HIRSCHMANN
A BELDEN BRAND

Startup instructions

AutoConfiguration Adapter
ACA21-USB (EEC)
ACA22-USB (EEC)
ACA21-M12 (EEC)
ACA22-M12 (EEC)

04005300103051500

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You can get the latest version of this manual on the Internet at the Hirschmann product site (www.hirschmann.com).

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Safety instructions

Intended usage

- ☐ Use the product only for the application cases described in the Hirschmann product information, including this manual.
- ☐ Operate the product only according to the technical specifications. See “Technical Data” on page 10.
- ☐ Connect to the product only components suitable for the requirements of the specific application case.

Supply voltage

- ☐ Operate the ACA21-.../ACA22-... storage medium with listed Hirschmann Industrial Ethernet host devices via their USB interface exclusively.

National and international safety regulations

Verify that the electrical installation meets local or nationally applicable safety regulations.

Relevant for North America:

- ☐ Operate the ACA21-.../ACA22-... storage medium with Hirschmann Class 2 Industrial Ethernet host devices.
  Maximum ambient air temperature: +158 °F (+70 °C)
  Peripheral equipment must be suitable for the location in which it is used.

Use in Hazardous Locations (North America)

The ACA device may be operated in hazardous locations only if the device is marked accordingly. Additional, for Use with Class 2 Industrial-Line Hirschmann Ethernet products (host) only which are individually labeled “FOR USE IN HAZARDOUS LOCATIONS”.

For “ACA21-USB...” or “ACA22-USB...” types only. Non-Incendive only in Ex zone 2 when installed per Control Drawing 000163850DNR. In addition, the host shall meet the Entity Parameter requirements as prescribed in the Control Drawing 000163850DNR in this present document.
See “Control Drawing 000163850DNR” on page 5.

WARNING - EXPLOSION HAZARD!
DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

WARNING - EXPLOSION HAZARD!
SUBSTITUTION OF ANY COMPONENTS MAY IMPAIR SUITABILITY FOR DIVISION 2.

To be supplied by a Class 2 power supply or isolated Low Voltage Limited Energy (LVLE).

Avertissement - Risque d'explosion - Ne pas débrancher tant que le circuit est sous tension à moins que l'emplacement soit connu pour ne contenir aucune concentration de gaz inflammable.

Avertissement - Risque d'explosion - La substitution de tout composant peut rendre ce matériel incompatible pour une utilisation en classe I, division 2.

Use in Explosive Atmospheres Zone 2 According to the Directive 94/9/EC

This product may be operated in EX zone 2 only if the product label is marked as follows:

II 3G Ex nA IIC T4 Gc DEKRA 12ATEX0258X, or
II 3G Ex nA ic IIC T4 Gc DEKRA 12ATEX0258X

Temperature Code: T4; Ta:-40 °C to +70 °C for “EEC” and “(EEC)” types.

For “ACA21-USB...” or “ACA22-USB...” types only. Non-Incendive only in Ex zone 2 when installed per Control Drawing 000163850DNR. And, the host shall meet the Entity Parameter requirements as prescribed in the Control Drawing 000163850DNR in this present document.
See “Control Drawing 000163850DNR” on page 5.

Special conditions for safe use:

- ☐ The ACA modules shall be installed in a suitable enclosure in accordance with EN 60079-15, taking into account the environmental conditions under which the equipment will be used.

Control Drawing 000163850DNR

Ordinary Location,
Non-Hazardous Area,
Non-Explosive Atmosphere

Class 1, Division 2
Groups A, B, C, D
Hazardous Location

or

Zone 2
Explosive Atmosphere

USB Power supply contacts:
ACA21-USB or ACA22-USB devices with nonincendive field wiring parameters.
The USB contacts pin 1 and pin 4 are dependent upon the following
ENTITY PARAMETERS: *)

V_{max} or U_i	I_{max} or I_i	C_i	L_i
5.5 V	1.25 A_{dc}	6.0 µF	400 nH

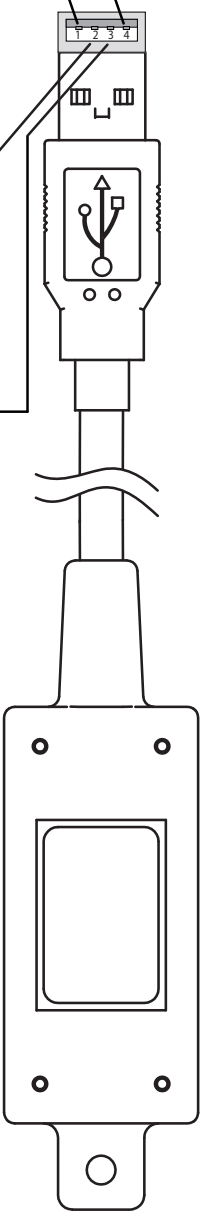
USB Data contacts

Ground: pin 4

U_{in}: pin 1

− Data: pin 2

+ Data: pin 3



Entity Parameters only to apply for ACA21-USB or ACA22-USB model No´s. which are inividually labelled “See Control Drawing No.000163850DNR”.

