



用于过程自动化垂直行业的控制系统

BECKHOFF

油气生产



冶金



采矿



涂层工业



能源



木材加工



生物、化工

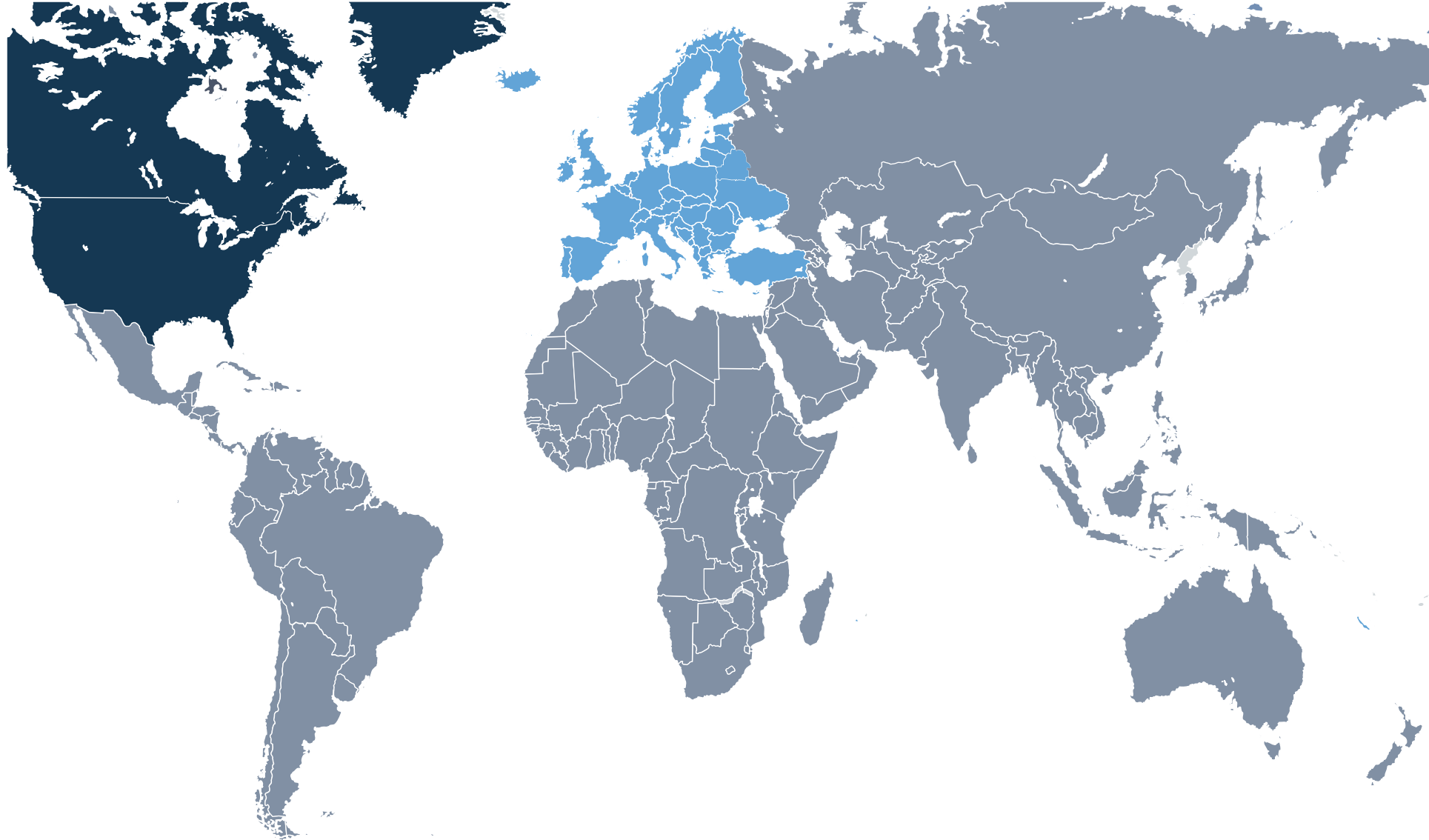


水处理



造纸





ATEX
IECEX
NEC (Class/Div)



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 DEK 16.0078X	Issue No: 0	Certificate history: Issue No. 0 (2017-01-30)
Status:	Current	Page 1 of 3	
Date of issue:	2017-01-30		
Applicant:	Beckhoff Automation GmbH & Co. KG Hülshorstweg 20 33415 Verl Germany		
Equipment:	Flexbus Components Type BK ..., Type KL ... and Type KS ...		
Optional accessory:			
Type of Protection:	Ex nA and Ex tc		
Marking:	Ex nA IIC T4 Gc and Ex tc IIC T135 °C Dc		

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)



Date:


2017-01-30

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 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.

Certificate issued by:


DEKRA Certification B.V.
Meander 1051,
6825 MJ Arnhem
The Netherlands






Production Quality Assurance Notification


- 1
- 2 Equipment and Protective Systems intended for use in potentially explosive atmospheres Directive 2014/34/EU
Annex IV - Module D: Conformity to type based on quality assurance of the production process
Annex VII - Module E: Conformity to type based on product quality assurance
- 3 Notification number: **BVS 16 ATEX ZQS/E410**
- 4 Product category: **Equipment and components, equipment-group II, categories 1G, 1D, 2G and 2D:**
The Beckhoff portfolio for applications in hazardous areas comprises production, sales and service of explosion-proof components for open automation technology. The following components are offered, among others:
 - Industrial PCs, Embedded PCs and Panel PCs
 - Fieldbus-based I/O components in IP 20 and IP 67
 - Bus Couplers and EtherCAT Couplers



- 5 Manufacturer: **Beckhoff Automation GmbH & Co.KG**
- 6 Address: **Hülshorstweg 20, 33415 Verl, Germany**
Site of manufacture: **Hülshorstweg 20, 33415 Verl, Germany**
- 7 The certification body of DEKRA EXAM GmbH, Notified Body No 0158 in accordance with Article 17 of the Council Directive 2014/34/EU of 28 February 2014 notifies that the manufacturer has a production quality system, which complies with Annex IV of the Directive. This quality system in compliance with Annex IV of the Directive also meets the requirements of Annex VII. In the updated annex all products covered by this notification and their type examination certificate numbers are listed.
- 8 This notification is based on audit report ZQS/E410/16 issued 2016-11-21. Results of periodical re-assessments of the quality system are a part of this notification.
- 9 This notification is valid from 2016-11-21 until 2019-11-20 and can be withdrawn if the manufacturer does not satisfy the production quality assurance surveillance according to Annex IV and VII.
- 10 According to Article 16 (3) of the Directive 2014/34/EU the CE marking shall be followed by the Identification number 0158 of DEKRA EXAM GmbH as notified body involved in the production control phase.

DEKRA EXAM GmbH
Bochum, 2016-11-21


 Certifier


 Approver

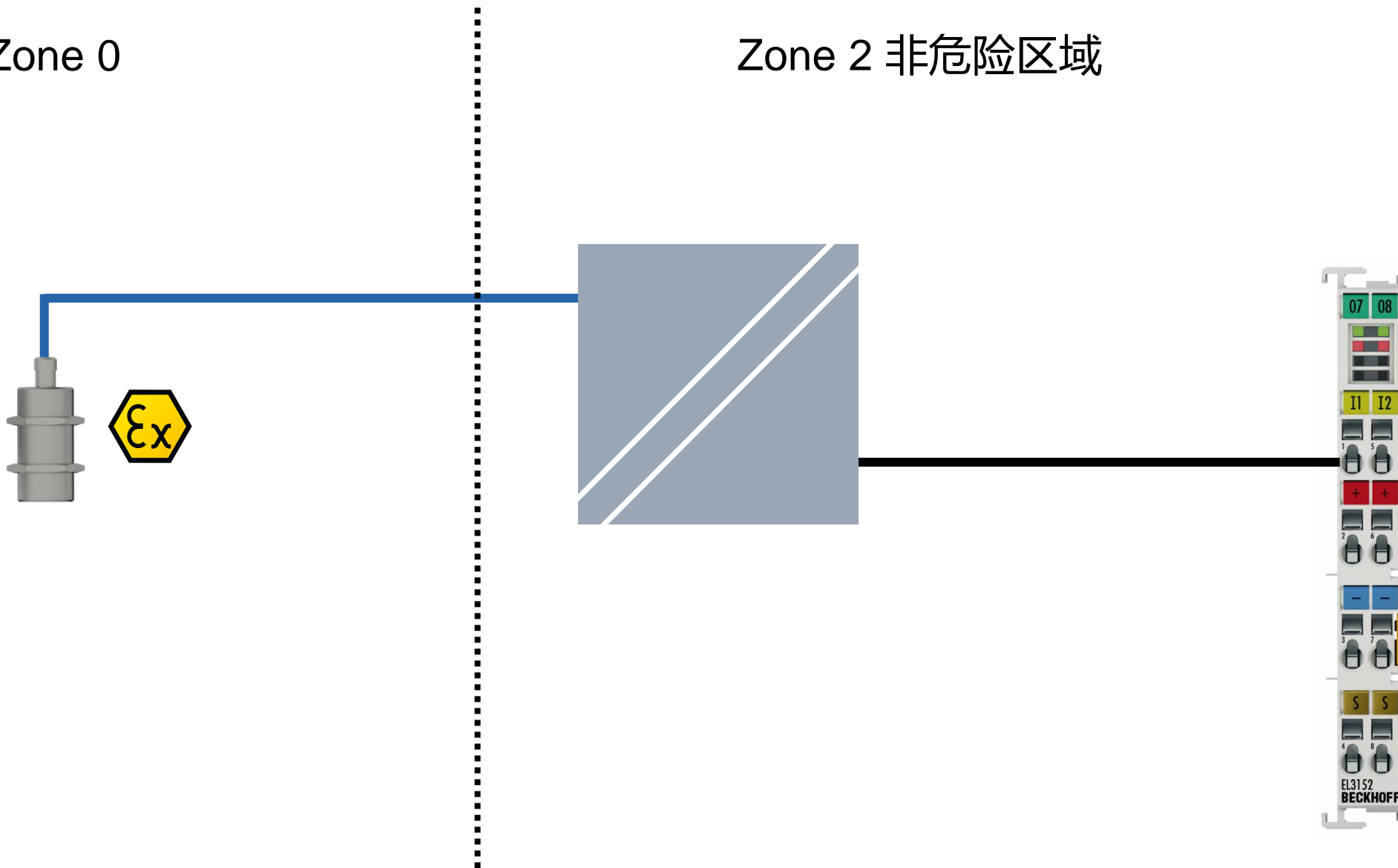
This is a translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

