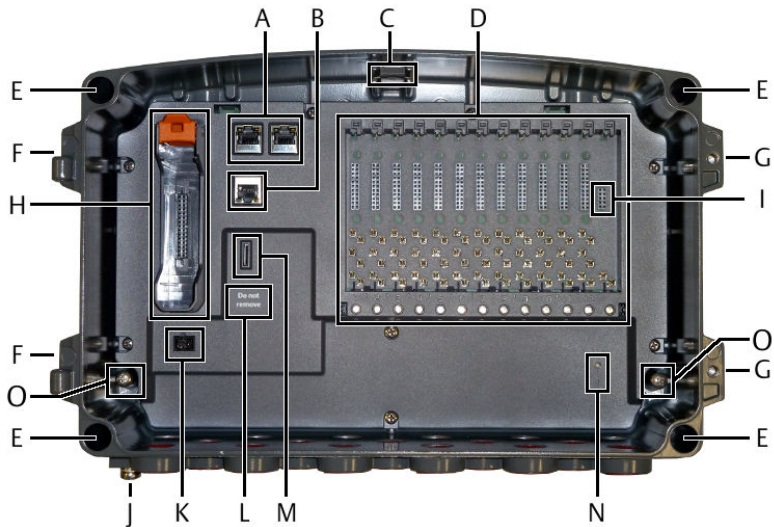
Web browser	Version
Google Chrome	78.0 or later
Microsoft Edge	79.0 or later
Mozilla Firefox	70 or later
Apple Safari	12.1 or later

- Ethernet cable (CAT 5 or better)

2.1 Hardware overview and preparation

For the first commissioning, the AMS Asset Monitor must have installed at least the +24 V DC Power Module and an address plug.

[Figure 2-1](#) provides an overview of the AMS Asset Monitor hardware.

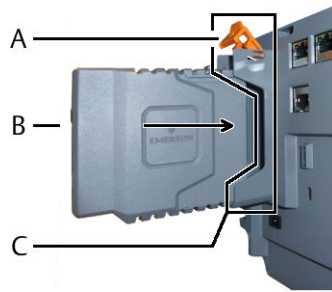
Figure 2-1: Overview AMS Asset Monitor

- A. Ethernet switch with two RJ-45 connectors (left connector: LAN2.1, right connector LAN2.2) to daisy chain AMS Asset Monitors, speed 100 Mbit
- B. RJ-45 Ethernet connector LAN1 for configuration and connection to subsequent systems, speed 1 Gbit
- C. Status light
- D. CHARM baseplate with 12 slots for up to 12 CHARM terminal blocks, 12 CHARMS, and a CHARM labeling component
- E. Mounting holes
- F. Door hinge
- G. Screws holes for securing the door
- H. Power module slot
- I. Address plug slot
- J. External grounding terminal
- K. Power supply terminals
- L. Covered. Non-functional. For internal use only.
- M. microSD Card slot (for future use)
- N. Reset button with status LED
- O. Internal grounding terminals

+24 V DC Power Module installation and connection

1. Install the +24 V DC Power Module as shown in [Figure 2-2](#).

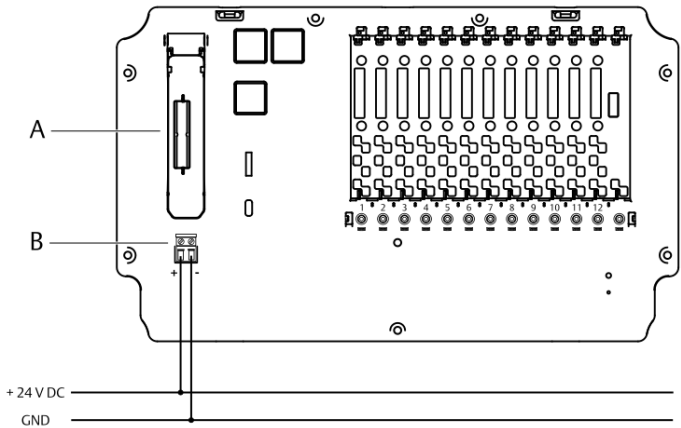
Figure 2-2: +24 V DC Power Module



- A. Latch in open position
- B. +24 V DC Power Module
- C. +24 V DC Power Module slot

