

## 2 Example: type label

$T_{amb}$ [°C]	$P_{admissible}$ [W]
-20...+40	≤ 58
-20...+45	≤ 58
-20...+50	≤ 55
-20...+55	≤ 39
-20...+60	≤ 22
-20...+65	≤ 6

## 3 $P_{total}$ ( $T_{amb} \leq \dots$ °C)

Module type	$P_{module}$ [W]	$n_{module}$	$P_{total} = P_{module}$ [W] $\times$ $n_{module}$
AI401EX	2.2		
AI43EX	1.5		
AIH401Ex	3.0		
AO401EX	2.5		
AOH401Ex	3.0		
DF20EX	1.0		
DM80EX	1.0		
DO401EX	4.5		
DI401EX	2.0		
TI401EX	1.0		
TI41EX	1.0		
$\Sigma$ ( $\Pi_{total}$ )			... W
$P_{admissible}$			... W

## 4 Example: $P_{total}$ ( $T_{amb} \leq 48$ °C)

Module type	$P_{module}$ [W]	$n_{module}$	$P_{total} = P_{module}$ [W] $\times$ $n_{module}$
AI401EX	2.2		
AI43EX	1.5		
AIH401Ex	3.0		
AO401EX	2.5	1	2.5
AOH401Ex	3.0		
DF20EX	1.0	1	1.0
DM80EX	1.0		
DO401EX	4.5	10	45.0
DI401EX	2.0	1	2.0
TI401EX	1.0		
TI41EX	1.0	1	1.0
$\Sigma$ ( $\Pi_{total}$ )			51.5 W
$P_{admissible}$			55.0 W

## DE Kurzbetriebsanleitung

EG-VA655526/\*\*\*\_\*\*\*\*/2GD70.\*\*\*\*\*

### Weitere Unterlagen

Ergänzend zu diesem Dokument finden Sie im Internet unter [www.turck.com](http://www.turck.com) folgende Unterlagen:

- Datenblatt
- Betriebsanleitungen der excom-Betriebsmittel
- excom-Handbuch
- Zulassungen
- Konformitätserklärungen (aktuelle Version)

### Zu Ihrer Sicherheit

#### Bestimmungsgemäße Verwendung

Das excom-I/O-System ist ein zugelassenes Betriebsmittel für den Einsatz im Ex-Bereich, Zone 1 und 21. Der Betreiber darf nur die in Tabelle 3 aufgeführten Betriebsmittel ohne weitere Zulassung einbauen. Vor der Inbetriebnahme muss der Betreiber einen Temperaturnachweis erbringen.

Die Geräte dürfen nur wie in dieser Anleitung beschrieben verwendet werden. Jede andere Verwendung gilt als nicht bestimmungsgemäß. Für daraus resultierende Schäden übernimmt Turck keine Haftung.

#### Allgemeine Sicherheitshinweise

- Nur fachlich geschultes Personal darf das excom-I/O-System montieren, installieren, betreiben, parametrieren und instand halten.
- Das Gerät erfüllt die EMV-Anforderungen für den industriellen Bereich. Bei Einsatz in Wohnbereichen Maßnahmen treffen, um Funkstörungen zu vermeiden.

#### Hinweise zum Ex-Schutz

- Bei Einsatz des Geräts in Ex-Kreisen muss der Anwender über Kenntnisse im Explosionsschutz (IEC/EN 60079-14 etc.) verfügen.
- Nationale und internationale Vorschriften für den Explosionsschutz beachten.
- Das Gerät nur innerhalb der zulässigen Betriebs- und Umgebungsbedingungen (siehe Zulassungsdaten und Auflagen durch die Ex-Zulassung) einsetzen.
- Nicht benutzte Leitungseinführungen durch Verschlussstopfen verschließen.
- Gehäuse nur kurzzeitig zu Service- und Wartungszwecken öffnen.
- Betriebsanleitungen der eingebauten Betriebsmittel beachten.
- Die für den Einsatzbereich relevanten Zulassungen des I/O-Systems (siehe Typenschild auf dem Gehäuse) müssen auch für die eingesetzten I/O-Module vorhanden sein.

#### Produktbeschreibung

##### Geräteübersicht

Siehe Abb. 1: Abmessungen, Abb. 6: Frontansicht in Einbaulage.

#### Funktionen und Betriebsarten

Die excom-I/O-Systeme bestehen aus einem Edelstahlgehäuse der Zündschutzart Gehäuse Ex tb oder Ex e mit integriertem Modulträger. Der Modulträger kann mit verschiedenen excom-I/O-Modulen bestückt werden. Je nach Ausführung sind andere zum Betrieb benötigte Vorschalt- sowie Steuer- und Regelkomponenten herstellereitig eingebaut.

### Montieren

#### ⚠ GEFAHR

Explosionsfähige Atmosphäre

#### Explosionsgefahr durch heiße Oberflächen!

- ▶ Vor der Inbetriebnahme sicherstellen, dass die zulässige Betriebstemperatur des excom-I/O-Systems nicht überschritten wird.
- ▶ Das excom-I/O-System keiner direkten Sonneneinstrahlung aussetzen.
- ▶ Vor der Bestückung des excom-I/O-Systems und jeder Änderung der Bestückung einen schriftlichen Temperaturnachweis durchführen. Für die Bestückung ausschließlich die in Tabelle 3 genannten I/O-Module verwenden.
- ▶ Keine Komponenten in das Gehäuse einbauen, die zusätzliche Verlustleistung in das Gehäuse einbringen.

#### Temperaturnachweis durchführen

Der Betreiber muss vor der ersten und jeder Änderung der Bestückung schriftlich nachweisen, dass die Betriebstemperatur des excom-I/O-Systems bei der maximal möglichen Umgebungstemperatur nicht überschritten wird. Ein erfolgreich geführter Temperaturnachweis ist Bestandteil der Anlagendokumentation, die der Betreiber bereitstellen muss.

- ▶ Maximal mögliche Umgebungstemperatur ermitteln, die am Montageort des excom-I/O-Systems auftreten kann, und in Tabelle 3 eintragen.
- ▶ Auf dem Typenschild des Systemgehäuses in der Tabellenspalte  $T_{amb}$  [°C] den passenden Temperaturbereich wählen.
- ▶ Auf dem Typenschild den Wert der maximal zulässigen Gesamtverlustleistung  $P_{admissible}$  auswählen, der dem gewählten Temperaturbereich entspricht.
- ▶ Maximal zulässige Gesamtverlustleistung  $P_{admissible}$  der Module in Tabelle 3 eintragen.
- ▶ Pro Modultyp: Anzahl der vorgesehenen Module in Tabelle 3, Spalte  $n_{module}$  eintragen.
- ▶ Pro Modultyp: Leistung  $P_{module}$  mit der Anzahl  $n_{module}$  multiplizieren und das Ergebnis in Tabelle 3, Spalte  $P_{total}$  eintragen.
- ▶ Werte der Spalte  $P_{total}$  addieren und Summe  $\Sigma$  ( $\Pi_{total}$ ) in Tabelle 3 eintragen.
- ▶ Falls  $\Sigma$  ( $\Pi_{total}$ )  $\leq P_{admissible}$ : Der Temperaturnachweis ist erfolgreich erbracht, d. h. die Gesamtverlustleistung der Module ist kleiner oder gleich der zulässigen Gesamtverlustleistung. Die vorgesehenen Module dürfen eingebaut werden.
  - ▶ Temperaturnachweis in die Anlagendokumentation aufnehmen.
- ▶ Falls  $\Sigma$  ( $\Pi_{total}$ )  $> P_{admissible}$ : Der Temperaturnachweis ist nicht erfolgreich erbracht, d. h. die maximale Gesamtverlustleistung der Module überschreitet die zulässigen Gesamtverlustleistung.
  - ▶ Anzahl der Module reduzieren.
  - ▶ Temperaturnachweis wiederholen.

#### Beispiel für den Temperaturnachweis (Tabelle 4)

Voraussetzungen:

- Umgebungstemperatur am Montageort des excom-I/O-Systems max. 48 °C
- $P_{admissible} \leq 55$  W für  $T_{amb}$  -20...+50 °C gemäß Typenschild am Gehäuse (siehe Tabelle 2)
- Der Temperaturnachweis muss für  $P_{admissible} \leq 55$  W durchgeführt werden.
- 14 Module sollen in das Systemgehäuse eingebaut werden

Ein erfolgreich durchgeführter Temperaturnachweis ist in Tabelle 4 beschrieben: Die vorgesehenen Module erreichen eine maximale Gesamtverlustleistung von 51,5 W. Damit ist der Temperaturnachweis für  $P_{admissible}$  (max. 55 W) erfolgreich erbracht.

## EN Quick Start Guide

EG-VA655526/\*\*\*\_\*\*\*\*/2GD70.\*\*\*\*\*

### Other documents

Besides this document the following material can be found on the Internet at [www.turck.com](http://www.turck.com):

- Data sheet
- Instructions for use for excom equipment
- excom manual
- Approvals
- Declarations of conformity (current version)

### For your safety

#### Intended use

The excom I/O system is approved for use in hazardous areas, Zones 1 and 21. The operator may only install the equipment listed in table 3 without further approval. Before commissioning, the operator must provide proof of temperature. The devices must only be used as described in these instructions. Any other use is not in accordance with the intended use. Turck accepts no liability for any resulting damage.

#### General safety instructions

- The excom I/O system may only be assembled, installed, operated, parameterized and maintained by professionally trained personnel.
- The device meets the EMC requirements for the industrial area. When used in residential areas, take measures to prevent radio interference.

#### Notes on Ex protection

- When using the device in explosion-protection circuits, the user must have a working knowledge of explosion protection (IEC/EN 60079-14 etc.).
- Observe national and international regulations for explosion protection.
- Only use the device within the permissible operating and ambient conditions (see certification data and Ex approval specifications).
- Seal unused cable entries with sealing plugs
- Only open the housing for a short period of time to perform service and maintenance tasks.
- Observe the instructions for use of the installed equipment.
- The I/O system approvals relevant for the application area (see type label plate on the housing) must also be available for the I/O modules used.

### Product description

#### Device overview

See fig. 1: dimensions, fig. 6: front view in the installation position

#### Functions and operating modes

The excom I/O systems consist of a stainless steel housing from explosion protection category Ex tb or Ex e with an integrated module rack. The module rack can be equipped with various excom I/O modules. Depending on the version, other upstream and control components that are required for operation may be installed by the manufacturer.

### Installing

#### ⚠ DANGER

Potentially explosive atmosphere

#### Explosion hazard due to hot surfaces!

- ▶ Before commissioning, ensure that the maximum permissible operating temperature of the excom I/O system is not exceeded.
- ▶ Do not expose the excom I/O system to direct sunlight.
- ▶ Before equipping and every change of equipment of the excom I/O system, a written proof of temperature must be provided. Use only the I/O modules indicated in table 3 for configuration.
- ▶ Do not install any components into the housing that will cause additional heat dissipation there.