Page 1 of 1
This notification may only be reproduced in its entirety and without any change.
DEKRA EXAM GmbH | Dirmendahlstrasse 9 | 44600 Bochum | Germany | Phone +49 234 3096-105 | Fax +49 234 3096-110
e-mail: zs-exam@dekra.com



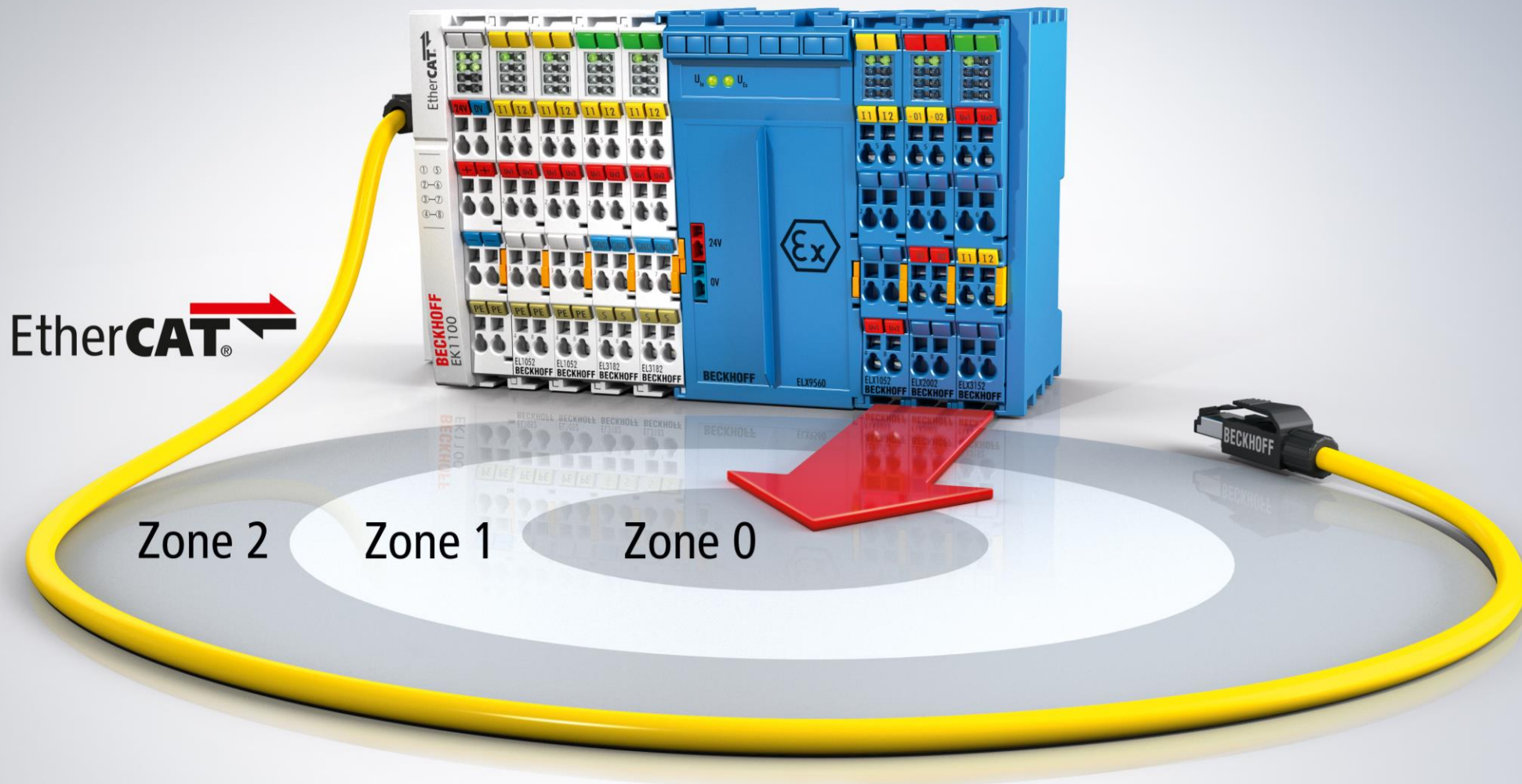
Zone 0

Zone 2 非危险区域



过程控制与工业控制集成在一个系统中

BECKHOFF



EtherCAT®

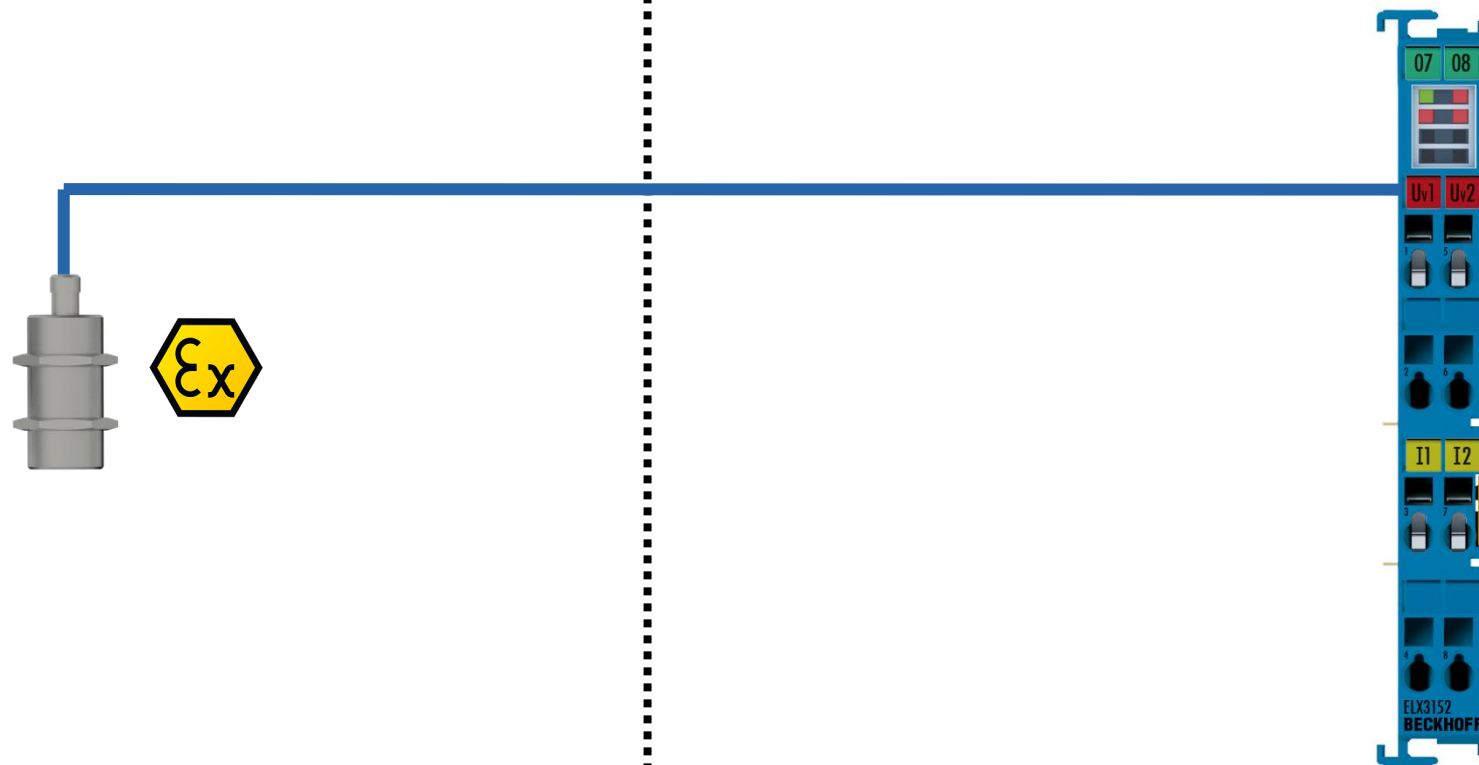
Zone 2

Zone 1

Zone 0

Zone 0

Zone 2非危险区域



ELX-模块: 安全栅和普通IO集成在一起

倍福控制系统: 直达0区的控制

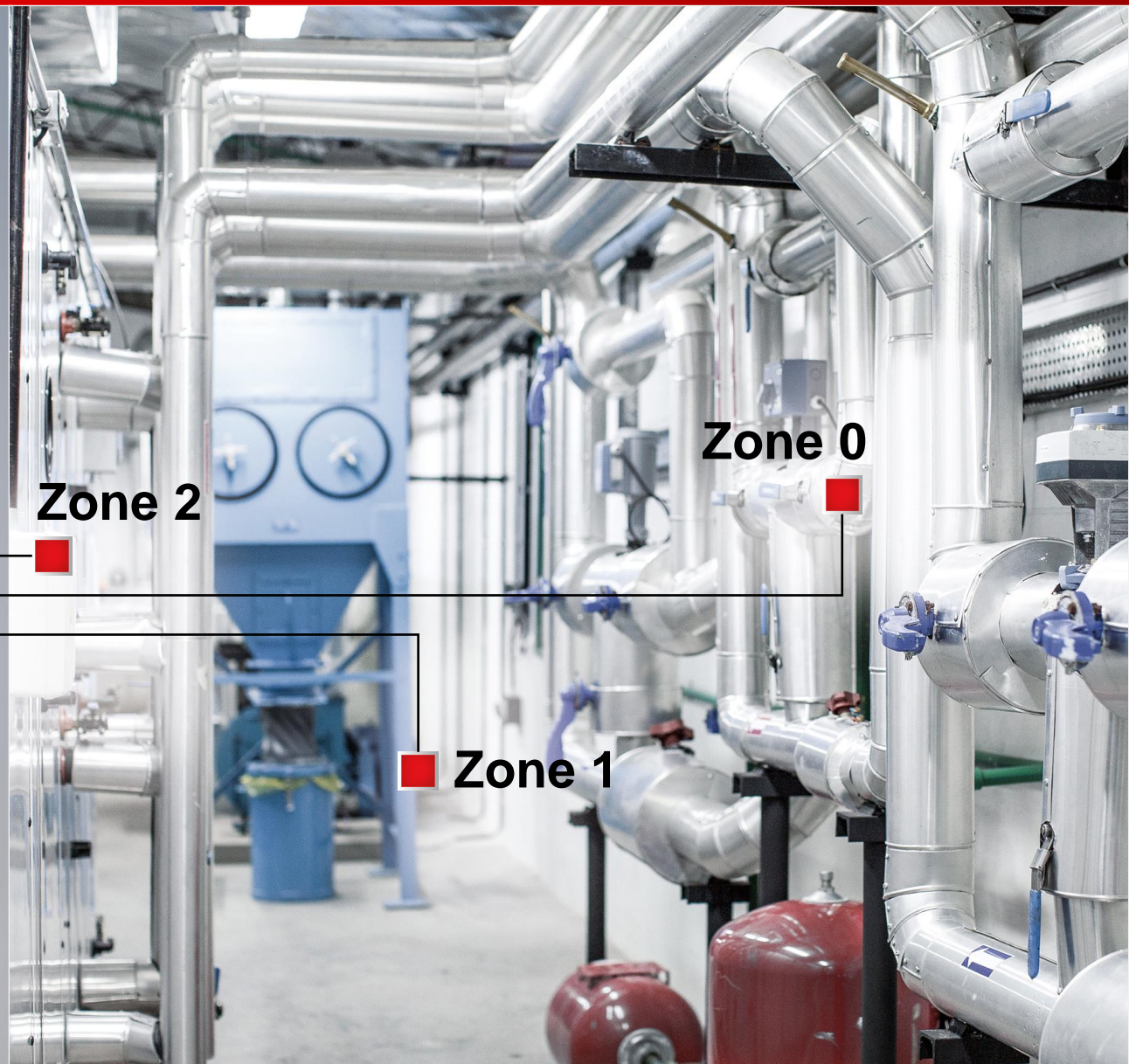
BECKHOFF



Zone 2

Zone 0

Zone 1



Ex d vs. Ex i

BECKHOFF



