

CERTIFICATE OF CONFORMITY



- HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
- Certificate No:** FM19US0177X
- Equipment:** BL20 Modular I/O Bus Terminal System
(Type Reference and Name)
- Name of Listing Company:** Hans Turck GmbH & Co KG
- Address of Listing Company:** Witzlebenstrasse 7
DE 45472 Mulheim an der Ruhr
GERMANY
- The examination and test results are recorded in confidential report number:

3030839 dated 26th November 2007
- FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2011/2018*, FM Class 3611:2004/2018*, ANSI/ISA-12.12.01:2015*,
FM Class 3810:2005, ANSI/ISA 60079-0:2013,
ANSI/ISA 60079-15:2012

*Only the following modules are certified to the 2018 edition, and to ANSI/ISA-12.12.01:2015:
BL20-BR-24VDC-RED, BL20-E-2CNT-2PWM, BL20-E-4AI-TC, BL20-E-4AO-U//ET, BL20-E-4IOL, BL20-E-4IOL-10, BL20-E-8AI-U/I-4PT/NI/ET, BL20-E-8DI-24VDC-P/ET, BL20-E-8DO-24VDC-0,5A-P/ET, BL20-PG-EN-V3, BL20-PG-EN-V3-VW, BL20-E-GW-DP/ET, BL20-E-GW-EN/ET, BL20-E-GW-RS-MB/ET
- If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
- This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

3 December 2019

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

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10. Equipment Ratings:

Nonincendive for Class I, Division 2, Groups A, B, C and D; AEx nA* for Class I, Zone 2, Group IIC hazardous (classified) locations, with an ambient temperature rating of T4;
 $0^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$;
 $-25^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ (modules with "/ET" suffix only).

*AEx nA nC for Relay modules only.

11. The marking of the equipment shall include:

Class I, Div 2, Groups A, B, C, D, T4, $0^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$;
Class I, Div 2, Groups A, B, C, D, T4, $-25^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ (modules with "/ET" suffix only);
Class I, Zone 2, AEx nA IIC, T4, $0^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$;
Class I, Zone 2, AEx nA IIC, T4, $-25^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ (modules with "/ET" suffix only);
Class I, Zone 2, AEx nA nC IIC, T4, $0^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$ (Relay modules only).

12. Description of Equipment:

General - The BL20 I/O Bus Terminal System is a modular system and offers gateways for communication with bus systems such as PROFIBUS, DeviceNet™ and CanOpen. There are a number of I/O modules, both digital and analogue, for connection to unspecified field devices. In addition to the analogue and digital modules there are a number of modules for specific applications such as a counter or RS232 interfaces and for relay outputs. The modules plug into bases which are used to mount the modules and which also carry the electrical power and signals via the bus to the Power Feed Modules and Gateway Modules. The bus has an upper operational limit, but this can be increased by use of an intermediate power feed module. User connections are only made to the Gateway modules and to the signal terminals on the individual modules.

Construction – The plastic enclosures of the BL20 modules satisfy the IP20 degree of protection. The enclosures are designed in such a way that the BL20 modules can be plugged together on a DIN rail to form an application-optimised system structure. The modules will be installed within an external enclosure which is rated for IP54 or better.

Ratings – Voltage: 18-30V. Power: 0.14-2.5W, depending on the module.

BL20 Modular I/O Bus Terminal System

Module Description	Module Description
BL20-2DI-24VDC-P	2 channel digital input modules - pnp
BL20-2DI-24VDC-N	2 channel digital input modules - npn
BL20-4DI-24VDC-P	4 channel digital input modules - pnp
BL20-4DI-24VDC-N	4 channel digital input modules - npn
BL20-4DI-NAMUR	4 channel digital input modules - NAMUR input
BL20-32DI-24VDC-P	32 channel digital input modules -pnp
BL20-2AI-I(0/4...20MA)	2 channel analogue input module - current
BL20-2AI-U(-10/0...+10VDC)	2 channel analogue input module - voltage
BL20-2AI-PT/NI-2/3	2 channel analogue input module - platinum and nickel resistance elements
BL20-2AI-THERMO-PI	2 channel analogue input module - thermoelements
BL20-4AI-U/I	4 channel analogue input module - current or voltage