#### Providing proof of temperature

Prior to the first and every change of the equipment, the operator must prove in writing that the operating temperature of the excom-I/O system is not exceeded at the maximum possible ambient temperature. Written proof of the temperature forms an integral part of the plant documentation that the operator must provide.

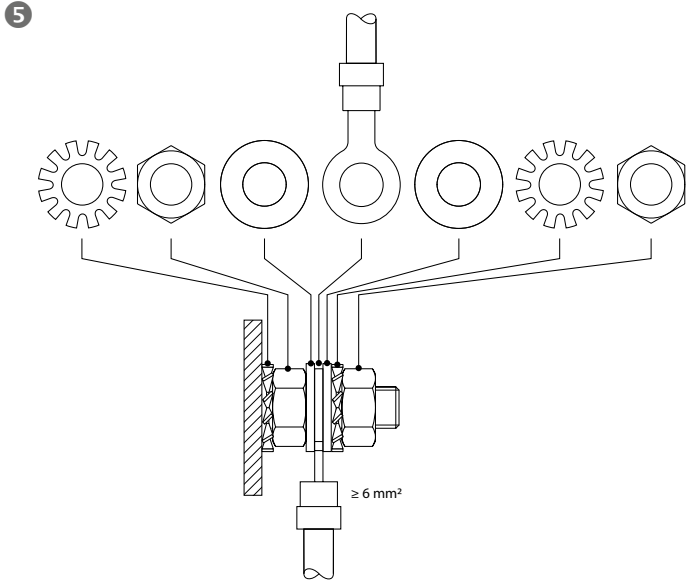
- ▶ Determine the maximum possible ambient temperature for the location in which the excom I/O system is installed, and enter this information in table 3.
- ▶ Select the relevant temperature range in the  $T_{amb}$  [°C] column using the nameplate on the system housing.
- ▶ Using the nameplate, select the value for the maximum admissible total power dissipation ( $P_{admissible}$ ) that corresponds to the selected temperature range.
- ▶ Enter the maximum admissible total power dissipation ( $P_{admissible}$ ) for the modules in table 3.
- ▶ For each module type: Enter the number of modules that you are intending to use in the  $n_{module}$  column of table 3.
- ▶ For each module type: Multiply the power ( $P_{module}$ ) by the number of modules ( $n_{module}$ ) and enter the result in the  $P_{total}$  column of table 3.
- ▶ Add the values in the  $P_{total}$  column together and enter the total in the  $\Sigma$  ( $\Pi_{total}$ ) row of table 3.
- ▶ If  $\Sigma$  ( $\Pi_{total}$ )  $\leq P_{admissible}$ : The proof of temperature has been successfully completed, i.e., the total power dissipation of the modules is less than or equal to the admissible total power dissipation. The modules that you are intending to use may be installed
  - ▶ Record the proof of temperature in the plant documentation.
- ▶ If  $\Sigma$  ( $\Pi_{total}$ )  $> P_{admissible}$ : The proof of temperature has been unsuccessful, i.e., the total power dissipation of the modules exceeds the admissible total power dissipation.
  - ▶ Reduce the number of modules.
  - ▶ Provide proof of temperature again.

#### Example proof of temperature (table 4)

Prerequisites:

- Max. ambient temperature at installation location of the excom I/O system is 48 °C.
- $P_{admissible} \leq 55$  W for  $T_{amb}$  -20...+50 °C in accordance with the nameplate on the housing (see table 2).
- The proof of temperature must be completed for  $P_{admissible} \leq 55$  W.
- 14 modules need to be installed in the system housing.

A successfully performed proof of temperature is outlined in table 4: The modules intended for use reach a maximum total power dissipation of 51.5 W. This means that the proof of temperature has been successfully completed for  $P_{admissible}$  (max. 55 W).



## EU Declaration of conformity

## EU-Konformitätserklärung Nr. 5221-2M

EU Declaration of Conformity No.:

TURCK

Wir/We HANS TURCK GMBH & CO KG  
Witzlebenstr. 7, 45472 Mülheim an der Ruhr, Germany

erklären in alleiniger Verantwortung, dass die Produkte des  
declare under our sole responsibility that the products of

I/O Feldbussystem excom® / I/O fieldbussystem excom®

Baureihe / series:

EG-VA\*\*\*\*\*/\*\*\*\_\*\*\*\*/2GD\*\*.\*

Ex-Kennzeichnung (abhängig von den im Schrank eingebauten Komponenten):  
Ex-marking (depending on the components installed in the enclosure):

Gas / gas II 2 (1) G Ex e q d mb ib [ia Ga] [op is] IIC T4 Gb  
Staub / dust II 2 (1) D Ex tb [ia Da] [op is] IIC T135°C Db

Typen siehe Anlage / types see annex

auf die sich die Erklärung bezieht, den Anforderungen der folgenden EU-Richtlinien durch Einhaltung der  
folgenden harmonisierten Normen genügen:  
to which this declaration relates are in conformity with the requirements of the following EU-directives by compliance with the following  
harmonised standards:

EMV-Richtlinie / EMC Directive	2014 / 30 / EU	26. Feb. 2014
EN 61326-1: 1*)	EN 61000-3-2: 1*)	EN 61000-6-3: 1*)
EN 61000-6-4: 1*)		EN 61000-6-2: 1*)

ATEX-Richtlinie / ATEX Directive	2014 / 34 / EU	26. Feb. 2014
EN 60079-0: 1*)	EN 60079-1: 1*)	EN 60079-5: 1*)
EN 60079-11: 1*)	EN 60079-18: 1*)	EN 60079-7: 1*)
EN 60079-28: 1*)	EN 60079-25: 1*)	EN 60079-26: 1*)
EN 60079-31: 1*)		

RoHS-Richtlinie/ RoHS Directive	2011 / 65 / EU	08. Jun. 2011

Weitere Normen, Bemerkungen  
additional standards, remarks

1\*) Angewandte Normen, sowie Jahreszahlen bitte den EU-Konformitätserklärungen der tatsächlich bestückten  
Betriebsmittel entnehmen.

1\*) Please find the applicable standards, as well as the annual figures in the EU declarations of conformity of the actual assembled devices  
and modules

Angewandtes ATEX-Konformitätsbewertungsverfahren / ATEX - conformity assessment procedure applied:  
Modul B + Modul E (enthalten in Modul D) / module B + module E (part of module D)

EU-Baumusterprüfbescheinigung gemäß Modul B / EU-type examination certificate according to module B:  
PTB 16 ATEX 2006

ausgestellt von / issued by: Physikalisch Technische Bundesanstalt, Kenn-Nr. / number 0102,  
Bundesallee 100, 38116 Braunschweig, Germany

Zertifizierung des QS-Systems gemäß Modul D durch:  
Certification of the QS-system in accordance with module D by:

Physikalisch Technische Bundesanstalt, Kenn-Nr. / number 0102,  
Bundesallee 100, 38116 Braunschweig, Germany

Mülheim, den 20.06.2018

i.V. U. Vix, CE-Koordinatorin / CE Coordinator

Ort und Datum der Ausstellung /  
Place and date of issue

Name, Funktion und Unterschrift des Befugten /  
Name, function and signature of authorized person

## DE Kurzbetriebsanleitung

## Nachweis der Eigensicherheit durchführen

Aufgrund der Systembescheinigung PTB 16 ATEX 2006 bzw. IECEx PTB 16.0020 ist für die eingebauten, werksseitig miteinander verdrahteten Betriebsmittel kein gesonderter Nachweis der Eigensicherheit erforderlich (gemäß IEC/EN 60079-14).

Der Anlagenbetreiber muss einen Nachweis der Eigensicherheit für folgende Installationen führen:

- Nachweis der Eigensicherheit durchführen für die Kombination aus den in Tabelle 3 eingetragenen Modulen und den daran angeschlossenen eigensicheren Betriebsmitteln im Feld.
- Nachweis der Eigensicherheit durchführen, wenn das Signal der RS485-IS-Schnittstelle zu weiteren Modulträgern durchgeschleift wird (siehe Handbuch, Hinweise zur Systemzulassung des RS485-IS Ex i-Layers).
- Bei Varianten ohne eingebauten LWL-Koppler: Nachweis der Eigensicherheit durchführen, wenn die RS485-IS-Schnittstelle des Modulträgers mit einem RS485-IS-Signal aus dem Segmentkoppler (z. B. SC12EX) betrieben wird (siehe Handbuch, Hinweise zur Systemzulassung des RS485-IS Ex i-Layers).
- Nachweis der Eigensicherheit durchführen für jede sonstige eigensichere Verkabelung, die aus dem Schaltschrank bzw. Gehäuse heraus- oder hineingeführt wird.

## Systemgehäuse montieren

## ⚠ GEFAHR

Explosionsfähige Atmosphäre

## Explosionsgefahr durch heiße Oberflächen!

- Gehäuse so montieren, dass sich die Kabelverschraubungen an der Unterseite befinden und schlaggeschützt sind.

## Gehäusetür schließen

- Fremdkörper einschließlic Dokumentation aus dem Gehäuse entfernen.
- Gehäusetür verschließen.

## Anschließen

- Leitungen durch die Leitungseinführungen im Systemgehäuse legen.
- Nur festverlegte, zugentlastete Leitungen durch die Leitungverschraubung führen.
- Nicht benutzte Leitungseinführungen durch Verschlussstopfen verschließen.

## Versorgungsspannung anschließen

## ⚠ GEFAHR

Hohe Spannung

## Lebensgefahr durch elektrischen Schlag!

- An den Anschlussklemmen nur im spannungslosen Zustand arbeiten.
- Nach Abschalten der Versorgungsspannung mindestens 5 min warten.

## Certification data

## Approvals and markings

Approvals	Marking parts in acc. with	
	ATEX directive	Example for max. assembly
ATEX Certificate number: PTB 16 ATEX 2006	⊕ II 2 (1) G ⊕ II 2 (1) D	Ex e q d mb ib [ia Ga] [op is] IIC T4 Gb Ex tb [ia Da] [op is] IIC T135 °C Db
IECEx Certificate number: IECEx PTB 16.0020	CE	

Permissible ambient temperature range  $T_{amb}$ : see table 2

## EN Quick Start Guide

## Providing proof of intrinsic safety

Due to the system certificate PTB 16 ATEX 2006 or IECEx PTB 16.0020, no separate proof of intrinsic safety is required for any built-in equipment wired together at the factory (acc. to IEC/EN 60079-14).