II 2 G Ex db IIC T6/T5/T4 Gb
II 2 D Ex tb IIIC T80 °C...T130 °C Db



II 3(1)G Ex ec [ia Ga] IIC T4 Gc
II (1)D [Ex ia Da] IIIC

BECKHOFF
ELX1052

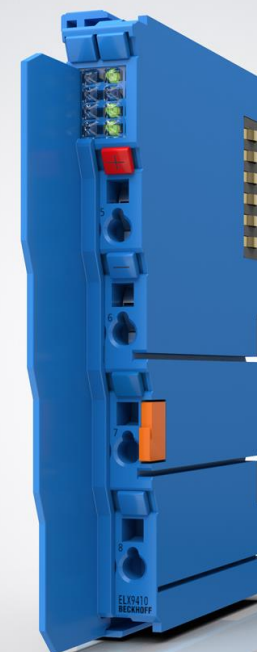
- ELX
 - 供电, 24 V DC/1 A
 - 48mm
- 功能:
 - 电流隔离, 电压限制和ELX模块供电
 - 本安的安全电流距离
 - 输出电流到1A



Category: Widest terminal



- 供电ELX
 - E-bus供电, 5 V DC/1 A
 - 输入24 V DC

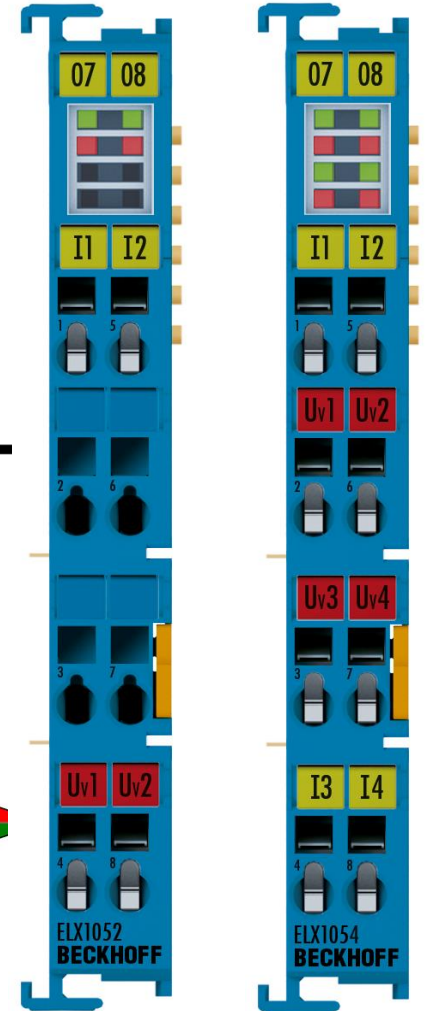
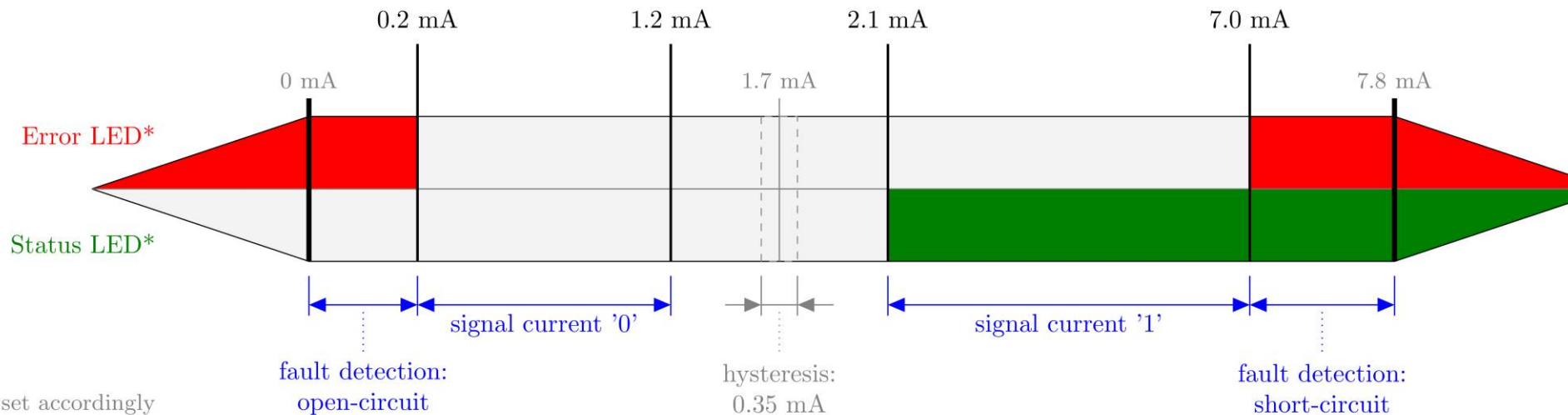


- 2、4通道数字量输入NAMUR

- 连接本安NAMUR传感器
- 符合标准EN 60947-5-6
- 开路、短路测量

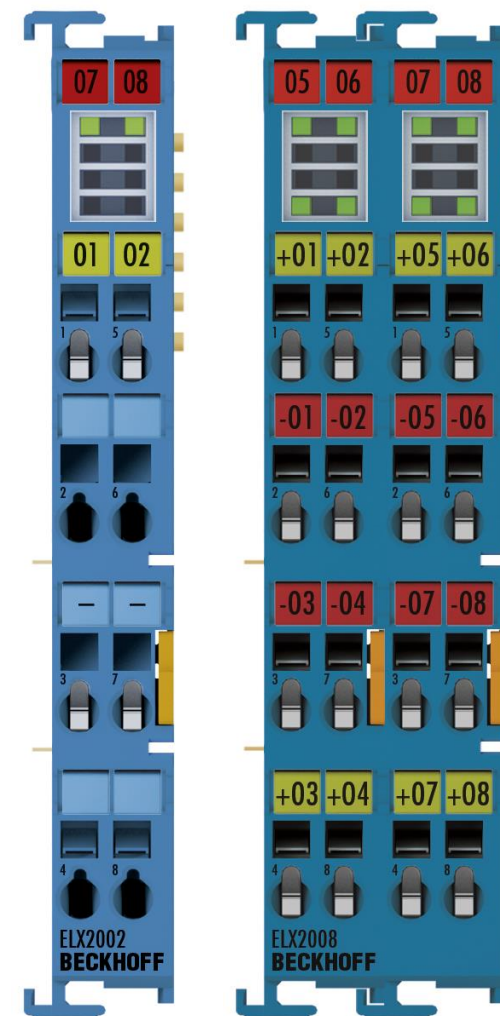
- 功能:

- 传感器8.2 V供电, 切换电流范围是 (1.2 / 2.1 mA).