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BL20-2DO-24VDC-0,5A-P	2 channel digital output - 0.5A - pnp
BL20-2DO-24VDC-0,5A-N	2 channel digital output – 0.5A - npn
BL20-2DO-24VDC-2A-P	2 channel digital output - 2.0A - pnp
BL20-4DO-24VDC-0,5A-P	4 channel digital output - 0.5A - pnp
BL20-16DO-24VDC-0,5A-P	16 channel digital output - 0.5A - pnp
BL20-32DO-24VDC-0,5A-P	32 channel digital output - 0.5A - pnp
BL20-2AO-I (0/4...20MA)	2 channel analogue output module - current
BL20-2AO-U(-10/0...+10VDC)	2 channel analogue output module - voltage
BL20-1CNT-24VDC	Counter
BL20-1RS232	RS232 interface
BL20-1RS485/422	RS485/422 interface
BL20-1SSI	SSI intertace
BL20-BR-24VDC-D	Power Supply Module with internal 5V DC Bus
BL20-BR-24VDC-RED	Power module for redundant supply
BL20-PF-24VDC-D	Power Feed Module Field Supply 24V
BL20-E-2CNT-2PWM	Economy module, 2 x counter/encoder channels, 2 x PWM outputs
BL20-E-4AI-TC	Economy module, 4 analogue inputs for thermocouples
BL20-E-4AI-TC/ET	Economy module, 4 analogue inputs for thermocouples with extended temperature range.
BL20-E-4AO-U/I/ET	Economy module, 4 analogue outputs for current/voltage
BL20-E-4IOL	Economy module, 4 IO-Link master channels, 4 configurable digital channels, PNP, channel diagnostics, 0.5A
BL20-E-4IOL-10	Economy module, 4 configurable digital channels, PNP, channel diagnostics, 0.5A
BL20-E-8AI-U/I-4PT/NI	Economy module, 8 2-wire analog inputs U/I resp. 4 2/3-wire PT/NI inputs
BL20-E-8AI-U/I-4PT/NI/ET	Economy module, 8 analogue inputs U/I resp. 4 PT/NI inputs
BL20-E-8DI-24VDC-P	8 channel digital input module - pnp - Economy
BL20-E-8DI-24VDC-P/ET	8 channel digital input module – pnp with extended temperature range - Economy
BL20-E-16DI-24VDC-P	16 channel digital input module - pnp - Economy
BL20-E-8DO-24VDC-0,5A-P	8 channel digital output module - 0.5A - pnp - Economy
BL20-E-8DO-24VDC-0,5A-P/ET	8 channel digital output module – 0.5A – pnp with extended temperature range - Economy
BL20-E-16DO-24VDC-0,5A-P	16 channel digital output module - 0.5A - pnp - Economy
BL20-GWBR-PBDP	Gateway for Profibus-DP with internal 5V DC Bus
BL20-GW-DPV1	Gateway for Profibus-DPV1
BL20-GW-EN	Gateway for Modbus TCP
BL20-GW-EN-IP	Gateway for Ethernet IP
BL20-PG-EN-IP	Programmable Gateway for Ethernet IP
BL20-PG-EN	Programmable Gateway for Modbus TCP
BL20-PG-EN-V3	CODESYS 3 Programmable Gateway for PROFINET, Ethernet/IP™ and Modbus TCP
BL20-PG-EN-V3-WV	CODESYS 3 Programmable Gateway for PROFINET, Ethernet/IP™ and Modbus TCP with WebVisu License
BL20-GWBR-DNET	Gateway for DeviceNet with internal 5V DC Bus
BL20-GWBR-CANOPEN	Gateway for CANopen with internal 5V DC Bus

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BL20-2RFID-A	2 Channel RFID module asynchronous
BL20-2RFID-C	2 Channel RFID module cyclic
BL20-2DO-R-NC	2 channel digital output - relay - normally closed
BL20-2DO-R-NO	2 channel digital output - relay - normally open
BL20-2DO-R-CO	2 channel digital output - relay - change over
BL20-16DI-24VDC-P	16 channel digital inputs module - pnp
BL20-2AIH-I	2 channel analogue inputs module - 0/4...20mA
BL20-2AOH-I	2 channel analogue outputs module - 0/4...20mA
BL20-E-4AO-U/I	4 channel analogue outputs module - Economy
BL20-2RFID-S	2 channel RFID module
BL20-E-GW-CO	Gateway for CANopen - Economy
BL20-E-GW-DN	Gateway for DeviceNet - Economy
BL20-E-GW-DP	Gateway for PROFIBUS-DP - Economy
BL20-E-GW-DP/ET	Gateway for PROFIBUS-DP with extended temperature range - Economy
BL20-E-GW-EN	Gateway for MPDBUS TCP incl. supply - Economy
BL20-E-GW-EN/ET	Gateway for MPDBUS TCP incl. supply with extended temperature range - Economy
BL20-E-GW-EN-IP	Gateway for Ethernet/IP incl. supply - Economy
BL20-E-GW-EN-PN	Gateway for PROFINET IO incl. supply
BL20-E-GW-RS-MB/ET	Gateway for Modbus RTU/ASCII with extended temperature range - Economy
BL20-PG-EN-DN-JA	Gateway for MODBUS TCP and DeviceNet incl. supply.

13. Specific Conditions of Use:

1. In Class I, Division 2 installations, the BL20 – Modular I/O Bus Terminal Systems shall be mounted within a tool-secured enclosure installed in accordance with the enclosure, mounting, spacing, and segregation requirements of the ultimate application which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code ANSI/NFPA 70 Article 500.
2. In Zone 2 installations, the BL20 - Modular I/O Bus-Terminal Systems shall be mounted within a tool-secured enclosure which meets the requirements of ANSI/ISA 60079-0 and ANSI/ISA 60079-15 and is capable of accepting one or more of the Zone 2 wiring methods specified in the National Electrical Code ANSI/NFPA 70 Article 505. Where installed in outdoor or potentially wet locations, the enclosure shall, at a minimum, meet the requirements of IP54. Where installed in locations providing adequate protection against the entry of solid foreign objects or water capable of impairing safety, the enclosure shall, at a minimum, meet the requirements of IP4X.
3. The BL20 I/O Modules shall be installed on an EN 50 022 NS35 rail with each group completed by an end plate (Type BL20-ABPL, Ident-no. 6827123) and sandwiched between two end brackets (Type BL20-WEW-35/2-SW, Ident-no. 6827124).
4. The input voltage for the BL20 2-channel digital relay modules shall be limited to 30 Vac or dc (max. contact voltage).

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

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15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
26 th November 2007	Original Issue.
3 rd December 2019	<u>Supplement 4:</u> Report Reference: PR451627 dated 3 rd December 2019. Description of the Change: Addition of 15 new modules. The original certificate 3030839coc has been reissued in the new format.

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