2. Connect a +24 V DC power supply.

Figure 2-3: Power supply connection

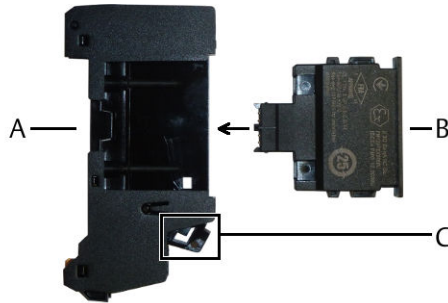


- A. +24 V DC Power Module slot
- B. Power supply terminal plug

Address plug installation

Install the CHARM Address Terminal Block and the Address Plug. See [Figure 2-1](#) for the location of the required slot.

Figure 2-4: Address Plug



- A. CHARM Address Terminal Block
- B. Address Plug
- C. Latch in open position

CHARM installation

1. Select the slot where the CHARM must be installed. CHARMs can be installed in slots 1 to 12.
2. Hook the CHARM Terminal Block into the lower part of the needed slot and push it in.

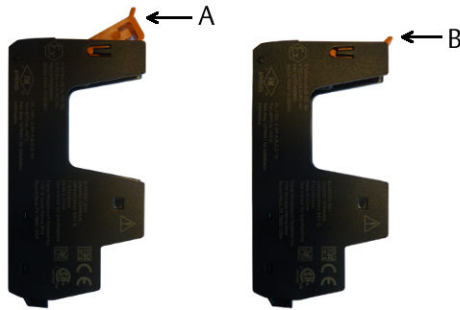
Figure 2-5: CHARM Terminal Block installation



The CHARM Terminal Block locks with an audible click.

3. Ensure that the latch of the CHARM Terminal Block is in the open position. If the latch is in the closed position, move it outwards to open it.

Figure 2-6: Latch positions



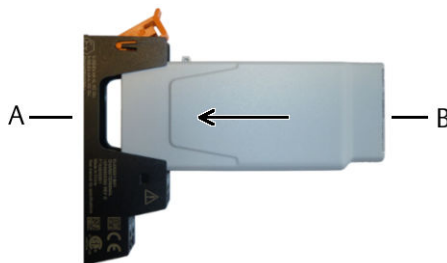
- A. Latch open
- B. Latch close

4. Gently push the CHARM straight into the CHARM Terminal Block installed before. The CHARM latch locks with an audible click in the closed position.

⚠ DANGER

Do not try to install a CHARM into a CHARM Terminal Block with keying posts set for another CHARM type. This might damage the terminal block and CHARM. Always reset the keying post settings before installing another CHARM.

Figure 2-7: CHARM Installation



- A. CHARM Terminal Block
- B. CHARM

5. Wire the CHARM Terminal Block according to the requirements of the installed CHARM.

3 First connection to the AMS Asset Monitor

Procedure

1. Ensure that the AMS Asset Monitor is powered by a +24 V DC power supply.
2. Open the AMS Asset Monitor.
3. Connect the PC to the AMS Asset Monitor.
Use the lower socket of the three RJ-45 sockets (see [Hardware overview and preparation](#)).
4. Ensure that the Ethernet settings of the PC aligns to the default IP address of the AMS Asset Monitor.
5. Start your web browser and enter the default AMS Asset Monitor IP address: **169.254.153.110**.
6. The web browser indicates an insecure connection. Ignore this warning and continue to connect to the AMS Asset Monitor until you reach the login dialog.
Add the certificate, created by the AMS Asset Monitor, to your web browser to enable encrypted communication.
7. Enter user name and password to log into AMS Asset Monitor Web Interface, the web served interface.
Credentials for the first login:
User name: **admin**
Password: **admin**
The home screen of AMS Asset Monitor Web Interface opens.
8. Configure the AMS Asset Monitor according to the requirements of the assets to be monitored.

4 Hazardous location installation

Version 2.1

4.1 General installation requirements

The AMS Asset Monitor must be solely connected to SELV/PELV electrical circuits to meet the requirements for explosion protection. This also applies to all devices connected to the AMS Asset Monitor. Exceptions are explicitly stated. In version 1.0, the Relay Terminal Block is approved for voltages up to 250 V. An installation in Zone 2 is permitted if the conditions stated in the following chapters are met.