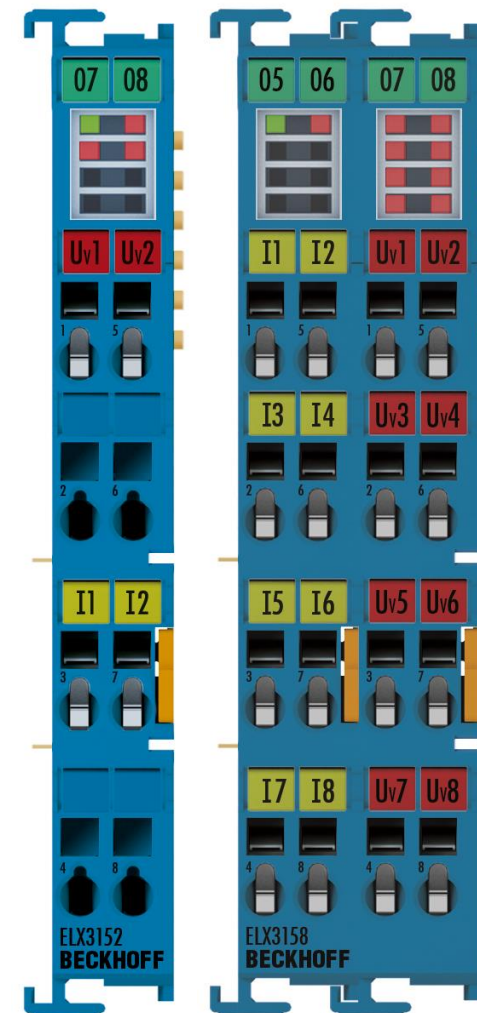
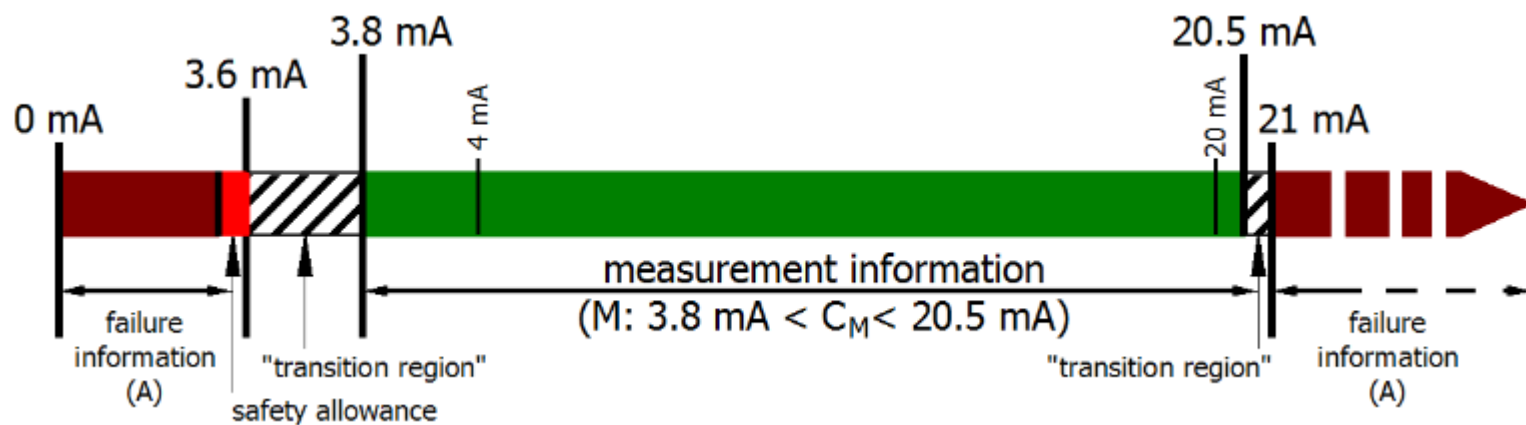


*Error Bit set accordingly

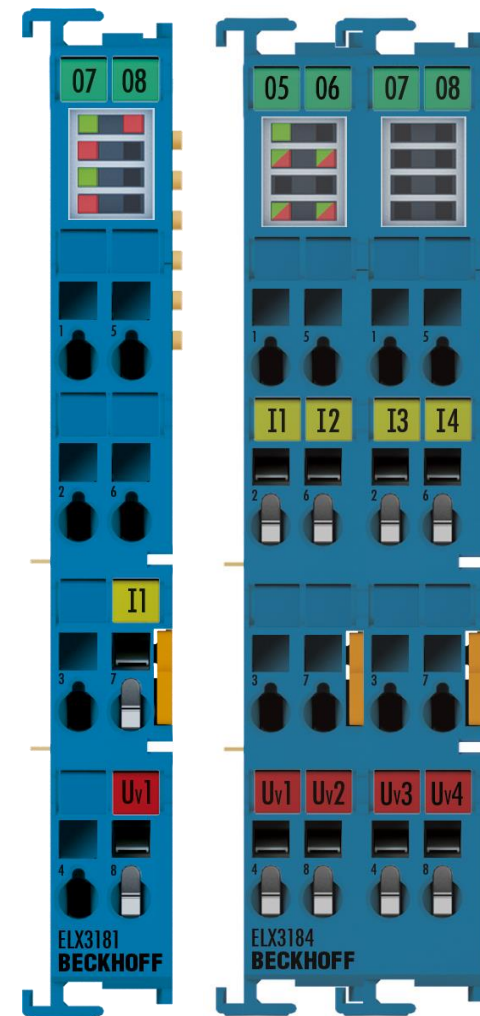
- 2/8通道数字量输出模块，24 V DC, 45 mA (80 mA total)
- 功能:
 - 24 V电压输出，最大电流40mA
 - 直连ZONE0/20,ZONE1/21.



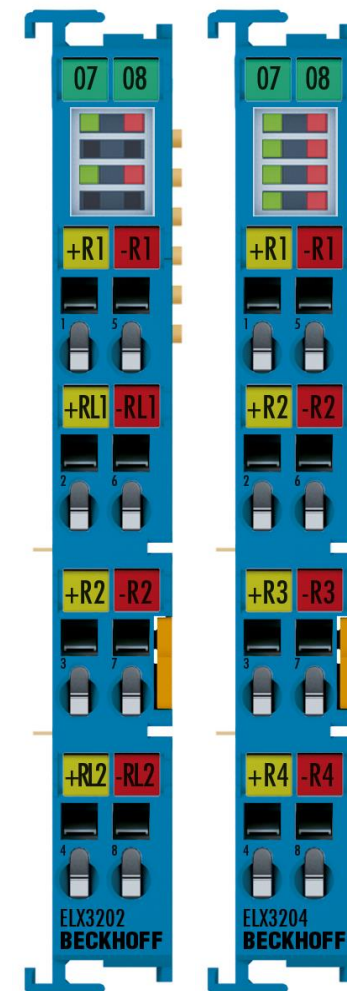
- 2/8通道模拟量输入模块
 - 0/4...20 mA
 - 16 bit
 - NAMUR NE43
 - 两线连接
- 功能:
 - 直连ZONE0/20,ZONE1/21.



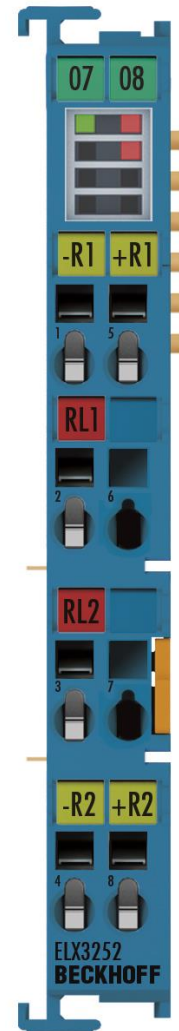
- 1通道模拟量输入模块
 - 4...20 mA
 - HART
- 可选配置:
 - HART
 - FDT
 - CommDTM
- 功能:
 - 直连ZONE0/20,ZONE1/21.



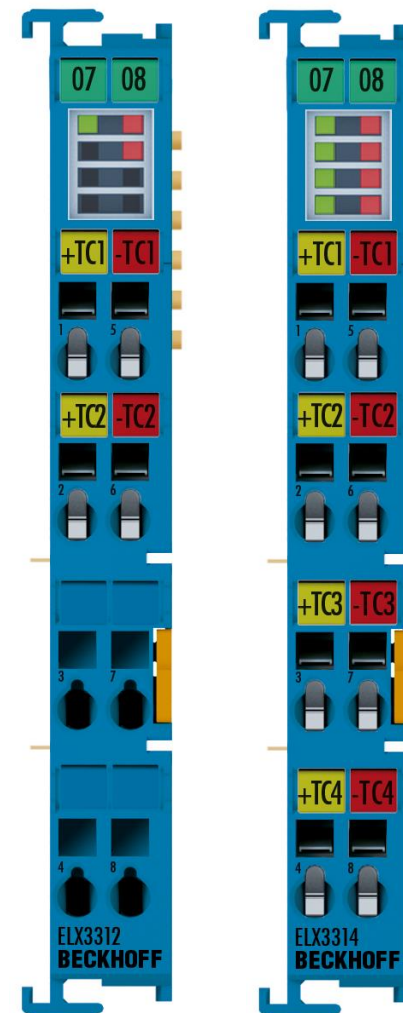
- 2-/4-通道模拟量输入模块，测量温度
 - 16 bit
 - 2-/3- 和4 线连接(ELX3204)
- 功能:
 - 直连ZONE0/20,ZONE1/21.



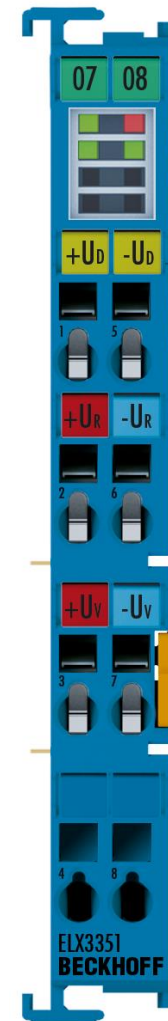
- 2通道模拟量输入, 电位计
 - 16 bit
- 功能:
 - 直连ZONE0/20,ZONE1/21.



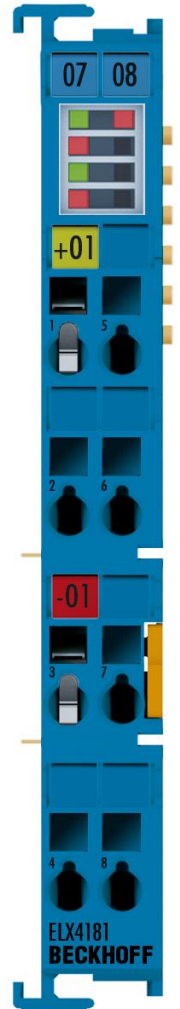
- 2-/4-模拟量输入模块，热电偶
 - 16 Bit
 - mV 测量
 - 带冷端补偿
- 功能:
 - 直连ZONE0/20,ZONE1/21.



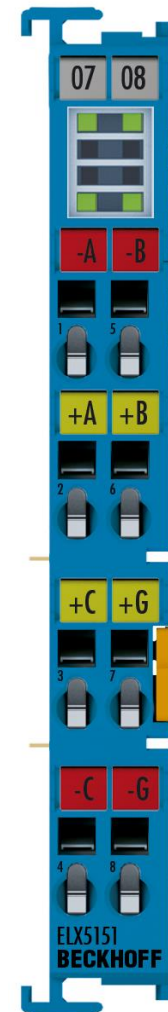
- 1-通道模拟量输入模块，电桥测量
 - 16 bit
- 功能:
 - 直连ZONE0/20,ZONE1/21.