The plant operator must ensure proof of intrinsic safety is available for the following installations:

- Provide proof of intrinsic safety for the combination of modules listed in table 3 and the intrinsically safe equipment connected to these modules used in the field.
- Provide proof of intrinsic safety if the signal from the RS485-IS interface is looped through to additional module racks (see manual, "Instructions for system approval of the RS485-IS Ex i-layer").
- In the case of variants without a built-in fiber-optic coupler: Provide proof of intrinsic safety if the RS485-IS interface of the module rack is operated with an RS485-IS signal from a segment coupler, e. g. SC12EX (see manual, "Instructions for system approval of the RS485-IS Ex i-layer").
- Provide proof of intrinsic safety for any other intrinsically safe wiring leading from or to the switch cabinet or housing.

## Installing the system housing

## ⚠ DANGER

Potentially explosive atmosphere

## Explosion hazard due to hot surfaces!

- Install the housing so that the cable glands are at the bottom and are protected against impact.

## Closing the housing door

- Remove foreign bodies including the documentation from the housing.
- Close the housing door.

## Connection

- Route the cables through the cable entries in the system housing.
- Only route fixed, strain-relieved cables through the cable gland.
- Seal unused cable entries with sealing plugs.

## Connecting the power supply

## ⚠ DANGER

High voltage

## Risk to life due to electric shock

- Only perform work on the connection terminals when they are de-energized.
- After switching off the supply voltage, wait at least 5 minutes.

➤ If the supply voltage is provided directly at the terminals of the module rack (MT08-2G, MT16-2G, MT16-2G/MSA or MT-PPS): Note the operating instructions for the module rack.

➤ If a supply voltage of 230 VAC or 115 VAC is connected via PPSA230Ex- or PPSA115Ex converter: Use a cable protection fuse of a maximum of 5 A (safety-related maximum voltage of the converter:  $U_m$  250 V).

➤ If a supply voltage of 24 VDC is connected via the PSD24Ex power supply unit: Use a cable protection fuse of a maximum of 10 A (safety-related maximum voltage of the power supply unit:  $U_m$  60 V).

➤ Connect the supply voltage to the continuity safety terminals (below the IP30 cover). The max. permissible cable cross-sections and permissible tightening torques can be found in the operating instructions of the installed terminals.

## Connecting field devices

➤ Connect the cables in accordance with the wiring diagram for the I/O modules. The maximum permissible conductor cross-section is 1.5 mm<sup>2</sup> (rigid) and 1.5 mm<sup>2</sup> (flexible).

## Connecting the equipotential bonding

➤ The excom system enclosure forms part of the equipotential bonding system. Connect the equipotential bonding to the outside of the system housing using a conductor cross-section of at least 6 mm<sup>2</sup>. The design of the connecting pin is shown in fig. 5.

## Commissioning

➤ Connect dummy modules to unused ports. You can then commission the excom I/O system. For more information about commissioning the excom I/O system, refer to the manual.

## Operation

The housing may be opened momentarily during ongoing operation to perform maintenance and adjustment work. Work may be performed on intrinsically safe field current circuits while the system is energized. For more information about operating the excom I/O system, please refer to the manual.

## Repair

The device must be decommissioned if it is faulty. The device may only be repaired by Turck. When returning the device to Turck, please refer to our return policies.

## Disposal

⌘ The devices must be disposed of correctly and must not be included in general household garbage.



**EU-Konformitätserklärung Nr. 5221-2M**  
EU Declaration of Conformity No.:



Anlage / Annex: Typenbezeichnung gemäß / Types in accordance with PTB 16 ATEX 2006

EG-VA \*\*\*\*\* / \*\*\*\_\*\*\*/2GD70.\*\*\*\*\*

Sondernummer für explosionsgeschützte Zusatzeinbauten, der Kategorie 2, wie Betäubungsschutz, spez. Bohrbild, von Gehäuseklasse abweichende Größe, etc.  
Special number for explosion protected additional equipment, of category 2, as moisture condensation protection, special drilling pattern, size deviating from enclosure class, etc.  
B\*\*\*\* Sonderbestückung bei fester Umgebungstemperatur / Special assembling with specified ambient temperature

Modulklassen / module classes: Bestückung mit / assembled with  
60 Modulen / modules  $\leq T_{amb} Modul + 60^{\circ}C$   
70 Modulen / modules  $\leq T_{amb} Modul + 70^{\circ}C$

Einbau von Segmentkopplern / installation of segment couplers:

- 0 Kein Segmentkoppler / no segment coupler
- 1 1 Segmentkoppler Typ / 1 segment coupler type: OC11Ex
- 2 2 Segmentkoppler Typ / 2 segment couplers type: OC11Ex
- 3 1 alternativer Segmentkoppler / 1 alternative segment coupler: (Details in BV...)
- 4 2 alternative Segmentkoppler / 2 alternative segment couplers: (Details in BV...)

- 0 Ohne Vorschaltbaugruppe Typ / Without series assembly type MT-PPS
- 1 Mit Vorschaltbaugruppe Typ / With series assembly type MT-PPS
- 2 Einbau von 1 Netzteil / Installation of 1 power supply unit 230/115V AC
- 3 Einbau von 2 Netzteilen / Installation of 2 power supply units 230/115V AC

- 01 Modulträger / Module rack MT08-2G
- 02 Modulträger / Module rack MT16-2G
- 10 Modulträger / Module rack MT16-2G/MSA

- 0 Blindplatte (Bohrungen durch Anwender nach Betriebsanleitung) / Blind plate (drilling by user acc. to operating instructions manual)
- 1 Flanschplatte M16 Bohrungen, max. Bestückung / Flange plate M16 drill holes, max. assembling
- 2 Flanschplatte M20 Bohrungen, max. Bestückung / Flange plate M20 drill holes, max. assembling
- 3 Sonderausführung, z.B. Bohrbild (erfasst in BV.. Nummer) / Special variant, e.g. drilling pattern (included in BV.. number)
- 4 Flanschplatte M16 Standardbestückung / Flange plate M16 drill holes, standard assembling
- 5 Flanschplatte M20 Standardbestückung / Flange plate M20 drill holes, standard assembling

- 0 ohne Sichtfenster / without inspection window
- 1 mit Sichtfenster / with inspection window

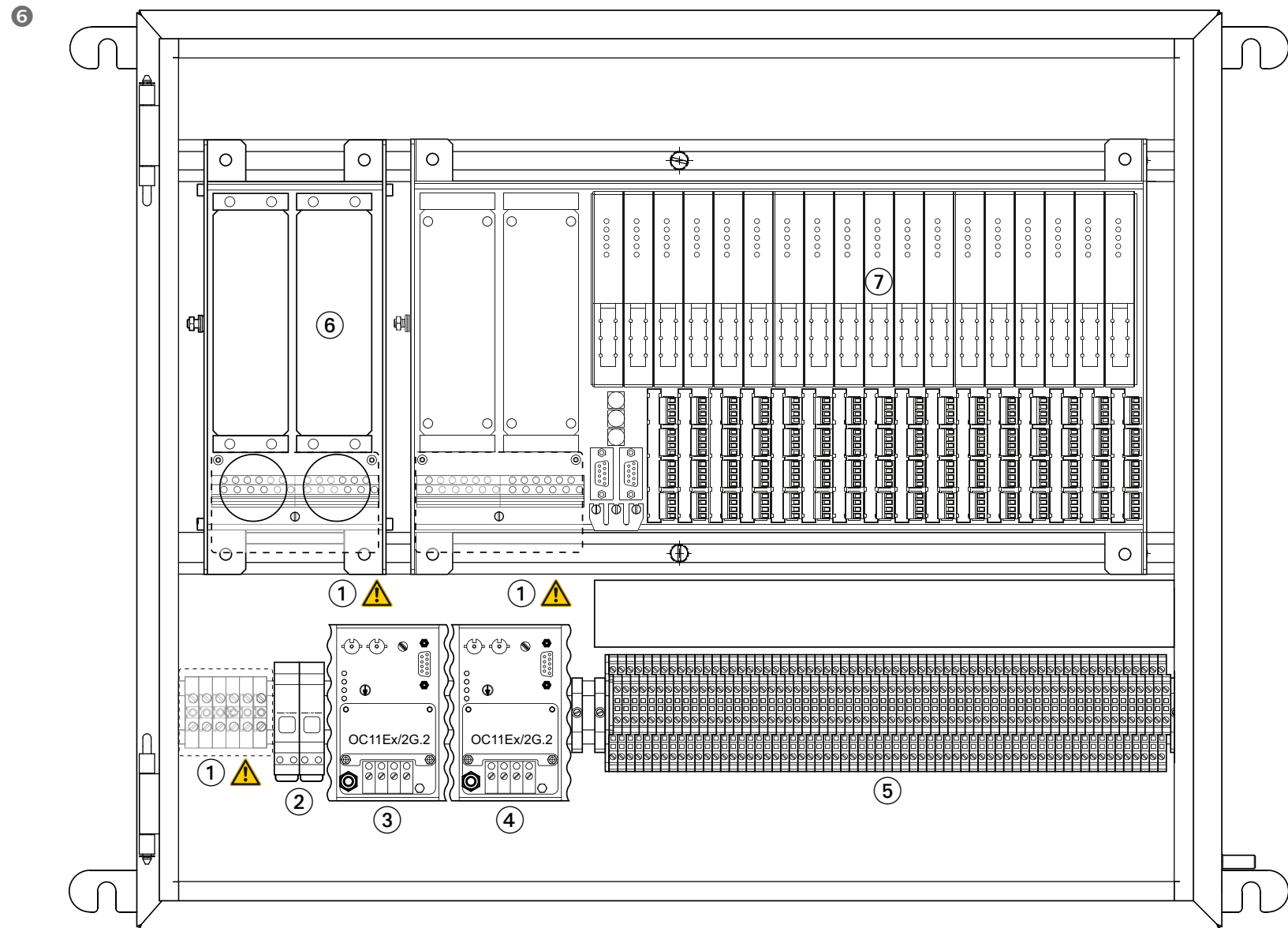
- 0 Gehäusematerial Edelstahl / Enclosure material stainless steel: 1.4301
- 1 Gehäusematerial Edelstahl / Enclosure material stainless steel: 1.4404
- 2 andere Legierungen mit ident. Wärmewiderstand / other alloys with identical thermal resistance

Gehäuseklassen / Enclosure classes:

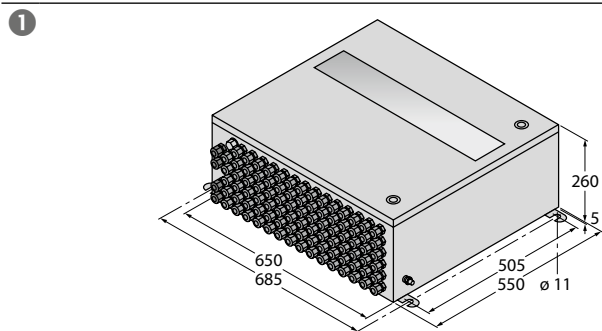
- TT Gehäusetiefe in cm / Enclosure depth in cm: (Standard: 26)
- (H)HH Gehäuserhöhe in cm / Enclosure height in cm: (Standard: 55)