Ensure a distance of at least 50 mm between the outer edge of the terminals used for intrinsically safe field installation wiring and all other circuits or wirings.

Use wire types and wiring apparatus with a temperature rating $\geq 70^{\circ}\text{C}$.

4.2 Connection requirements

The wire cross-section of the used cables must be within the range of $0.34 < F < 2.5 \text{ mm}^2$. Use ferrules at stranded conductors.

Connect the shield of the Ethernet cable to ground at the remote station. Integrate the grounding of all cable shields into to potential equalization system.

All used connectors (Ethernet- and power supply terminals) must be locked. Ensure this besides using suitable connectors by using cable glands, suitable for the respective cable diameter approved for the use in potentially explosive atmospheres.

Only use the USB port at open field housing, which requires a hazard-free environment.

4.3 Special conditions of safe use

1. The end user shall ensure appropriate earthing upon installation. The transmission resistance for SELV/PELV circuits must not exceed $10^9 \Omega$. For the grounding of hazardous live voltages comply with the additional requirements of protective grounding.
2. Electrostatic charging during operation and maintenance has to be excluded. The device shall only be installed in areas where operational and process related electrostatic charges are not present.
3. Final acceptance of this equipment when installed is subject to the jurisdiction of the local inspection authority. The DeltaV CHARMs

have their own component certification to be assessed within the overall system.

The following warnings must be observed:

- **WARNING: EXPLOSION HAZARD - DO NOT CONNECT OR DISCONNECT WHILE CIRCUITS ARE LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS**
AVERTISSEMENT: RISQUE D'EXPLOSION- NE PAS CONNECTER OU DECONNECTER TANT QUE LES CIRCUITS SONT SUR TENSION SEULEMENT SI LA ZONE EST CONNU POUR ÊTRE NON DANGEREUX
- **WARNING: DO NOT USE USB PORT UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS**
AVERTISSEMENT: NE PAS UTILISER PORT USB SEULEMENT SI LA ZONE EST CONNU POUR ÊTRE NON DANGEREUX
- **WARNING: EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE CHARM MODULES UNLESS POWER HAS BEEN DISCONNECTED OR THE AREA IS FREE OF IGNITIBLE CONCENTRATIONS**
AVERTISSEMENT: RISQUE D'EXPLOSION. NE PAS ENLEVER OU REMPLACER LES MODULES DE CHARME À MOINS QUE L'ALIMENTATION SOIT DÉCONNECTÉE OU QUE LA ZONE SOIT EXEMPT DE CONCENTRATIONS IGNITIBLES
- **WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY**
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE
- **WARNING: DO NOT OPEN ENCLOSURE IN A DUST HAZARDOUS AREA**
AVERTISSEMENT: NE PAS OUVRIR DANS UNE ZONE À RISQUE D'EXPLOSION DE POUSSIÈRES

4.4 Technical data, explosion protection

The AMS Asset Monitor is checked and certified for the following, if connected to SELV/PELV – electrical circuits for use in potentially explosive atmospheres:

IECEX/ATEX/CSA		
Type of protection		non-sparking nA in combination with nC and [ic], depending on the installed CHARMs
Identification	IECEX/ATEX	II 3G Ex ec nA nC [ic] IIC T4 Gc III 2D Ex tb [ic] IIIC T75°C Db