- 1-通道模拟量输出模块
 - 0/4...20 mA
 - HART
- 可选配置
 - HART
 - FDT
 - CommDTM
- 功能:
 - 直连ZONE0/20,ZONE1/21.



- 1-通道编码器输入模块
 - NAMUR 接口
- 功能:
 - 直连ZONE0/20,ZONE1/21.

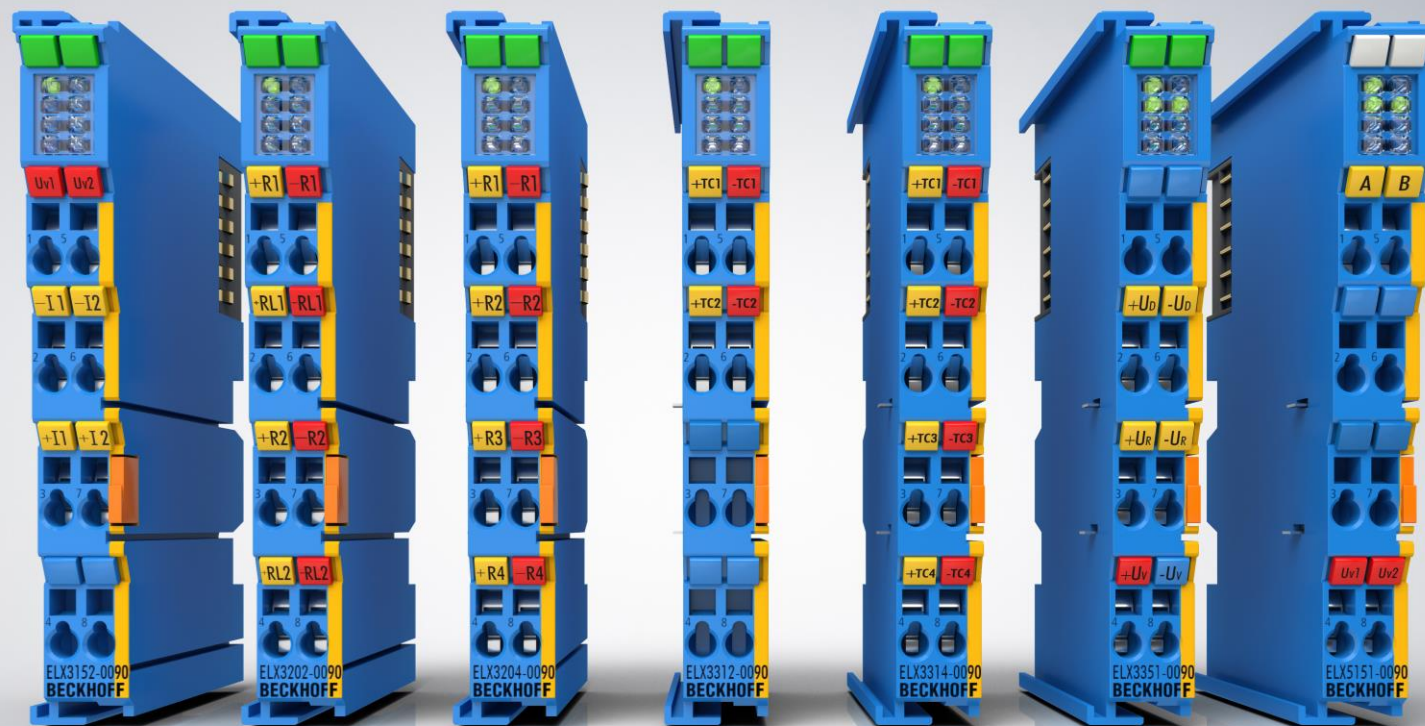


- 终端ELX9012
- 功能:
 - 直连ZONE0/20,ZONE1/21.



ELX-端子模块 (带TwinSAFE)

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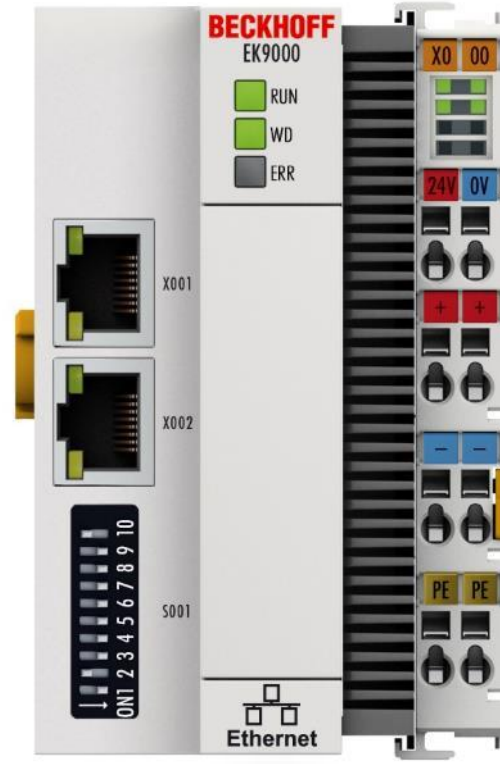
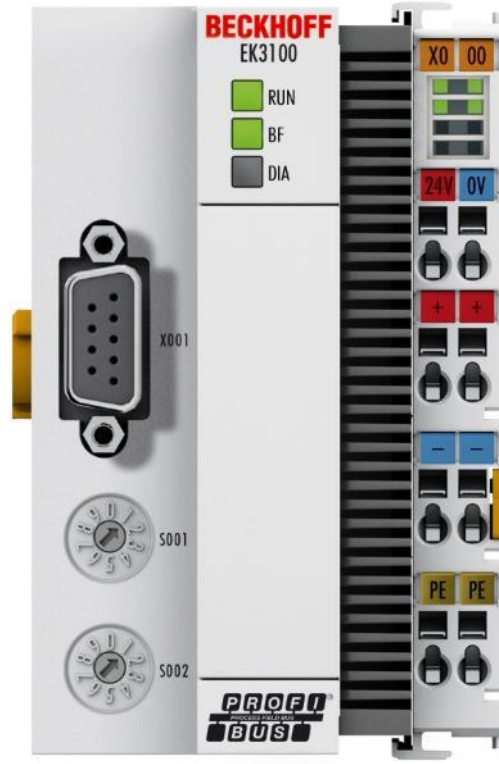
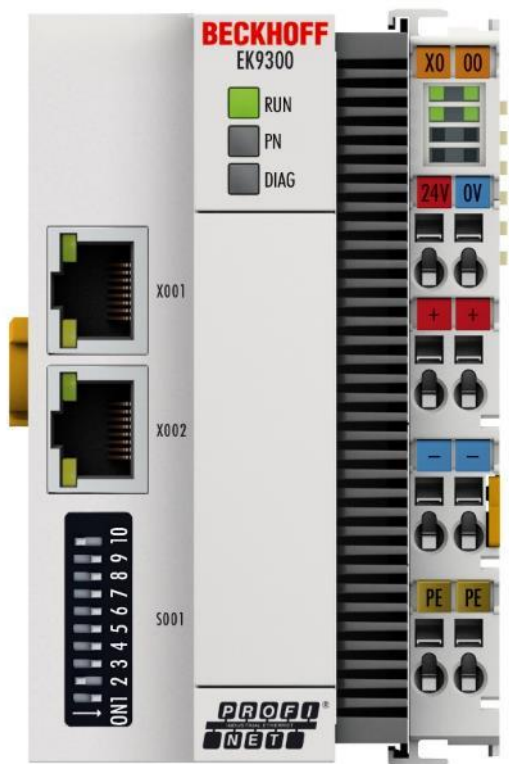
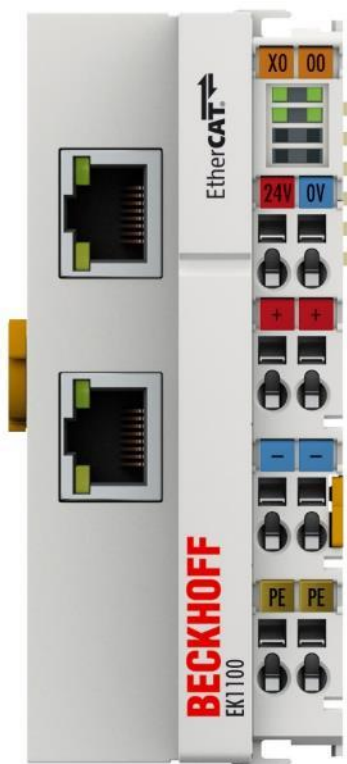