- (B)BB(H)HHTT (B)BB Gehäuserbreite in cm / Enclosure width in cm: (Standard: 46, 65, 80)

Front view – in installation position



- ① ⚠ Anschluss für Versorgungsspannung unter der IP30-Klemmenabdeckung, Position je nach Geräteausführung / Connection for supply voltage is below the IP30 terminal cover; position may vary depending on the design
- ② - ⑥ optional / Optional
- ⑦ Slots für Gateway und I/O-Module / Slots for gateway and I/O modules



## 2 Example: type label

T <sub>amb</sub> [°C]	P <sub>admissible</sub> [W]
-20...+40	≤ 58
-20...+45	≤ 58
-20...+50	≤ 55
-20...+55	≤ 39
-20...+60	≤ 22
-20...+65	≤ 6

## 3 P<sub>total</sub> (T<sub>amb</sub> ≤ ... °C)

Module type	P <sub>module</sub> [W]	n <sub>module</sub>	P <sub>total</sub> = P <sub>module</sub> [W] × n <sub>module</sub>
AI401EX	2.2		
AI43EX	1.5		
AIH401Ex	3.0		
AO401EX	2.5		
AOH401Ex	3.0		
DF20EX	1.0		
DM80EX	1.0		
DO401EX	4.5		
DI401EX	2.0		
TI401EX	1.0		
TI41EX	1.0		
Σ (Π <sub>total</sub> )			... W
P <sub>admissible</sub>			... W

## 4 Example: P<sub>total</sub> (T<sub>amb</sub> ≤ 48 °C)

Module type	P <sub>module</sub> [W]	n <sub>module</sub>	P <sub>total</sub> = P <sub>module</sub> [W] × n <sub>module</sub>
AI401EX	2.2		
AI43EX	1.5		
AIH401Ex	3.0		
AO401EX	2.5	1	2.5
AOH401Ex	3.0		
DF20EX	1.0	1	1.0
DM80EX	1.0		
DO401EX	4.5	10	45.0
DI401EX	2.0	1	2.0
TI401EX	1.0		
TI41EX	1.0	1	1.0
Σ (Π <sub>total</sub> )			51.5 W
P <sub>admissible</sub>			55.0 W

## FR Guide d'utilisation rapide

EG-VA655526/\*\*\*\_\*\*\*\*/2GD70.\*\*\*\*\*

### Documents supplémentaires

Vous trouverez les documents suivants contenant des informations complémentaires à la présente notice sur notre site Web [www.turck.com](http://www.turck.com) :

- Fiche technique
- Mode d'emploi de l'équipement excom
- Manuel excom
- Homologations
- Déclarations de conformité (version actuelle)

### Pour votre sécurité Utilisation conforme

Le système d'E/S excom est un équipement approuvé pour une utilisation dans les zones Ex, zones 1 et 21. L'opérateur ne peut installer sans autres homologations que les équipements répertoriés dans le tableau 3. Avant la mise en service, l'opérateur doit effectuer un contrôle de température.

Les appareils doivent exclusivement être utilisés conformément aux indications figurant dans la présente notice. Toute autre utilisation est considérée comme non conforme. La société Turck décline toute responsabilité en cas de dommages causés par une utilisation non conforme.

### Consignes de sécurité générales

- Seul le personnel spécialement formé peut monter, installer, exploiter, paramétrer et effectuer la maintenance du système d'E/S excom.
- L'appareil répond aux exigences CEM pour le domaine industriel. Prenez des mesures pour éviter les perturbations radioélectriques lorsque l'appareil est utilisé dans des zones résidentielles.

### Indications relatives à la protection contre les explosions

- Pour toute utilisation en milieu Ex, l'opérateur doit posséder des connaissances en matière de protection contre les explosions (CEI/EN 60079-14, etc.).
- Respectez les consignes nationales et internationales relatives à la protection contre les explosions.
- Utilisez uniquement l'appareil dans le respect le plus strict des conditions ambiantes et des conditions d'exploitation autorisées (voir données de certification et consignes relatives à l'homologation Ex).
- Les entrées de câbles non utilisées sont à fermer avec des bouchons d'obturation.
- N'ouvrez le boîtier que brièvement à des fins d'entretien et de maintenance.
- Respectez le mode d'emploi de l'équipement installé.
- Les homologations du système d'E/S correspondant au champ d'application (voir plaque signalétique sur le boîtier) doivent également être disponibles pour les modules d'E/S utilisés.

### Description du produit

#### Aperçu de l'appareil

Voir fig. 1 : Dimensions, fig. 6 : Vue de face en position de montage.

#### Fonctions et modes de fonctionnement

Les systèmes d'E/S excom sont constitués d'un boîtier en acier inoxydable de type de protection Ex tb ou Ex e avec support de module intégré. Le support de module peut être équipé de différents modules d'E/S excom. Selon la version, d'autres composants de ballast, de commande et de régulation, nécessaires au fonctionnement, sont installés par le fabricant.

### Montage

#### ⚠ DANGER

Atmosphère présentant un risque d'explosion  
**Risque d'explosion en raison de surfaces chaudes !**

- ▶ Avant la mise en service, assurez-vous que la température de fonctionnement autorisée du système d'E/S excom ne soit pas dépassée.
- ▶ Veillez à ne pas exposer le système d'E/S excom à la lumière directe du soleil.
- ▶ Avant l'assemblage du système d'E/S excom et toute modification de la configuration, procédez à un contrôle de température consigné par écrit. Pour l'assemblage, utilisez uniquement les modules d'E/S répertoriés dans le tableau 3.
- ▶ N'installez pas dans le boîtier de composants qui y généreraient une perte de puissance supplémentaire.

#### Réalisation du contrôle de température

Avant chaque modification de l'assemblage, y compris la première, l'opérateur doit certifier par écrit que la température de fonctionnement du système d'E/S excom n'a pas été dépassée à la température ambiante maximale possible. Un contrôle de température correctement effectué fait partie de la documentation relative aux installations que l'opérateur doit fournir.

- ▶ Déterminez la température ambiante maximale possible dans la zone de montage du système E/S excom et indiquez-la dans le tableau 3.
- ▶ Sélectionnez la plage de températures adéquate, indiquée sur la plaque signalétique du boîtier du système, dans la colonne T<sub>amb</sub> [°C] du tableau.
- ▶ Sélectionnez la valeur de la perte de puissance totale maximale admissible P<sub>admissible</sub> indiquée sur la plaque signalétique du boîtier du système, correspondant à la plage de température choisie.
- ▶ Indiquez la perte de puissance totale maximale admissible P<sub>admissible</sub> des modules dans le tableau 3.
- ▶ Pour chaque type de module : indiquez le nombre de modules prévus dans le tableau 3, colonne n<sub>module</sub>.
- ▶ Pour chaque type de module : multipliez la puissance P<sub>module</sub> par le nombre de n<sub>module</sub> et indiquez le résultat dans le tableau 3, colonne P<sub>total</sub>.
- ▶ Ajoutez les valeurs de la colonne P<sub>total</sub> et indiquez le total Σ (P<sub>total</sub>) dans le tableau 3.
- ▶ Si Σ (P<sub>total</sub>) ≤ P<sub>admissible</sub> : le contrôle de température est réussi, c'est-à-dire que la perte de puissance totale des modules est inférieure ou égale à la perte de puissance totale admissible. Les modules prévus peuvent être montés.
  - ▶ Inclure le contrôle de température dans la documentation des installations.
- ▶ Si Σ (P<sub>total</sub>) > P<sub>admissible</sub> : le contrôle de température a échoué, c'est-à-dire que la perte de puissance totale maximale des modules est supérieure à la perte de puissance totale admissible.
  - ▶ Réduire le nombre de modules.
  - ▶ Répéter le contrôle de température.

#### Exemple de contrôle de température (tableau 4)

Conditions préalables :

- Température ambiante dans la zone de montage du système d'E/S excom : 48 °C max.
  - P<sub>admissible</sub> ≤ 55 W pour T<sub>amb</sub> -20...+50 °C selon les indications sur la plaque signalétique du boîtier (voir tableau 2)
  - Le contrôle de température doit être effectué si P<sub>admissible</sub> ≤ 55 W.
  - Il faut monter 14 modules dans le boîtier du système
- Un contrôle de température réussi figure dans le tableau 4 : Les modules prévus présentent une perte de puissance totale maximale de 51,5 W. Le contrôle de température de P<sub>admissible</sub> (max. 55 W) est donc réussi.

## PT Guia de Início Rápido

EG-VA655526/\*\*\*\_\*\*\*\*/2GD70.\*\*\*\*\*

### Outros documentos

Além destes documentos, o seguinte material pode ser encontrado na internet, em [www.turck.com](http://www.turck.com):

- Folha de dados
- Instruções de uso para equipamentos excom
- manual excom
- Homologações
- Declarações de conformidade (versão atual)

### Para sua segurança

#### Finalidade de uso

O sistema de E/S excom é aprovado para uso em áreas de risco, zonas 1 e 21. O operador só pode instalar o equipamento listado na tabela 3 sem mais aprovações. Antes da colocação em funcionamento, o operador deve apresentar uma prova da temperatura. Os dispositivos devem ser usados apenas como descrito nessas instruções. Qualquer outro uso está fora de concordância com o uso pretendido. A Turck se exime de qualquer responsabilidade por danos resultantes.

#### Instruções gerais de segurança

- O sistema de E/S só pode ser montado, instalado, operado, parametrizado e mantido por pessoal treinado profissionalmente.
- O dispositivo atende aos requisitos de EMC para a área industrial. Havendo uso em áreas residenciais, tome medidas para evitar interferência de rádio.

#### Notas de proteção Ex

- Ao usar o dispositivo em circuitos Ex, o usuário deverá ter conhecimento prático sobre proteção contra explosões (IEC/EN 60079-14, etc).
- Observe os regulamentos nacionais e internacionais para proteção contra explosão.
- Use o dispositivo apenas em condições ambientais e de operação permitidas (consulte os dados de certificação e as especificações de Homologação Ex).
- Vedre as entradas de cabo não utilizadas com buijões de vedação
- Abra a estrutura somente por um curto período de tempo para executar tarefas de serviço e manutenção.
- Observe as instruções de uso do equipamento instalado.
- As aprovações do sistema de E/S relevantes para a área de aplicação (consulte a placa da etiqueta de tipo no alojamento) também devem estar disponíveis para os módulos de E/S utilizados.

