



# 1 TYPE EXAMINATION CERTIFICATE

2 Equipment or Protective systems intended for use in Potentially  
Explosive Atmospheres - Directive 2014/34/EU

3 Type Examination Certificate No: FM07ATEX0040X

4 Equipment or protective system: BL20 Modular I/O Bus Terminal System  
(Type Reference and Name)

5 Name of Applicant: Hans Turck GmbH & Co KG

6 Address of Applicant: Witzlebenstrasse 7  
DE 45472 Mulheim an der Ruhr  
Germany

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3030839EC dated 21<sup>st</sup> January 2008

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012+A11:2013 and EN 60079-15:2010

10 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.

11 This Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 3 G Ex nA IIC T4 Gc Ta= 0°C to +55°C  
Ta = -25°C to +60°C (modules with "/ET suffix" only)

II 3 G Ex nA nC IIC T4 Gc Ta= 0°C to +55°C (Relay Modules only)



**Richard Zammitt**  
Certification Manager, FM Approvals Europe Ltd.

Issue date: 09<sup>th</sup> December 2019

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# SCHEDULE

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**13 Description of Equipment or Protective System:**

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.

**BL20 Modular I/O Bus Terminal System**

<b>Module Description</b>	<b>Module Description</b>
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
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-PF-24VDC-D	Power Feed Module Field Supply 24V
BL20-BR-24VDC-RED	Power module for redundant supply
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//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-8DI-24VDC-P	8 channel digital input module - pnp - Economy
BL20-E-16DI-24VDC-P	16 channel digital input module - pnp - Economy

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BL20-E-8DI-24VDC-P/ET	8 channel digital input module – pnp with extended temperature range - 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
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-8AI-U/I-4PT/NI	8 channel analogue inputs U/I resp. 4 PT/NI inputs module - Economy
BL20-E-8AI-U/I-4PT/NI/ET	8 channel analogue inputs U/I resp. 4 PT/NI inputs module with extended temperature range - Economy
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.

## 14 Specific Conditions of Use:

1. 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 EN 60079-0 and EN 60079-15 and is capable of accepting one or more of the Zone 2 wiring methods specified in EN 60079-14. 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

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objects or water capable of impairing safety, the enclosure shall, at a minimum, meet the requirements of IP4X.

2. 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).
3. The input voltage for the BL20 2-channel digital relay modules shall be limited to 30 Vac or dc (max. contact voltage).

## 15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

## 16 Test and Assessment Procedure and Conditions:

This Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

## 17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by FM Approvals Europe Ltd.

## 18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
21 <sup>st</sup> January 2008	Original Issue.
25 <sup>th</sup> October 2010	<u>Supplement 1:</u> Report Reference: 3030839rev100115 dated 19 <sup>th</sup> October 2010. Description of the Change: Modification to documentation and printed circuit boards of BL20 Series modules.
06 <sup>th</sup> December 2010	<u>Supplement 2:</u> Report Reference: Supplement 2 to 3030839EC dated 29 <sup>th</sup> November 2010. Description of the Change: Addition of 13 new BL20 Series Modules and Gateways.
07 <sup>th</sup> March 2014	<u>Supplement 3:</u> Report Reference: 3050164 dated 27 <sup>th</sup> February 2014. Description of the Change: Minor electrical changes not affecting compliance and update of certification Standards to most recent editions.
10 <sup>th</sup> April 2017	<u>Supplement 4:</u> Report Reference: RR208352 dated 04 <sup>th</sup> April 2017.

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	Description of the Change: Minor electrical changes, update of certification standards and update certificate to new directive.
13 <sup>th</sup> March 2019	<u>Supplement 5:</u> Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.
06 <sup>th</sup> September 2019	<u>Supplement 6:</u> Report Reference: RR217987 dated 15 <sup>th</sup> July 2019. Description of the Change: Minor electrical changes not affecting compliance
09 <sup>th</sup> December 2019	<u>Supplement 7:</u> Report Reference: PR451627 dated 03 <sup>rd</sup> December 2019. Description of the Change: Addition of 15 new modules.

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