EtherCAT®

PROFI
INDUSTRIAL ETHERNET
NET

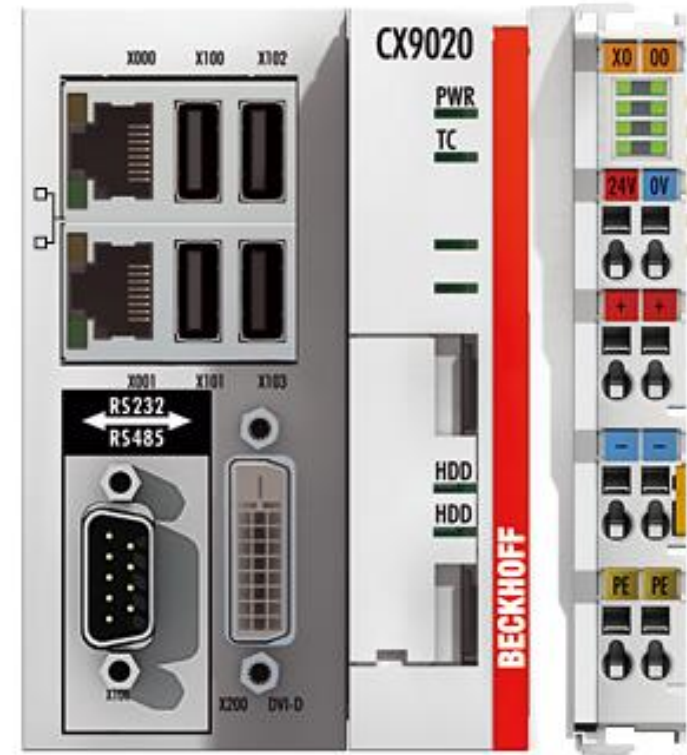
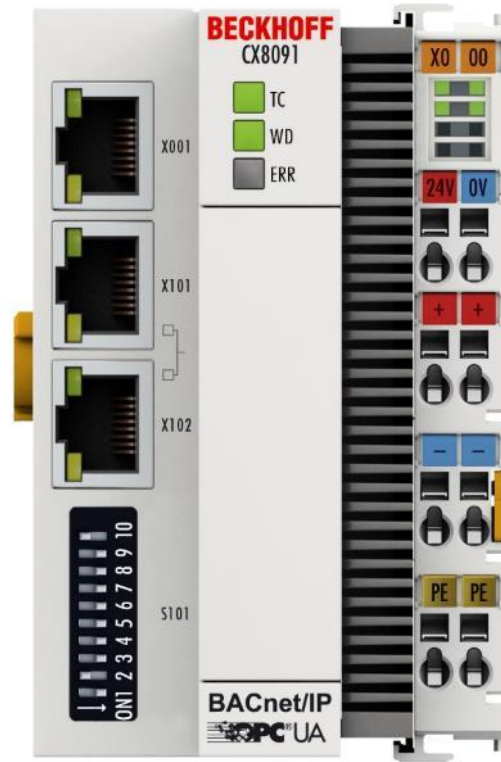
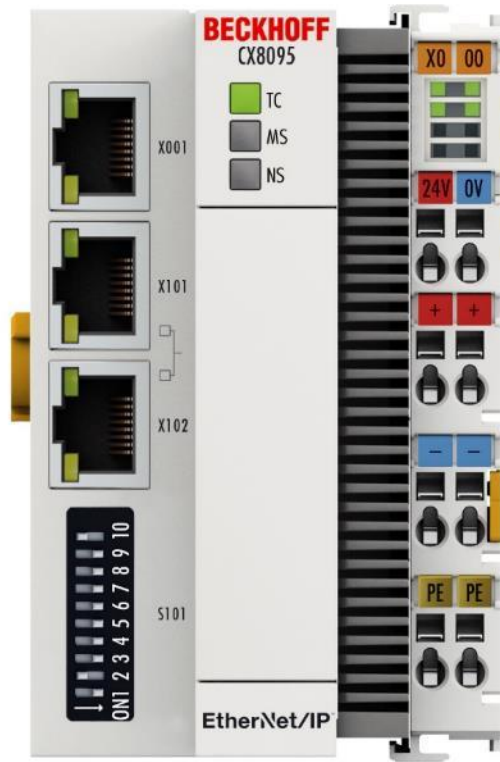
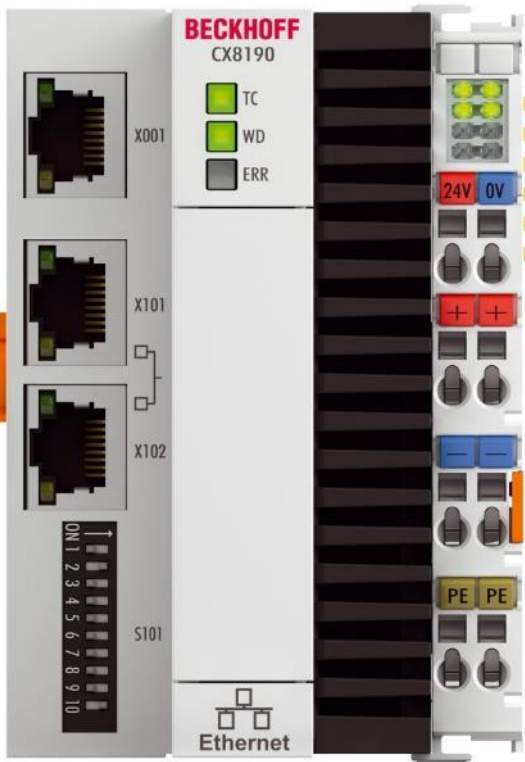
PROFI®
BUS

Modbus





EtherNet/IP™



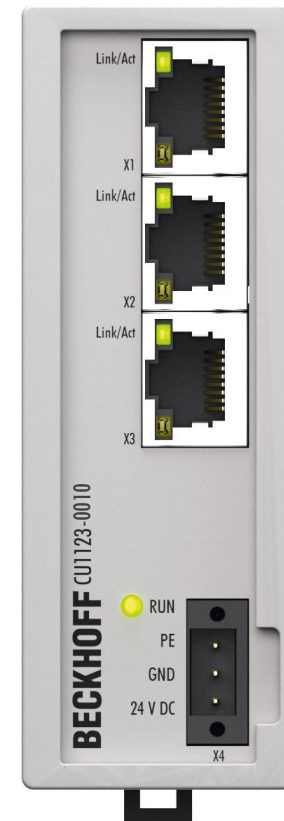
EK1101-0010
Coupler with ID switch



EK1121-0010
1-port junction



CU1123-0010
3-port junction





应用在2/22区的面板或
面板型PC



种类:

- 面板
- 面板型PC



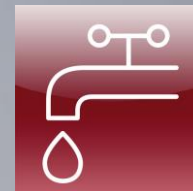
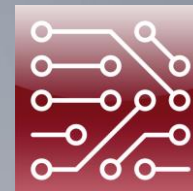
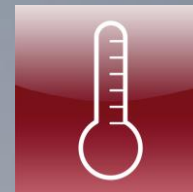
安装:

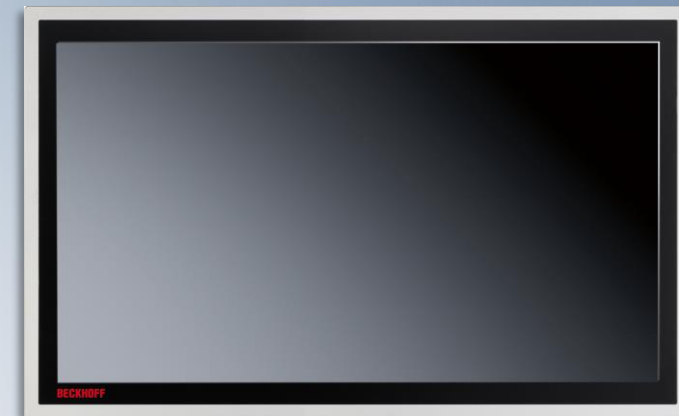
- 电柜安装
- 独立安装 (IP65)



尺寸:

- 15 寸
- 19 寸
- 21,5 寸





面板

CPX2915-0000

- 15-inch, 1024x768
- 4:3 format

CPX2919-0000

- 19-inch, 1280x1024
- 5:4 format

CPX2921-0000

- 21.5-inch, 1920x1080
- 16:9 format

面板PC

CPX2715-0010

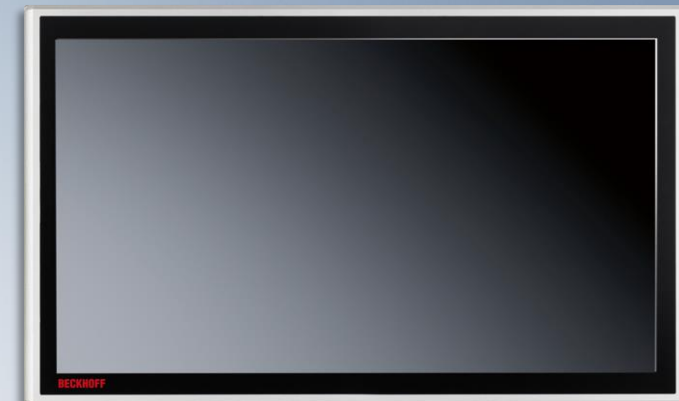
- 15-inch, 1024x768
- 4:3 format
- Intel® Atom™

CPX2719-0010

- 19-inch, 1280x1024
- 5:4 format
- Intel® Atom™

CPX2721-0010

- 21.5-inch, 1920x1080
- 16:9 format
- Intel® Atom™



面板

CPX3915-0010

- 15-inch, 1024x768
- 4:3 format

CPX3919-0010

- 19-inch, 1280x1024
- 5:4 format

CPX3921-0010

- 21.5-inch, 1920x1080
- 16:9 format

面板PC

CPX3715-0010

- 15-inch, 1024x768
- 4:3 format
- Intel® Atom™

CPX3719-0010

- 19-inch, 1280x1024
- 5:4 format
- Intel® Atom™

CPX3721-0010

- 21.5-inch, 1920x1080
- 16:9 format
- Intel® Atom™

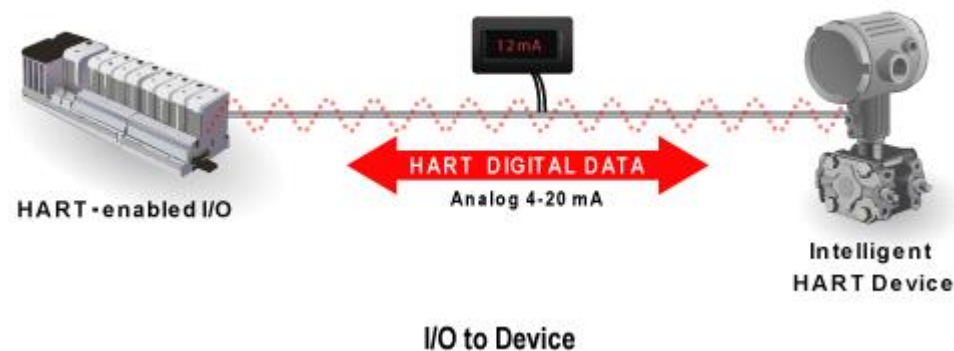
- CPX 系列: 使用在2/22区的面板和面板PC
- ELX 系列: 在12mm内集成安全栅功能的 EtherCAT端子模块
- 本安型端子模块, 可以直连0/20区
- 集成HART协议
- 集成FDT/DTM 技术
- ATEX 和IECEX 认证