### Descrição do produto

#### Visão geral do produto

Consulte a fig. 1: dimensões, fig. 6: vista frontal na posição de instalação

#### Funções e modos de operação

Os sistemas de E/S excom consistem em uma estrutura de aço inoxidável da categoria de proteção contra explosão Ex tb ou Ex e com um rack de módulo integrado. O rack do módulo pode ser equipado com vários módulos de E/S excom. Dependendo da versão, outros componentes de montante e controle necessários para a operação podem ser instalados pelo fabricante.

### Instalação

#### ⚠ PERIGO

Atmosferas potencialmente explosivas  
**Perigo de explosão devido a superfícies quentes!**

- ▶ Antes da colocação em funcionamento, certifique-se de que a temperatura máxima de funcionamento permitida do sistema de E/S excom não seja excedida.
- ▶ Não exponha o sistema de E/S excom à luz solar direta.
- ▶ Antes de equipar e de cada mudança de equipamento do sistema de E/S excom, deve ser fornecida uma prova por escrito da temperatura. Use somente os módulos de E/S indicados na tabela 3 para configuração.
- ▶ Não instale nenhum componente na estrutura que possa causar dissipação de calor adicional.

#### Como fornecer prova de temperatura

Antes da primeira mudança e em cada mudança do equipamento, o operador deve apresentar prova por escrito de que a temperatura de funcionamento do sistema de E/S excom não é excedida à temperatura ambiente máxima possível. A prova da temperatura por escrito é parte integrante da documentação da planta que deve ser fornecida pelo operador.

- ▶ Determine a temperatura ambiente máxima possível para o local em que o sistema de E/S excom, está instalado, e insira essas informações na Tabela 3.
- ▶ Selecione a faixa de temperatura relevante na coluna T<sub>amb</sub> [°C], utilizando a placa de identificação na estrutura do sistema.
- ▶ Usando a placa de identificação, selecione o valor para a dissipação de energia total máxima admissível (P<sub>admissible</sub>) que corresponde à faixa de temperatura selecionada.
- ▶ Digite a dissipação de energia total máxima admissível (P<sub>admissible</sub>) para os módulos na tabela 3.
- ▶ Para cada tipo de módulo: Digite o número de módulos que você pretende usar na coluna n<sub>module</sub> da tabela 3.
- ▶ Para cada tipo de módulo: Multiplique a energia (P<sub>module</sub>) pelo número de módulos (n<sub>module</sub>) e digite o resultado na coluna P<sub>total</sub> da tabela 3.
- ▶ Adicione os valores juntos na coluna P<sub>total</sub> e digite o total na linha Σ (P<sub>total</sub>) da tabela 3.
- ▶ Se Σ (P<sub>total</sub>) ≤ P<sub>admissible</sub>: A prova de temperatura foi concluída com sucesso, ou seja, a dissipação de energia total dos módulos é menor ou igual à dissipação de energia total admissível. Os módulos que você pretende usar podem ser instalados
  - ▶ Registre a prova de temperatura na documentação da planta.
- ▶ Se Σ (P<sub>total</sub>) > P<sub>admissible</sub>: A prova de temperatura não foi bem-sucedida, ou seja, a dissipação de energia total dos módulos excedeu a dissipação de energia total admissível.
  - ▶ Reduza o número de módulos.
  - ▶ Forneça novamente uma prova de temperatura.

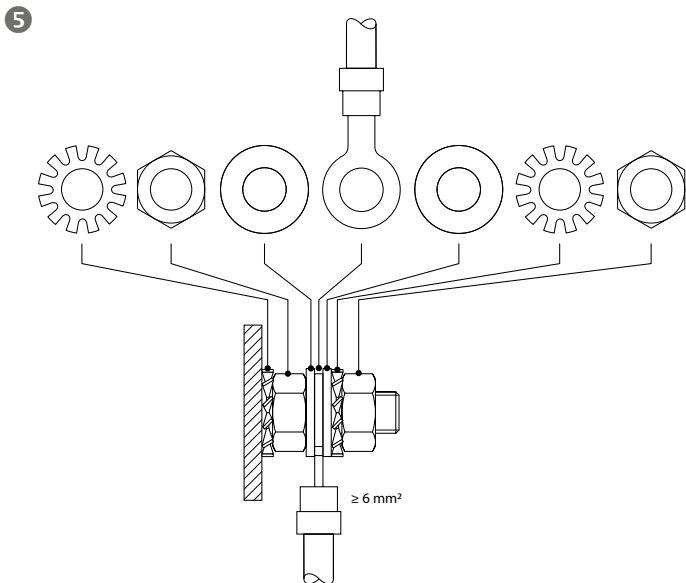
#### Exemplo de prova de temperatura (tabela 4)

Pré-requisitos:

- A temperatura ambiente máxima no local da instalação do sistema de E/S é de 48°C
- P<sub>admissible</sub> ≤ 55 W para T<sub>amb</sub> -20...+50 °C de acordo com a placa de identificação na estrutura (ver tabela 2).
- A prova de temperatura deve ser concluída para P<sub>admissible</sub> ≤ 55 W.
- 14 módulos devem ser instalados na estrutura do sistema.

Uma prova de temperatura executada com sucesso é descrita na tabela 4: Os módulos destinados para o uso alcançam uma dissipação de energia máxima total de 51,5 W. Isso significa que a prova de temperatura foi concluída com sucesso para P<sub>admissible</sub> (máx. 55 W).





## EU Declaration of conformity

## EU-Konformitätserklärung Nr. 5221-2M

EU Declaration of Conformity No.:

TURCK

Wir/We HANS TURCK GMBH & CO KG  
Witzlebenstr. 7, 45472 Mülheim an der Ruhr, Germany

erklären in alleiniger Verantwortung, dass die Produkte des  
declare under our sole responsibility that the products of

I/O Feldbussystem excom® / I/O fieldbussystem excom®

Baureihe / series:

EG-VA\*\*\*\*\*/\*\*\*\_\*\*\*\*/2GD\*\*.\*

Ex-Kennzeichnung (abhängig von den im Schrank eingebauten Komponenten):  
Ex-marking (depending on the components installed in the enclosure):

Gas / gas Ⓜ II 2 (1) G Ex e q d mb ib [ia Ga] [op is] IIC T4 Gb  
Staub / dust Ⓜ II 2 (1) D Ex tb [ia Da] [op is] IIC T135°C Db

Typen siehe Anlage / types see annex

auf die sich die Erklärung bezieht, den Anforderungen der folgenden EU-Richtlinien durch Einhaltung der  
to which this declaration relates are in conformity with the requirements of the following EU-directives by compliance with the following  
harmonised standards:

EMV-Richtlinie / EMC Directive	2014 / 30 / EU	26. Feb. 2014
EN 61326-1: 1*)	EN 61000-3-2: 1*)	EN 61000-6-3: 1*)
EN 61000-6-4: 1*)		EN 61000-6-2: 1*)

ATEX-Richtlinie / ATEX Directive	2014 / 34 / EU	26. Feb. 2014
EN 60079-0: 1*)	EN 60079-1: 1*)	EN 60079-5: 1*)
EN 60079-11: 1*)	EN 60079-18: 1*)	EN 60079-25: 1*)
EN 60079-28: 1*)	EN 60079-31: 1*)	EN 60079-26: 1*)

RoHS-Richtlinie/ RoHS Directive	2011 / 65 / EU	08. Jun. 2011

Weitere Normen, Bemerkungen  
additional standards, remarks

1\*) Angewandte Normen, sowie Jahreszahlen bitte den EU-Konformitätserklärungen der tatsächlich bestückten  
Betriebsmittel entnehmen.

1\*) Please find the applicable standards, as well as the annual figures in the EU declarations of conformity of the actual assembled devices  
and modules

Angewandtes ATEX-Konformitätsbewertungsverfahren / ATEX - conformity assessment procedure applied:  
Modul B + Modul E (enthalten in Modul D) / module B + module E (part of module D)

EU-Baumusterprüfbescheinigung gemäß Modul B / EU-type examination certificate according to module B:  
PTB 16 ATEX 2006

ausgestellt von / issued by: Physikalisch Technische Bundesanstalt, Kenn-Nr. / number 0102,  
Bundesallee 100, 38116 Braunschweig, Germany

Zertifizierung des QS-Systems gemäß Modul D durch:  
Certification of the QS-system in accordance with module D by:

Physikalisch Technische Bundesanstalt, Kenn-Nr. / number 0102,  
Bundesallee 100, 38116 Braunschweig, Germany

Mülheim, den 20.06.2018

i.V. U. Vix, CE-Koordinatorin / CE Coordinator

Ort und Datum der Ausstellung /  
Place and date of issue

Name, Funktion und Unterschrift des Befugten /  
Name, function and signature of authorized person

## FR Guide d'utilisation rapide

## Vérification de la sécurité intrinsèque

En raison du certificat de système PTB 16 ATEX 2006 ou IECEx PTB 16.0020, aucune preuve de sécurité intrinsèque distincte n'est requise pour l'équipement installé, câblé en usine (conformément à la norme CEI/EN 60079-14).

L'opérateur des installations doit fournir une preuve de sécurité intrinsèque pour les installations suivantes :

- Réaliser une preuve de sécurité intrinsèque pour la combinaison des modules indiqués dans le tableau 3 et des équipements à sécurité intrinsèque qui leur sont connectés sur le terrain.
- Réaliser une preuve de sécurité intrinsèque lorsque le signal de l'interface RS485-IS est acheminé vers d'autres supports de module (voir manuel, Informations sur l'homologation de système du RS485-IS Ex i-Layer).
- Pour les versions sans coupleur à fibre optique intégré : Réaliser une preuve de sécurité intrinsèque si l'interface RS485-IS du support de module est utilisée avec un signal RS485-IS provenant d'un coupleur de segments (p. ex. SC12EX) (voir manuel, Informations sur l'homologation de système du RS485-IS Ex i-Layer).
- Réaliser une preuve de sécurité intrinsèque pour tout autre câblage à sécurité intrinsèque entrant ou sortant de l'armoire électrique ou du boîtier.

## Montage du boîtier du système

## ⚠ DANGER

Atmosphère présentant un risque d'explosion  
Risque d'explosion en raison de surfaces chaudes !

- Montez le boîtier de manière à ce que les presse-étoupes se trouvent en bas et soient protégés contre les chocs.

## Fermeture du couvercle du boîtier

- Retirez tout corps étranger du boîtier, y compris la documentation.
- Fermez la porte du boîtier.

## Raccordement

- Acheminez les câbles dans le boîtier du système à travers les entrées de câbles.
- Insérez uniquement les câbles fixes dotés de passe-câbles à travers les presse-étoupe.
- Les entrées de câbles non utilisées sont à fermer avec des bouchons d'obturation.

## Raccordement de l'alimentation

## ⚠ DANGER

Haute tension  
Danger de mort par décharges électriques !