IECEx/ATEX/CSA		
	CSA	Class I, Zone 2 Ex/AEx ec nA nC [ic] IIC T4 Gc Class I, Div 2 Group A, B, C, D T4 Zone 22 Ex/AEx tc [ic] IIIC T75°C Dc Class II, Div 2 Group F, G T75°C Class III
Temperature range		-40°C < Tamb < 55°C
Standards	IECEx	IEC 60079-0:2017; Edition 7.0 IEC 60079-7:2017; Edition 5.1 IEC 60079-11:2011; Edition 6.0 IEC 60079-15:2010; Edition 4.0 IEC 60079-31:2013; Edition 2.0
	ATEX	EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1:2018 EN 60079-11:2012 EN 60079-15:2010 EN 60079-31:2014
	CSA	CAN/CSA-C22.2 No. 0-10 CAN/CSA-C22.2 No. 61010-1:12 + Amd 1-18 CAN/CSA C22.2 No. 94.2-15 CAN/CSA-C22.2 No. 60079-0:15 CAN/CSA C22.2 No. 60079-0:19 CAN/CSA-C22.2 No. 60079-11:14 CAN/CSA-22.2 No. 60079-15:16 CAN/CSA C22.2 No. 213-17 CAN/CSA-C22.2 No. 60529:16 IEC 60529:2013 + COR2:2015 NEMA ANSI/IEC 60529-2004 (R2011) ANSI/UL 50E (Second Edition) ANSI/UL 61010-1 (Third Edition) ANSI/UL 121201-2017 (Ninth Edition (R2019)) ANSI/UL 60079-0-2019 (Seventh Edition) ANSI/UL 60079-11-2014 (Sixth Edition) ANSI/UL 60079-15-2013 (Fourth Edition (R2017))

IECEX/ATEX/CSA	
IECEX approval number	IECEX BVS 20.0001X
ATEX approval number	BVS 20 ATEX E 001 X
CSA approval number	19CA70218089 X

4.5 Revision history

Version	Date	Remarks/Changes
1.0	30. April 2020	Initial version
2.0	24. February 2021	Update technical data Dust hazardous area certification
2.1	18. May 2021	Update certification

5 Certificates



EU-Declaration of Conformity (Translation)

We: epro GmbH, Jöbkesweg 3, 48599 Gronau

declare under our sole responsibility that following product(s):

Product designation:	AMS Asset Monitor	
Product description:	Online Prediction, Protection and Process Monitor	
Part numbers	AM5820-IM	AMS Asset Monitor Base - Imperial Threaded Unit
	AM5730	AMS Asset Monitor – +24V SC Power Module
	AM5125	VI Pizzo CHARM
	AM5620	VI Voltage CHARM
	AM5312	VI Tach CHARM
	KL4502X1-BA1	Standard Terminal Block

are in conformity with the terms of the directives mentioned below including any amendment valid at the date of declaration:

2014/30/EU	Electromagnetic compatibility
2014/34/EU	Equipment and protective system intended for use in potentially explosive atmospheres
2011/65/EU	The restriction of the use of certain hazardous substances in electrical and electronic equipment

Following harmonized standards have been applied:

2014/30/EU	EN 61326-1	Electrical equipment for measurement, control and laboratory use. EMC requirements.
2014/34/EU	EN 60079-0	Part 1: General requirements Explosive atmospheres -
	EN 60079-7	Part 0: Equipment- General requirements Explosive atmospheres -
	EN 60079-11	Part 7: Equipment protection by increased safety "e" Explosive atmospheres- Part 11: Intrinsic Safety „i“
	EN 60079-15	Explosive atmospheres- Part 15: Equipment protection by type of protection "n"
	EN 60079-31	Explosive atmospheres- Part 31: Equipment dust ignition protection by enclosure "t"
2011/65/EU	EN IEC 63000	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

For the type examination according to EN 60079-0, EN 60079-7, EN 60079-11, EN 60079-15 and EN 60079-31 the following notified body has been involved;

DEKRA EXAM GmbH
Type examination certificate BVS 20 ATEX E 001 X

Authorized person for technical documentation:

Bruno Hecker, Jöbkesweg 3, 48599 Gronau

Gronau, 17 May 2022
Place, Date

Managing Director

Quality



UKCA-Declaration of Conformity

We, the manufacturer: **epro GmbH, Jöbkesweg 3, 48599 Gronau, Germany**
 declare under our sole responsibility that following product(s):

Product designation:	AMS Asset Monitor	
Product description:	Online Prediction, Protection and Process Monitor	
Part numbers	AM5820-IM	AMS Asset Monitor Base - Imperial Threaded Unit
	AM5730	AMS Asset Monitor – +24V SC Power Module
	AM5125	VI Piezo CHARM
	AM5620	VI Voltage CHARM
	AMS312	VI Tach CHARM
	KL4502X1-BA1	Standard Terminal Block

are in conformity with the terms of the directives mentioned below including any amendment valid at the date of declaration:

- S.I. 2016 No. 1091 Electromagnetic Compatibility Regulations 2016
- S.I. 2016 No. 1107 Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016
- S.I. 2016 No. 3032 The restriction of the use of certain hazardous substances in electrical and electronic equipment

Following standards have been applied:

- S.I. 2016 No. 1091 EN 61326-1 Electrical equipment for measurement, control and laboratory use. EMC requirements. Part 1. General requirements
- S.I. 2016 No. 1107 EN 60079-0 Explosive atmospheres - Part 0: Equipment- General requirements
- EN 60079-7 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
- EN 60079-11 Explosive atmospheres- Part 11: Intrinsic Safety „I“
- EN 60079-15 Explosive atmospheres- Part 15: Equipment protection by type of protection "n"
- EN 60079-31 Explosive atmospheres- Part 31: Equipment dust ignition protection by enclosure "t"
- S.I. 2016 No. 3032 EN IEC 63000 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

For the type examination according to EN 60079-0, EN 60079-7, EN 60079-11, EN 60079-15 and EN 60079-31 the following notified body has been involved:

DEKRA Testing and Certification GmbH
 Type examination certificate BVS 20 ATEX E 001 X

Authorized person for technical documentation:

Bruno Hecker, Jöbkesweg 3, 48599 Gronau, Germany

Authorized Representative:

Emerson Process Management Limited,
 company No 00671801
 Meridian East,
 Leicester
 LE19 1UX, United Kingdom
 Regulatory Compliance Department
 email: ukproductcompliance@emerson.com
 Phone: +44 11 6282 23 64

M. Fränzer
 Managing Director

B. Hecker
 Quality

Place, Date: Gronau, 13 September 2022



**Emerson Automation Solutions
Systems and Solutions**
1100 W. Louis Henna Blvd.
Round Rock, TX 78681

Statement Regarding the China RoHS Compliance of Emerson Product – AM5820-IM

Please refer to Table 1 for the names and contents of the toxic or hazardous substances or elements contained in Emerson products.

Table 1: Names and Contents of Toxic or Hazardous Substances or Elements

表1: 有毒有害物质或元素的名称及含量

部件名称 Part Name	有毒有害物质或元素 Toxic or hazardous Substances and Elements						
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr (VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)	
印刷电路板组装 PC BD ASSY	X	0	0	0	0	0	25
围堰 ENCLOSURE	0	0	0	0	0	0	25
硬件 HARDWARE	0	0	0	0	0	0	25
印刷电路板组装支持 PC BD ASSY SUPPORT	0	0	0	0	0	0	25
O 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下 O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572. X 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572. 环保期限 (EFUP) 的产品及其部件是 每个列出的符号。除非另有标明。使用期限只适用于产品在产品手册中规定的条件下工作 The Environmentally Friendly Period (EFUP) for the product and its parts are per the symbol listed, unless otherwise marked. Use Period is valid only when the product is operated under the conditions defined in the product manual.							

James McFerrin
Environmental Compliance Manager SY55
T 512 832 3271 E james.mcferrin@emerson.com



**Emerson Automation Solutions
Systems and Solutions**
1100 W. Louis Henna Blvd.
Round Rock, TX 78681

Statement Regarding the China RoHS Compliance of Emerson Product – AM5125

Please refer to Table 1 for the names and contents of the toxic or hazardous substances or elements contained in Emerson products.

Table 1: Names and Contents of Toxic or Hazardous Substances or Elements

表1: 有毒有害物质或元素的名称及含量

部件名称 Part Name	有毒有害物质或元素 Toxic or hazardous Substances and Elements						
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr (VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)	
印刷电路板组装 PC BD ASSY	X	0	0	0	0	0	25
围堰 ENCLOSURE	0	0	0	0	0	0	25
O 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下 O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572. X 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572. 环保期限 (EFUP) 的产品及其部件是 每个列出的符号。除非另有标明。使用期限只适用于产品在产品手册中规定的条件下工作 The Environmentally Friendly Period (EFUP) for the product and its parts are per the symbol listed, unless otherwise marked. Use Period is valid only when the product is operated under the conditions defined in the product manual.							