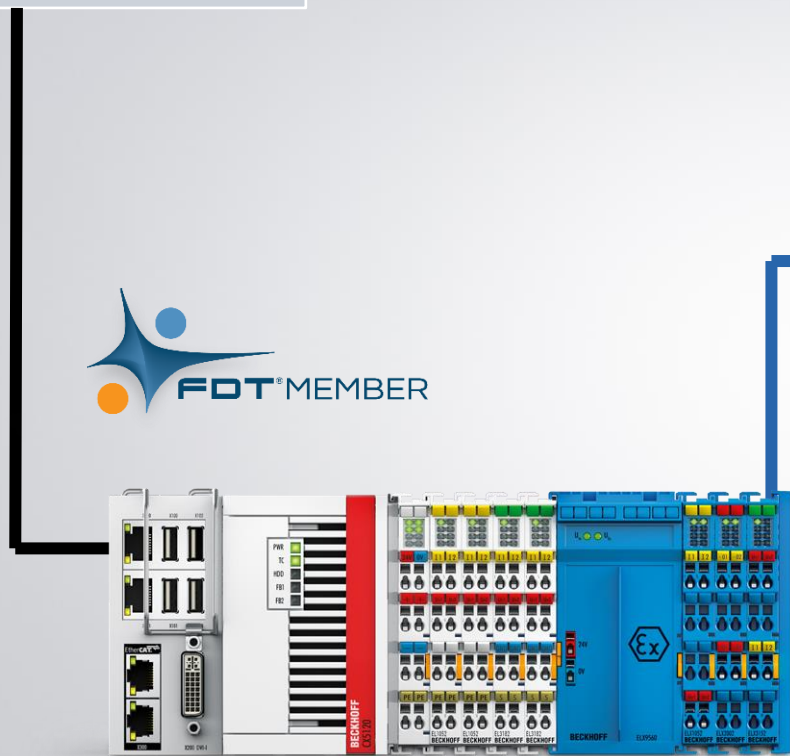
- 过程自动化标注
 - NE43 (扩展测量范围4...20 mA 信号)
 - NAMUR 标准(IEC 60947-5-6)
- HART
 - 4...20 mA
 - 传感器数, 参数和配置
- FDT/DTM



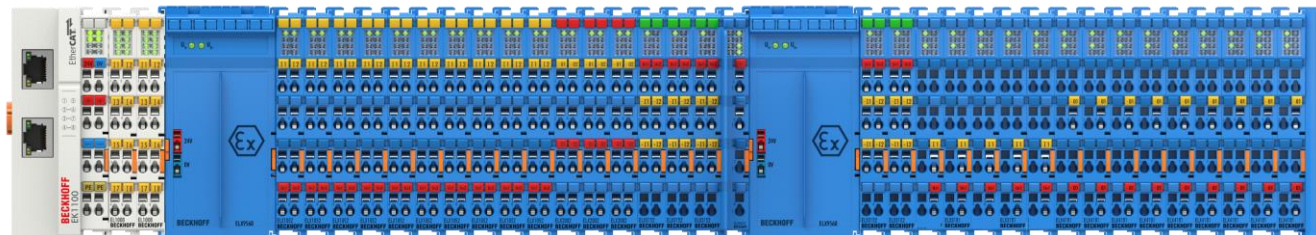
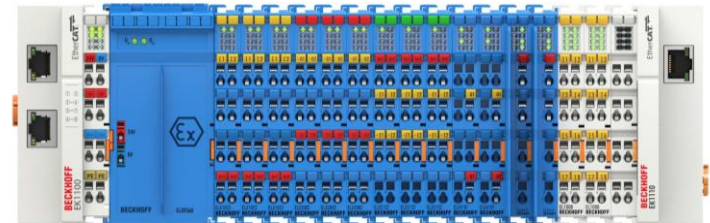
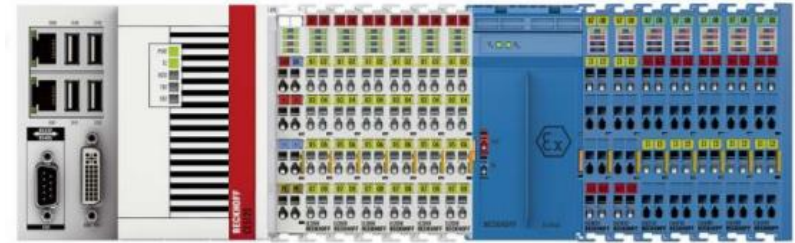
- 过程自动化中应用的最广泛的通讯技术
- 克服了模拟信号的局限性
- 叠加数字信号
- 通过4-20mA模拟电流回路发送和接收数字信息



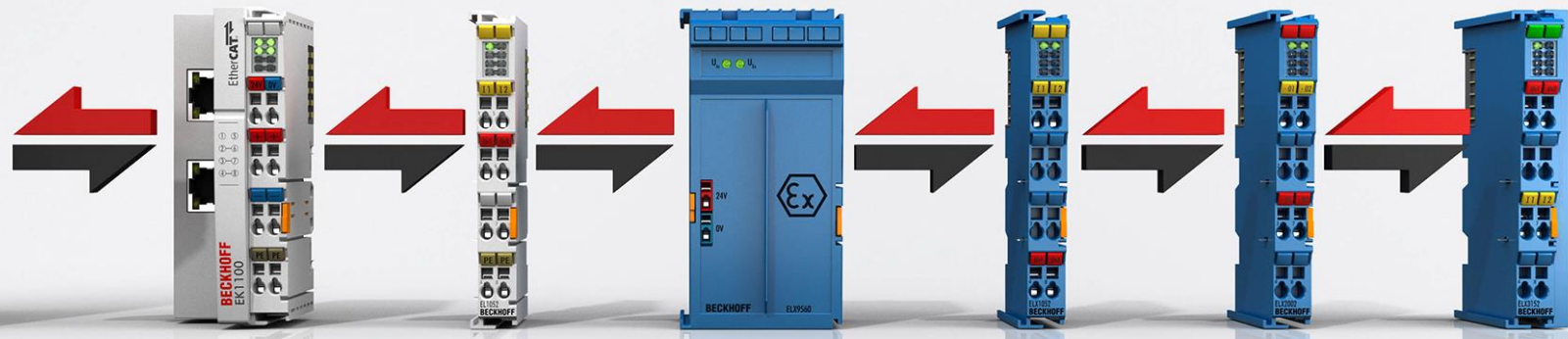
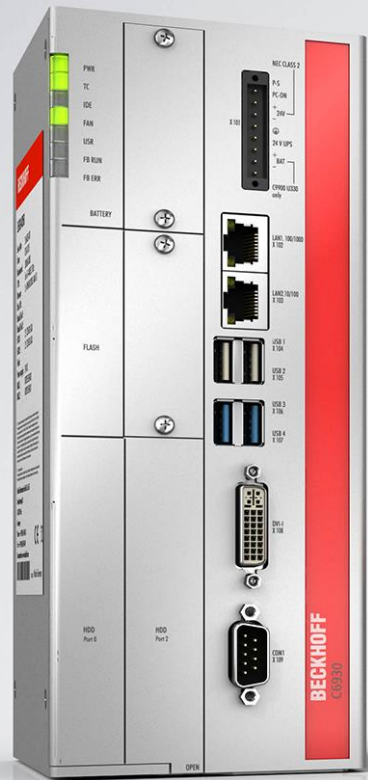
过程控制系统

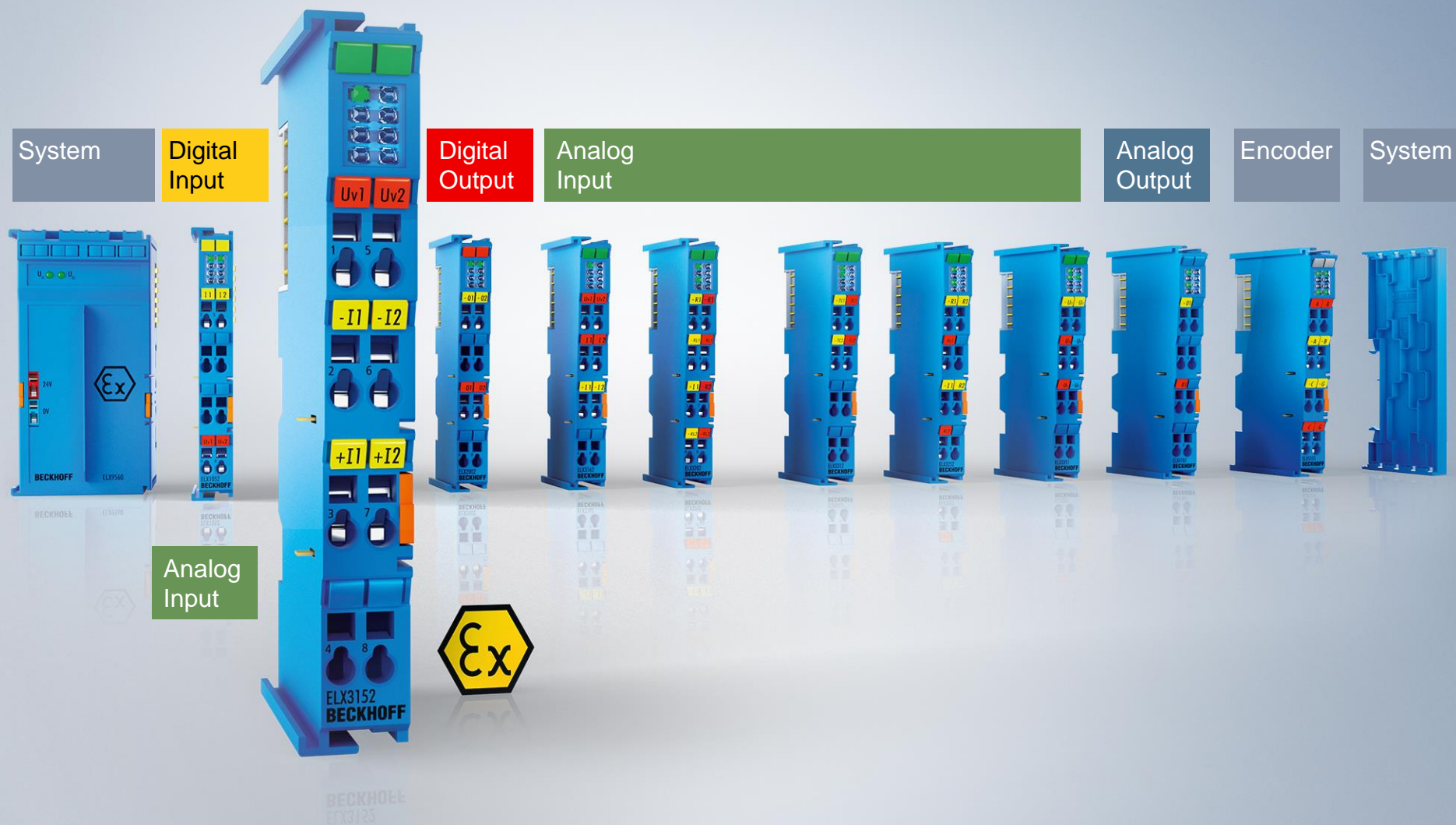


- ELX可以直接连接在CX、耦合器或者EL模块后
- EL模块可以连接在ELX模块后，但必须通过两个EL9410隔离
- 多ELX9560供电，可以在后面的ELX9560前增加EL9410