- Ne travaillez sur des bornes de raccordement que si elles sont mises hors tension.
- Attendez au minimum 5 minutes après la déconnexion de la tension d'alimentation.

## Certification data

## Approvals and markings

Approvals	Marking parts in acc. with	
	ATEX directive	Example for max. assembly
ATEX	Ⓜ II 2 (1) G	Ex e q d mb ib [ia Ga] [op is] IIC T4 Gb
Certificate number: PTB 16 ATEX 2006	Ⓜ II 2 (1) D	Ex tb [ia Da] [op is] IIC T135 °C Db
<b>CE</b>		
IECEx		
Certificate number: IECEx PTB 16.0020		

Permissible ambient temperature range T<sub>amb</sub>: see table 2

## PT Guia de Início Rápido

## Fornecer prova de segurança intrínseca

Devido ao certificado do sistema PTB 16 ATEX 2006 ou IECEx PTB 16.0020, nenhuma prova separada de segurança intrínseca é necessária para qualquer equipamento integrado conectado na fábrica (de acordo com a norma IEC/EN 60079-14).

O operador da fábrica deve garantir que a prova de segurança intrínseca esteja disponível para as seguintes instalações:

- Fornecer prova de segurança intrínseca para a combinação de módulos listados na tabela 3 e o equipamento intrinsecamente seguro conectado a esses módulos usados no campo.
- Fornecer prova de segurança intrínseca se o sinal da interface RS485-IS for transmitido através de racks de módulos adicionais (consulte o manual, "Instruções para aprovação do sistema da camada RS485-IS Ex i").
- No caso de variantes sem um acoplador de fibra óptica integrado: Fornecer prova de segurança intrínseca se a interface RS485-IS do rack do módulo for operada com um sinal RS485-IS de um acoplador de segmento, por exemplo, SC12EX (consulte o manual, "Instruções para aprovação do sistema da camada RS485-IS Ex i").
- Fornecer prova de segurança intrínseca para qualquer outro cabeamento intrinsecamente seguro que conduza de ou para o gabinete ou estrutura do interruptor.

## Instalação da estrutura do sistema

## ⚠ PERIGO

Atmosferas potencialmente explosivas  
Perigo de explosão devido a superfícies quentes!

- Instale a estrutura de modo que os prensa-cabos fiquem na parte inferior e estejam protegidos contra impactos.

## Fechando a tampa da estrutura

- Remova corpos estranhos, incluindo a documentação, da estrutura.
- Feche a porta da estrutura.

## Conexão

- Passe os cabos pelas entradas de cabo na estrutura do sistema.
- Passe somente cabos fixos e livres de tensão através do prensa-cabos.
- Vede as entradas de cabo não utilizadas com bujões de vedação

## Conexão da fonte de alimentação

## ⚠ PERIGO

Alta tensão  
Risco de morte devido a choque elétrico

- Somente trabalhe nos terminais de conexão quando eles estiverem desenergizados.
- Depois de desligar a tensão de alimentação, aguarde pelo menos 5 minutos.

- Se a tensão de alimentação for fornecida diretamente nos terminais do rack do módulo (MT08-2G, MT16-2G, MT16-2G/MSA ou MT-PPS): Observe as instruções de operação do rack do módulo.

- Se uma tensão de alimentação de 230 VCA ou 115 VCA estiver conectada por meio do conversor PPSA230Ex ou PPSA115Ex: Use um fusível de proteção de cabo de, no máximo, 5 A (tensão máxima relacionada à segurança do conversor: U<sub>m</sub> 250 V).

- Se uma tensão de alimentação de 24 VCC for conectada por meio da unidade de fonte de alimentação PSD24Ex: Use um fusível de proteção de cabo de no máximo 10 A (tensão máxima relacionada à segurança da unidade de fonte de alimentação: U<sub>m</sub> 60 V).

- Conecte a tensão de alimentação aos terminais da série de continuidade (abaixo da tampa IP30). As seções transversais máximas permitidas para cabos e os torques de aperto permitidos podem ser encontrados nas instruções de funcionamento dos terminais instalados.

## Conexão dos dispositivos de campo

- Conecte os cabos de acordo com o diagrama de fiação dos módulos de E/S. A seção transversal máxima permitida do cabo é de 1,5 mm<sup>2</sup> (rígido) e 1,5 mm<sup>2</sup> (flexível).

## Conexão da ligação equipotencial

- O gabinete do sistema excom faz parte do sistema de ligação equipotencial. Conecte a ligação equipotencial à parte externa da estrutura do sistema, usando uma seção transversal do condutor de pelo menos 6 mm<sup>2</sup>. O design do pino de conexão é mostrado na fig. 5.

## Comissionamento

- Conecte módulos fictícios às portas não utilizadas. Você pode, então, comissionar o sistema de E/S excom. Para obter mais informações sobre a colocação em funcionamento do sistema de E/S excom, consulte o manual.

## Operação

A estrutura pode ser aberta momentaneamente durante a operação em andamento para executar o trabalho de manutenção e ajuste. O trabalho pode ser realizado em circuitos de corrente de campo intrinsecamente seguros enquanto o sistema está energizado. Para obter mais informações sobre como operar o sistema de E/S excom, consulte o manual.

## Reparo

O dispositivo deverá ser desativado caso esteja com defeito. O dispositivo pode ser consertado somente pela Turck. Ao devolver o dispositivo para a Turck, consulte nossas políticas de devolução.

## Descarte

Os dispositivos devem ser descartados corretamente e não em um lixo doméstico normal.

**EU-Konformitätserklärung Nr. 5221-2M**  
EU Declaration of Conformity No.:



Anlage / Annex: Typenbezeichnung gemäß / Types in accordance with PTB 16 ATEX 2006

EG-VA \*\*\*\*\*/\*\*\*\_\*\*\*\*/2GD70.\*\*\*\*\*

Sondernummer für explosionsgeschützte Zusatzeinbauten, der Kategorie 2, wie Betäubungsschutz, spez. Bohrbild, von Gehäuseklasse abweichende Größe, etc.  
Special number for explosion protected additional equipment, of category 2, as moisture condensation protection, special drilling pattern, size deviating from enclosure class, etc.  
B\*\*\*\* Sonderbestückung bei fester Umgebungstemperatur / Special assembling with specified ambient temperature

Modulklassen / module classes: Bestückung mit / assembled with  
60 Modulen / modules  $\leq T_{amb} \text{ Modul} + 60^\circ\text{C}$   
70 Modulen / modules  $\leq T_{amb} \text{ Modul} + 70^\circ\text{C}$

Einbau von Segmentkopplern / installation of segment couplers:  
0 Kein Segmentkoppler / no segment coupler  
1 1 Segmentkoppler Typ / 1 segment coupler type: OC11Ex  
2 2 Segmentkoppler Typ / 2 segment couplers type: OC11Ex  
3 1 alternativer Segmentkoppler / 1 alternative segment coupler: (Details in BV...)  
4 2 alternative Segmentkoppler / 2 alternative segment couplers: (Details in BV...)

0 Ohne Vorschaltbaugruppe Typ / Without series assembly type MT-PPS  
1 Mit Vorschaltbaugruppe Typ / With series assembly type MT-PPS  
2 Einbau von 1 Netzteil / Installation of 1 power supply unit 230/115V AC  
3 Einbau von 2 Netzteilen / Installation of 2 power supply units 230/115V AC

01 Modulträger / Module rack MT08-2G  
02 Modulträger / Module rack MT16-2G  
10 Modulträger / Module rack MT16-2G/MSA

0 Blindplatte (Bohrungen durch Anwender nach Betriebsanleitung) / Blind plate (drilling by user acc. to operating instructions manual)  
1 Flanschplatte M16 Bohrungen, max. Bestückung / Flange plate M16 drill holes, max. assembling  
2 Flanschplatte M20 Bohrungen, max. Bestückung / Flange plate M20 drill holes, max. assembling  
3 Sonderausführung, z.B. Bohrbild (erfasst in BV.. Nummer) / Special variant, e.g. drilling pattern (included in BV.. number)  
4 Flanschplatte M16 Standardbestückung / Flange plate M16 drill holes, standard assembling  
5 Flanschplatte M20 Standardbestückung / Flange plate M20 drill holes, standard assembling

0 ohne Sichtfenster / without inspection window  
1 mit Sichtfenster / with inspection window

0 Gehäusematerial Edelstahl / Enclosure material stainless steel: 1.4301  
1 Gehäusematerial Edelstahl / Enclosure material stainless steel: 1.4404  
2 andere Legierungen mit ident. Wärmewiderstand / other alloys with identical thermal resistance

Gehäuseklassen / Enclosure classes:

TT Gehäusetiefe in cm / Enclosure depth in cm: (Standard: 26)

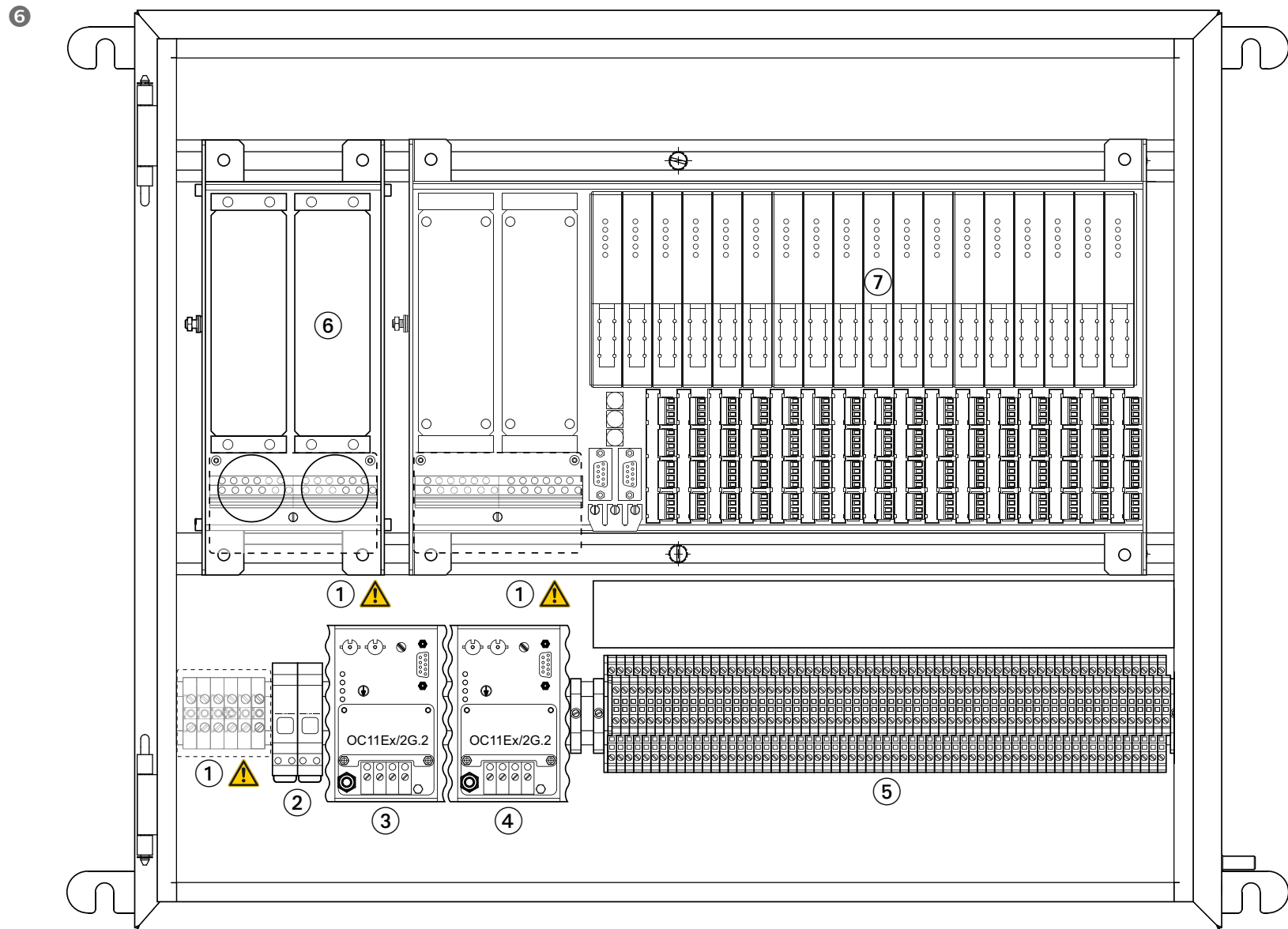
(H)HH Gehäusehöhe in cm / Enclosure height in cm: (Standard: 55)