Temperature Code: T4

Ambient Temperature rating:

Ta: −40 °C to +70 °C for “EEC” and “(EEC)” types only (extended)
- refer to the type designation on the device

Connect the ACA21-USB or ACA22-USB direct to the host device and
- DO NOT USE ANY ADDITIONAL EXTENSION CABLE -

CONTROL DRAWING for ACA21-USB or ACA22-USB Devices according to Class 1, Division 2, Hazardous Location ISA 12.12.01 or according to the European directive 94/9/EC		HIRSCHMANN A BELDEN BRAND
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Make sure that the Entity Parameters of the host device meet the following requirements: *)

V_{oc} or $U_o \leq 5.5$ V	I_{sc} or $I_o \leq 1.25$ A
C_a or $C_o > 6.0$ µF	$L_a > 400$ nH

Applied standards:

ANSI/ISA 12.12.01-2011 (Hazardous Locations)
EN 60079-0: 2009 (Zone 2, directive 94/9/EC)
EN 60079-11: 2012 (Zone 2, directive 94/9/EC)
EN 60079-15: 2010 (Zone 2, directive 94/9/EC)

Special conditions for safe use according to the directive 94/9/EC

The ACA2x-USB... modules must be installed in a suitable enclosure in accordance with EN60079-15, taking into account the environmental conditions under which the equipment will be used.

*) Note: Applied parameter designations under the conditions of ...

... Hazardous Locations Class 1 Division 2:	V_{max}	I_{max}	C_i	L_i	V_{oc}	I_{sc}	L_a	C_a
... the European directive 94/9/EC / EN60079-11	U_i	I_i	C_i	L_i	U_o	I_o	L_o	C_o

CE marking

The labeled devices comply with the regulations contained in the following European directive(s):

2004/108/EC (EMC)
Directive of the European Parliament and the council for standardizing the regulations of member states with regard to electromagnetic compatibility.

2011/65/EU (RoHS)
Directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

In accordance with the above-named EU directive(s), the EU conformity declaration will be at the disposal of the relevant authorities at the following address:

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The product can be used in living areas (living area, place of business, small business) and in industrial areas.

- Interference immunity: EN 61000-6-2
- Emitted interference: EN 55022

You find more information on technical standards here:
“Technical Data” on page 10.

Warning! This is a class A device. This device can cause interference in living areas, and in this case the operator may be required to take appropriate measures.

Note: The assembly guidelines provided in these instructions must be strictly adhered to in order to observe the EMC threshold values.

Description

The ACA21-.../ACA22-... storage medium is for saving and updating configuration data and software of the Hirschmann Industrial Ethernet host devices.

USB compatibility of the storage medium: ACA21-.../ACA22-...

Storage medium	Software	
ACA21-...	Classic	compatible
	HiOS HiSecOS	Enabling the compatibility mode on the device is required.
ACA22-...	Classic HiOS HiSecOS	compatible

For more details, see “Technical Data” on page 10.

Installation

☐ Plug the ACA21-.../ACA22-... storage medium into the USB port or M12 socket of the device.

Note: Note that upon restart, the host device—depending on its configuration—adopts the configuration saved on the ACA21-.../ACA22-... storage medium. The status of the storage medium in the graphical user interface or in the Command Line Interface tells you if the configuration on the ACA21-.../ACA22-... storage medium corresponds with the configuration on the host device.

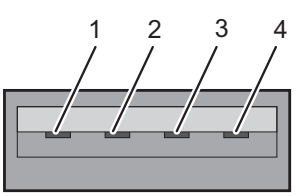
Figure	Pin	Function
	1	U_{in}
	2	− Data
	3	+ Data
	4	Ground (GND)

Table 1: Pin assignment of the USB interface

Figure	Pin	Function
	1	U_{in}
	2	—
	3	− Data
	4	Ground (GND)
	5	+ Data

Table 2: Pin assignment of the M12 plug

Operation

Transferring the current configuration data on the storage medium

You have the option of transferring the current configuration of your connected device via the graphical user interface or the Command Line Interface on the ACA21-.../ACA22-... storage medium and the flash memory of the host device simultaneously.