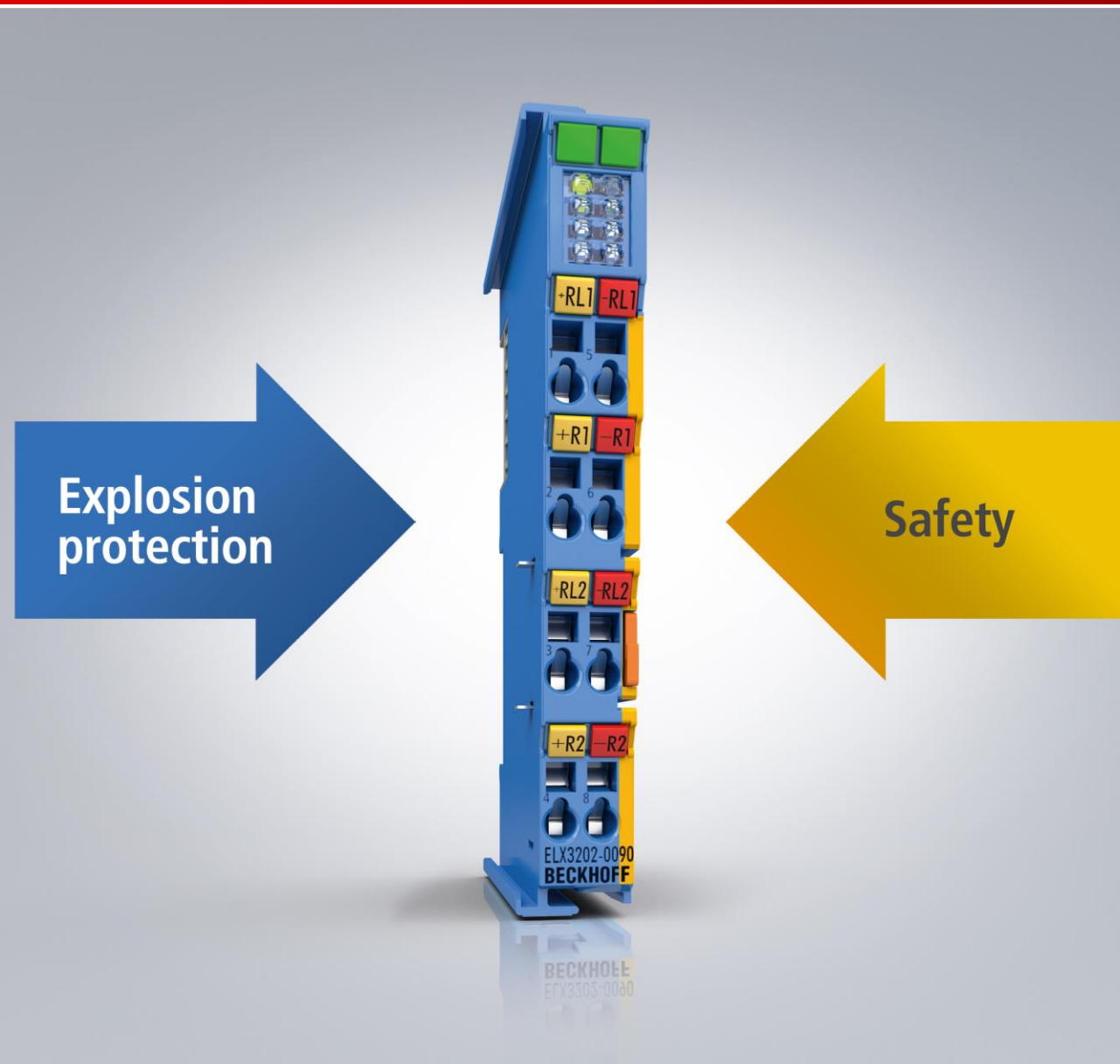


EtherCAT®





- ELX 模块集成TwinSAFE SC 功能，可以直接连接到0/20区域

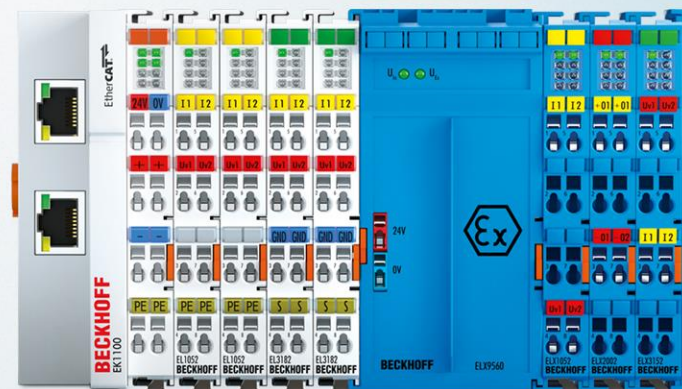


结论

- 12 mm 宽，节约 50 %空间
- 信号和隔离栅集成在一起
- 直连危险区域
- EtherCAT连接
- 信号种类丰富
- 全球范围认证
- ELX集成TwinSAFE

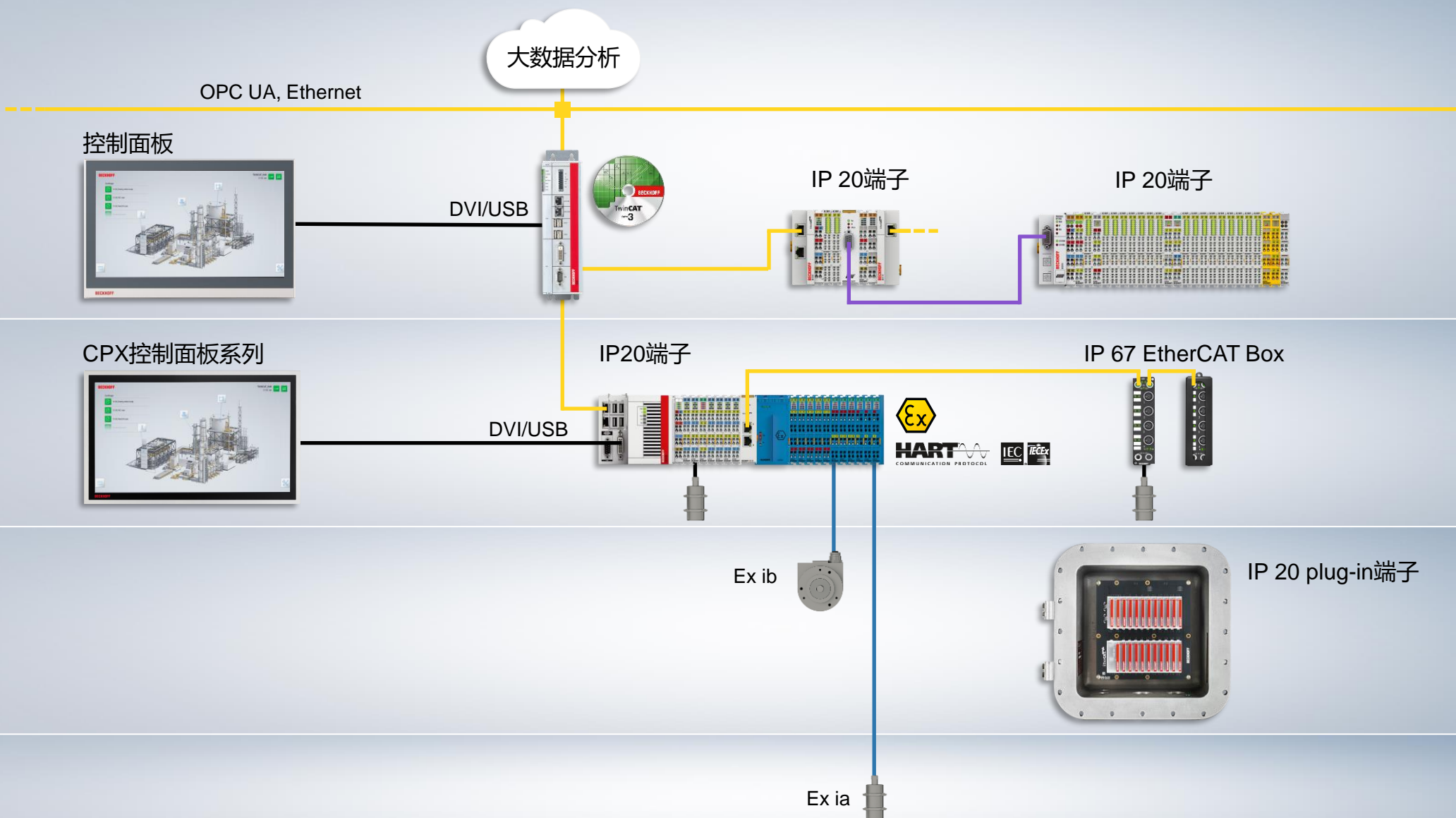
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NEW



防爆区域的应用

BECKHOFF



非危险区域

2/22区

1/21区

0/20区