(B)BB(H)HHTT (B)BB Gehäusebreite in cm / Enclosure width in cm: (Standard: 46, 65, 80)

FM 7.3-26

07.07.16

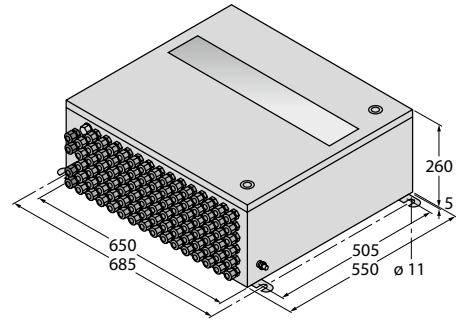
Front view – in installation position



- |       |  |   |
|-------|--|---|
| ① ⚠   | Raccordement de la tension d'alimentation sous le couvercle de bornes IP30, position variable selon la version de l'appareil | A conexão para a tensão de alimentação está abaixo da tampa do terminal IP30; a posição pode variar dependendo do projeto |
| ② - ⑥ | En option  | Opcional  |
| ⑦     | Logements pour passerelles et modules d'E/S  | Slots para gateway e módulos de E/S.  |



1



2

**Example: type label**

T <sub>amb</sub> [°C]	P <sub>admissible</sub> [W]
-20...+40	≤ 58
-20...+45	≤ 58
-20...+50	≤ 55
-20...+55	≤ 39
-20...+60	≤ 22
-20...+65	≤ 6

3

**P<sub>total</sub> (T<sub>amb</sub> ≤ ... °C)**

Module type	P <sub>module</sub> [W]	n <sub>module</sub>	P <sub>total</sub> = P <sub>module</sub> [W] × n <sub>module</sub>
AI401EX	2.2		
AI43EX	1.5		
AIH401Ex	3.0		
AO401EX	2.5		
AOH401Ex	3.0		
DF20EX	1.0		
DM80EX	1.0		
DO401EX	4.5		
DI401EX	2.0		
TI401EX	1.0		
TI41EX	1.0		
Σ (Π <sub>total</sub> )			... W
P <sub>admissible</sub>			... W

4

**Example: P<sub>total</sub> (T<sub>amb</sub> ≤ 48 °C)**

Module type	P <sub>module</sub> [W]	n <sub>module</sub>	P <sub>total</sub> = P <sub>module</sub> [W] × n <sub>module</sub>
AI401EX	2.2		
AI43EX	1.5		
AIH401Ex	3.0		
AO401EX	2.5	1	2.5
AOH401Ex	3.0		
DF20EX	1.0	1	1.0
DM80EX	1.0		
DO401EX	4.5	10	45.0
DI401EX	2.0	1	2.0
TI401EX	1.0		
TI41EX	1.0	1	1.0
Σ (Π <sub>total</sub> )			51.5 W
P <sub>admissible</sub>			55.0 W

ZH 快速入门指南

EG-VA655526/\*\*\*\_\*\*\*\*\*/2GD70.\*\*\*\*\*

其他文档

除了本文档之外,还可在www.turck.com网站上查看以下资料:

- 数据表
- excom设备使用说明
- excom手册
- 认证
- 合规声明(最新版本)

安全须知

预期用途

excom I/O系统获准用于危险1区和21区。在没有进一步批准的情况下,操作员只能安装表3中列出的设备。在调试之前,操作员必须提供温度证明。必须严格按照这些说明使用该装置。任何其他用途都不属于预期用途。图尔克公司不会对非预期用途导致的任何损坏承担责任。

一般安全须知

- excom I/O系统的组装、安装、操作、参数设定和维护只能由经过专业培训的人员执行。
- 该装置符合工业领域的EMC要求。在住宅区使用时,请采取措施以防止无线电干扰。

防爆说明

- 将设备应用到防爆电路时,用户必须具有防爆工作知识(IEC/EN 60079-14等)。
- 请遵守国内和国际防爆法规。
- 仅在允许的工作条件和环境条件中使用本装置(参见认证数据和防爆认证规格)。
- 用密封塞密封未使用的线缆入口
- 只能在短时间内打开外壳以执行保养和维护任务。
- 遵循已安装设备的使用说明。
- 与应用区域相关的I/O系统认证(请参见外壳上的类型铭牌),也必须适用于所用的I/O模块。

产品描述

装置概览

参见图1“尺寸”和图6“安装位置前视图”

产品功能和工作模式

excom I/O系统包含具有内置模块架的不锈钢外壳(防爆类别为Ex tb或Ex e)。该模块架可配备各种excom I/O模块。制造商可能会安装操作所需的其他上游组件和控制组件,具体取决于型号。

安装

⚠ 危险

有爆炸危险的环境高温表面会导致爆炸危险!

- ▶ 调试前,确保未超过excom I/O系统允许的最高工作温度。
- ▶ 请勿将excom I/O系统直接暴露在阳光下。
- ▶ 在配备和每次更换excom I/O系统设备之前,必须提供书面温度证明。
- ▶ 仅使用表3中所示的I/O模块进行配置。
- ▶ 请勿在外壳中安装任何会导致额外散热的组件。

提供温度证明

在首次和每次更换设备之前,操作员必须以书面形式证明在可能的最高环境温度下未超过excom I/O系统的工作温度。温度的书面证明是操作员必须提供的工厂文档的组成部分。

- ▶ 确定excom I/O系统安装位置的潜在最高环境温度,并在表3中输入此信息。
- ▶ 根据系统外壳上的铭牌,在T<sub>amb</sub> [°C]列中选择相关温度范围。
- ▶ 根据铭牌选择与所选温度范围对应的最大容许总功耗(P<sub>admissible</sub>)的值。
- ▶ 在表3中输入该模块的最大容许总功耗(P<sub>admissible</sub>)。
- ▶ 对于每种模块类型:在表3的n<sub>module</sub>列中输入要使用的模块数。
- ▶ 对于每种模块类型:将功率(P<sub>module</sub>)乘以模块数(n<sub>module</sub>),然后在表3的P<sub>total</sub>列中输入结果。
- ▶ 将P<sub>total</sub>列中的值相加,然后在表3的Σ(P<sub>total</sub>)行中输入总数。
- ▶ 如果Σ(P<sub>total</sub>) ≤ P<sub>admissible</sub>:表明温度证明已成功完成,即模块的总功耗小于或等于容许的总功耗。您要使用的模块可能已安装
  - ▶ 在工厂文档中记录温度证明。
- ▶ 如果Σ(P<sub>total</sub>) > P<sub>admissible</sub>:表明温度证明未成功,即模块的总功耗超过容许的总功耗。
  - ▶ 减少模块数量。
  - ▶ 再次提供温度证明。

温度证明示例(表4)

前提条件:

- excom I/O系统安装位置的最高环境温度为48 °C。
- 根据外壳上铭牌的规定,当T<sub>amb</sub>为-20...+50 °C时,P<sub>admissible</sub>应≤ 55(见表2)。
- 必须完成P<sub>admissible</sub> ≤ 55 W的温度证明。
- 系统外壳中需安装14个模块。

表4中列出了成功完成的温度证明:要使用的模块最大总功耗为51.5 W。这意味着已成功完成P<sub>admissible</sub>(最高55 W)的温度证明。

提供本安证明

由于系统证书是PTB 16 ATEX 2006或IE-CEX PTB 16.0020,所以工厂中用导线连接在一起的任何内置设备都无需提供单独的本安证明(根据IEC/EN 60079-14)。

工厂操作员必须确保为以下装置提供本安证明:

- 为表3中列出的模块组合以及与现场使用的这些模块相连的本安设备提供本安证明。
- 如果来自RS485-IS接口的信号被循环传送至其他模块架,则需提供本安证明(请参阅“RS485-IS Ex i层系统认证说明”手册)。
- 对于没有内置光纤耦合器的机型:如果模块架的RS485-IS接口使用来自分段耦合器(例如,SC12EX)的RS485-IS工作信号,则需提供本安证明(请参阅“RS485-IS Ex i层系统认证说明”手册)。
- 为引出或引入开关柜或外壳的任何其他本安接线提供本安证明。

KO 빠른 시작 가이드

EG-VA655526/\*\*\*\_\*\*\*\*\*/2GD70.\*\*\*\*\*

추가 문서

이 문서 외에도 다음과 같은 자료를 인터넷(www.turck.com)에서 확인할 수 있습니다.

- 데이터 시트
- excom 장비 사용 지침
- excom 매뉴얼
- 인증
- 적합성 선언(현재 버전)

사용자 안전 정보

사용 목적

excom I/O 시스템은 위험 지역, 1종 및 21종 위험 지역에서 사용하도록 승인되었습니다. 작업자는 표 3에 나열된 장비만 추가 승인 없이 설치할 수 있습니다. 시운전을 시작하기 전 작업자는 온도 증명을 제공해야 합니다.