Transferring the configuration data from the storage medium

Upon restart, the host device adopts the configuration data saved on the ACA21-.../ACA22-... storage medium and saves them permanently in the flash memory.

Updating the software

For more information, refer to the “Anwender-Handbuch Grundkonfiguration” document.

Technical Data

General technical data		
Order numbers	ACA21-USB (EEC)	943 271-003
	ACA22-USB (EEC)	942 124-001
	ACA21-M12 (EEC)	943 913-003
	ACA22-M12 (EEC)	942 125-001
USB standard	ACA21-USB (EEC)	USB 1.1
	ACA21-M12 (EEC)	
	ACA22-USB (EEC)	USB 2.0
	ACA22-M12 (EEC)	
Storage capacity	ACA21-USB (EEC)	64 MB
	ACA21-M12 (EEC)	
	ACA22-USB (EEC)	512 MB
	ACA22-M12 (EEC)	
Connection type	ACA21-USB (EEC)	USB plug
	ACA22-USB (EEC)	
	ACA21-M12 (EEC)	5-pin M12 plug, A-encoded
	ACA22-M12 (EEC)	
Dimensions	ACA...USB...	3.66 in × 1.14 in × 0.59 in (93 mm × 29 mm × 15 mm)
	ACA...M12...	3.66 in × 1.14 in × 0.59 in (93 mm × 29 mm × 15 mm)
Weight	ACA...USB...	1.76 oz (50 g)
	ACA...M12...	2.47 oz (70 g)
Degree of protection	ACA...USB...	IP20
Cable length	ACA...USB...	19.69 in (50 cm)
	ACA...M12...	19.69 in (50 cm)
Power supply	Maximum rated voltage DC	5.5 V
	Maximum current consumption	150 mA
	Class 2	

Ambient conditions		
Climatic conditions during operation	Ambient air temperature[a]	−40 °F ... +158 °F (−40 °C ... +70 °C)
	Humidity	10 % ... 95 % (non-condensing)
	Air pressure	minimum 795 hPa (+9842 ft; +2000 m) maximum 1060 hPa (−1312 ft; −400 m)
Climatic conditions during storage	Ambient air temperature[a]	−40 ºF ... +185 ºF (−40 ºC ... +85 ºC)
	Humidity	10 % ... 95 % (non-condensing)
	Air pressure	minimum 700 hPa (+9842 ft; +3000 m) maximum 1060 hPa (−1312 ft; −400 m)

a. Temperature of the ambient air at a distance of 2 inches (5 cm) from the device

EMC and immunity		
Stability	Vibration IEC 60068-2-6, test Fc	8.4 Hz ... 200 Hz with 1 g 200 Hz ... 500 Hz with 1.5 g
	Shock IEC 60068-2-27, test Ea	15 g at 11 ms
EMC interference emission	EN 55022	
EMC interference immunity	EN 61000-4-2	6 kV contact discharge 8 kV air discharge
	EN 61000-4-3	10 V/m

Underlying technical standards

The device has an approval based on a specific standard only if the approval indicator appears on the device casing.
If your device has a shipping approval according to Germanischer Lloyd, you find the approval mark printed on the device label. You will find out whether your device has other shipping approvals on the Hirschmann website under www.hirschmann.com in the product information.

EN 50121-4	Railway applications – EMC – Emission and immunity of the signalling and telecommunications apparatus (Rail Trackside)
EN 60079-0	Explosive atmospheres – Part 0: Equipment – General requirements
EN 60079-11	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”
IEC/EN 60079-15	Explosive atmospheres – Part 15: Equipment protection by type of protection “n”
EN 61131-2	Programmable controllers – Part 2: Equipment requirements and tests
FCC 47 CFR Part 15	Code of Federal Regulations
IEC/EN 61850-3	Communication networks and systems in substations – Part 3: General requirements
IEEE 1613	IEEE Standard Environmental and Testing Requirements for Communication Networking Devices in Electric Power Substations
ISA 12.12.01	United States Standard for Safety for Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
NEMA TS 2	Traffic Controller Assemblies with NTCIP Requirements (environmental requirements)
UL 508	Safety for Industrial Control Equipment

Further support

Technical questions

For technical questions, please contact any Hirschmann dealer in your area or Hirschmann directly.

You find the addresses of our partners on the Internet at
http://www.hirschmann.com

Contact our support at
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