James McFerrin
Environmental Compliance Manager SY55
T 512 832 3271 E james.mcferrin@emerson.com



**Emerson Automation Solutions
Systems and Solutions**
1100 W. Louis Henna Blvd.
Round Rock, TX 78681

Statement Regarding the China RoHS Compliance of Emerson Product – AM5730

Please refer to Table 1 for the names and contents of the toxic or hazardous substances or elements contained in Emerson products.

Table 1: Names and Contents of Toxic or Hazardous Substances or Elements

表1：有毒有害物质或元素的名称及含量

部件名称 Part Name	有毒有害物质或元素 Toxic or hazardous Substances and Elements						
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr (VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)	
印刷电路板组装 PC BD ASSY	X	0	0	0	0	0	25
围堰 ENCLOSURE	0	0	0	0	0	0	E
硬件 HARDWARE	0	0	0	0	0	0	E
0 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下 0: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572. X 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572. 环保期限 (EFUP) 的产品及其部件是每个列出的符号，除非另有标明。使用期限只适用于产品在产品手册中规定的条件下工作 The Environmentally Friendly Period (EFUP) for the product and its parts are per the symbol listed, unless otherwise marked. Use Period is valid only when the product is operated under the conditions defined in the product manual.							

James McFerrin
Environmental Compliance Manager SYSS
T 512 832 3271 E james.mcferrin@emerson.com



**Emerson Automation Solutions
Systems and Solutions**
1100 W. Louis Henna Blvd.
Round Rock, TX 78681

Statement Regarding the China RoHS Compliance of Emerson Product – AM5312

Please refer to Table 1 for the names and contents of the toxic or hazardous substances or elements contained in Emerson products.

Table 1: Names and Contents of Toxic or Hazardous Substances or Elements

表1：有毒有害物质或元素的名称及含量

部件名称 Part Name	有毒有害物质或元素 Toxic or hazardous Substances and Elements						
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr (VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)	
印刷电路板组装 PC BD ASSY	X	0	0	0	0	0	25
围堰 ENCLOSURE	0	0	0	0	0	0	E
0 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下 0: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572. X 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572. 环保期限 (EFUP) 的产品及其部件是每个列出的符号，除非另有标明。使用期限只适用于产品在产品手册中规定的条件下工作 The Environmentally Friendly Period (EFUP) for the product and its parts are per the symbol listed, unless otherwise marked. Use Period is valid only when the product is operated under the conditions defined in the product manual.							

James McFerrin
Environmental Compliance Manager SYSS
T 512 832 3271 E james.mcferrin@emerson.com



Emerson Automation Solutions
Systems and Solutions

1100 W. Louis Henna Blvd.
Round Rock, TX 78881

Statement Regarding the China RoHS Compliance of Emerson Product – AM5620

Please refer to Table 1 for the names and contents of the toxic or hazardous substances or elements contained in Emerson products.

Table 1: Names and Contents of Toxic or Hazardous Substances or Elements

表1: 有毒有害物质或元素的名称及含量

部件名称 Part Name	有毒有害物质或元素 Toxic or hazardous Substances and Elements						
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr (VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)	
印刷电路板组装 PC BD ASSY	X	0	0	0	0	0	
围堰 ENCLOSURE	0	0	0	0	0	0	
○ 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下 O. Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.							
X 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。 X. Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572.							
环保期限 (EFUP) 的产品及其部件是每个列出的符号。除非另有标明, 使用期限只适用于产品在产品手册中规定的条件下工作 The Environmentally Friendly Period (EFUP) for the product and its parts are per the symbol listed, unless otherwise marked. Use Period is valid only when the product is operated under the conditions defined in the product manual.							

James McFerrin
Environmental Compliance Manager SYSS
T 512 832 3271 E james.mcferrin@emerson.com

Emerson

835 Innovation Drive
Knoxville, TN 37932 USA
T +1 865-675-2400
F +1 865-218-1401
www.Emerson.com

Emerson

Jöbkesweg 3
48599 Gronau
Germany
T +49 2562 709 0
F +49 2562 709 401
www.Emerson.com/ams

©2022, Emerson. All rights reserved.

The contents of this publication are presented for informational purposes only, and while diligent efforts were made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

The Emerson logo is a trademark and service mark of Emerson Electric Co. The AMS logo is a mark of one of the Emerson family of companies. All other marks are the property of their respective owners.