이 장치는 이 지침에서 설명한 목적으로만 사용해야 합니다. 기타 다른 방식으로 사용하는 것은 사용 목적을 따르지 않는 것입니다. 터크는 그로 인한 손상에 대해 어떠한 책임도 지지 않습니다.

일반 안전 지침

- 전문적인 훈련을 받은 숙련된 기술자만이 excom I/O 시스템의 조립, 설치, 작동, 매개 변수 설정 및 유지보수를 수행해야 합니다.
- 이 장치는 산업 분야의 EMC 요구 사항을 충족합니다. 주거 지역에서 사용하는 경우 무선 간섭을 방지하기 위한 조치를 취하십시오.

폭발 방지 참고 사항

- 폭발 방지 회로에서 이 장치를 사용할 경우 사용자는 폭발 방지(IEC/EN 60079-14 등)에 대한 실제 지식이 있어야 합니다.
- 폭발 방지에 관한 국내 및 국제 규정을 준수하십시오.
- 허용되는 작동 및 주변 조건에서만 장치를 사용하십시오(인증 데이터 및 방폭 인증 사양 참조).
- 사용하지 않는 케이블 도입부는 실링 플러그로 밀봉하십시오.
- 하우징은 서비스 및 유지보수 작업의 경우에만 짧은 시간 동안 열도록 합니다.
- 설치된 장비의 사용 지침을 준수하십시오.
- 애플리케이션 영역(하우징에 부착된 라벨 플레이트 참조)과 관련된 I/O 시스템 승인은 사용된 I/O 모듈에서도 사용할 수 있어야 합니다.

제품 설명

장치 개요

그림 1: 치수, 그림 6: 설치 위치의 전면을 참조하십시오.

기능 및 작동 모드

excom I/O 시스템은 폭발 방지 카테고리 Ex tb 또는 Ex e의 통합 모듈 랙 포함 스테인리스 스틸 하우징으로 구성되어 있습니다. 모듈 랙에는 다양한 excom I/O 모듈을 장착할 수 있습니다. 버전에 따라 작동에 필요한 다른 업스트림 및 제어 구성 요소를 제조업체에서 설치할 수 있습니다.

설치

⚠ 위험

폭발 위험이 있는 환경

뜨거운 표면으로 인한 폭발 위험!

- ▶ 시운전을 시작하기 전 excom I/O 시스템의 최대 허용 작동 온도가 초과되지 않는지 확인하십시오.
- ▶ excom I/O 시스템을 직사광선에 노출시키지 마십시오.
- ▶ excom I/O 시스템을 장착하거나 장비를 변경할 때마다 반드시 온도 증명 문서를 제공해야 합니다. 구성 시 표 3에 표시된 I/O 모듈만 사용하십시오.
- ▶ 추가적인 열 발산을 일으킬 가능성이 있는 구성 요소를 하우징에 장착하지 마십시오.

온도 증명 제공

첫 교체를 비롯해 장비를 교체할 때마다 작업자는 excom I/O 시스템 작동 온도가 최대 가능 주변 온도를 초과하지 않음을 서면으로 증명해야 합니다. 온도의 서면 증거는 작업자가 제공해야 하는 공장 서류의 필수적인 부분입니다.

▶ excom I/O 시스템이 설치될 위치에서 최대 가능 주변 온도를 확인하고 표 3에 이 정보를 입력합니다.

▶ 시스템 하우징 명판의 T<sub>amb</sub> [°C] 열에서 관련 온도 범위를 선택합니다.

▶ 명판을 사용하여 선택한 온도 범위에 해당하는 허용 가능한 최대 총 전력 손실(P<sub>admissible</sub>)의 값을 선택합니다.

▶ 해당 모듈에 대해 허용 가능한 최대 총 전력 손실(P<sub>admissible</sub>)을 표 3에 입력합니다.

▶ 각 모듈 타입에 대해: 표 3의 n<sub>module</sub> 열에 사용할 모듈의 수를 입력합니다.

▶ 각 모듈 타입에 대해: 전력(P<sub>module</sub>)과 모듈 수(n<sub>module</sub>)를 곱한 다음 표 3의 P<sub>total</sub> 열에 값을 입력합니다.

▶ P<sub>total</sub> 열의 값을 더하고 표 3의 Σ(P<sub>total</sub>) 행에 합계를 입력합니다.

▶ 만약 Σ(P<sub>total</sub>) ≤ P<sub>admissible</sub>이면: 온도 증명이 성공적으로 완료되었습니다. 즉, 모듈의 총 전력 손실이 허용 가능한 총 전력 손실 이하입니다. 사용하려는 모듈을 설치할 수 있습니다.

▶ 공장 서류에 온도 증거를 기록합니다.

▶ 만약 Σ(P<sub>total</sub>) > P<sub>admissible</sub>이면: 온도 증명에 실패했습니다. 즉, 모듈의 총 전력 손실이 허용 가능한 총 전력 손실을 초과합니다.

▶ 모듈 수를 줄여야 합니다.

▶ 온도 증명을 다시 제공하십시오.

온도 증명 예시(표 4)

사전 요구 사항:

- excom I/O 시스템 설치 위치의 최대 주변 온도는 48 °C입니다.
- 하우징 명판에 따라 T<sub>amb</sub> -20...+50 °C의 경우 P<sub>admissible</sub> ≤ 55 W입니다(표 2 참조).
- P<sub>admissible</sub> ≤ 55 W의 경우 온도 증명을 완료해야 합니다.
- 시스템 하우징에 14개의 모듈을 설치해야 합니다. 성공적으로 수행된 온도 증명은 표 4에 설명되어 있습니다. 사용하려는 모듈의 최대 총 전력 손실이 51.5 W에 도달합니다. 즉, P<sub>admissible</sub>(최대 55 W)에 대한 온도 증명이 성공적으로 완료된 것을 의미합니다.

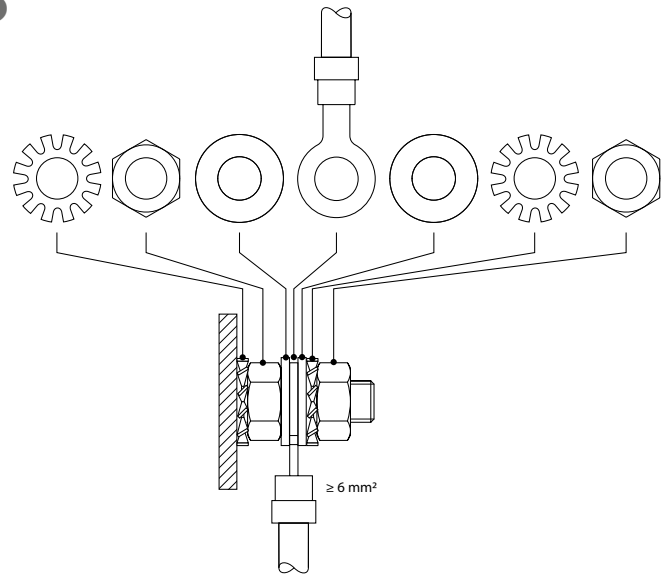
본질 안전 증명 제공

PTB 16 ATEX 2006 또는 IECEx PTB 16.0020 시스템 인증에 따라, 출하시 와이어로 연결된 내장된 장비에 대해 별도의 본질 안전 증명이 필요하지 않습니다(IEC/EN 60079-14 규격).

공장 작업자는 다음 설비에 대한 본질 안전 증명을 제공할 수 있도록 구비해야 합니다.

- 현장에서 사용되는 모듈과 연결된 본질 안전 장비 및 표 3에 나열된 모듈의 조합에 대한 본질 안전 증명을 제공하십시오.
- RS485-IS 인터페이스의 신호가 추가 모듈 랙에 루프 스루되어 있는 경우 본질 안전 증명을 제공하십시오 („RS485-IS Ex i-layer의 시스템 승인 지침“ 참조).
- 내장된 광화이버 커플러가 없는 종류의 경우: 모듈 랙의 RS485-IS 인터페이스가 세그먼트 커플러의 RS485-IS 신호로 작동하는 경우(예: SC12EX) 본질 안전 증명을 제공하십시오(RS485-IS Ex i-layer의 시스템 승인 지침“ 참조).
- 스위치 캐비닛 또는 하우징에 연결되는 본질 안전 배선에 대해 본질 안전 증명을 제출하십시오.

5



EU Declaration of conformity

EU-Konformitätserklärung Nr. 5221-2M



EU Declaration of Conformity No.:

Wir/We HANS TURCK GMBH & CO KG  
Witzlebenstr. 7, 45472 Mülheim an der Ruhr, Germany

erklären in alleiniger Verantwortung, dass die Produkte des  
declare under our sole responsibility that the products of

I/O Feldbussystem excom® / I/O fieldbussystem excom®

Baureihe / series:

EG-VA\*\*\*\*\*/\*\*\*\_\*\*\*\* / 2GD\*\*.\*\*\*\*\*

Ex-Kennzeichnung (abhängig von den im Schrank eingebauten Komponenten):  
Ex-marking (depending on the components installed in the enclosure):

Gas / gas II 2 (1) G Ex e q d mb ib [ia Ga] [op is] IIC T4 Gb  
Staub / dust II 2 (1) D Ex tb [ia Da] [op is] IIIC T135°C Db

Typen siehe Anlage / types see annex

auf die sich die Erklärung bezieht, den Anforderungen der folgenden EU-Richtlinien durch Einhaltung der  
to which this declaration relates are in conformity with the requirements of the following EU-directives by compliance with the following harmonised standards:

EMV-Richtlinie / EMC Directive	2014 / 30 / EU	26. Feb. 2014
EN 61326-1: 1*)	EN 61000-3-2: 1*)	EN 61000-6-3: 1*)
EN 61000-6-4: 1*)		EN 61000-6-2: 1*)

ATEX-Richtlinie / ATEX Directive	2014 / 34 / EU	26. Feb. 2014
EN 60079-0: 1*)	EN 60079-1: 1*)	EN 60079-5: 1*)
EN 60079-11: 1*)	EN 60079-18: 1*)	EN 60079-25: 1*)
EN 60079-28: 1*)	EN 60079-31: 1*)	EN 60079-26: 1*)

RoHS-Richtlinie/ RoHS Directive	2011 / 65 / EU	08. Jun. 2011
---------------------------------	----------------	---------------

Weitere Normen, Bemerkungen  
additional standards, remarks

1\*) Angewandte Normen, sowie Jahreszahlen bitte den EU-Konformitätserklärungen der tatsächlich bestückten Betriebsmittel entnehmen.

1\*) Please find the applicable standards, as well as the annual figures in the EU declarations of conformity of the actual assembled devices and modules

Angewandtes ATEX-Konformitätsbewertungsverfahren / ATEX - conformity assessment procedure applied:

Modul B + Modul E (enthalten in Modul D) / module B + module E (part of module D)

EU-Baumusterprüfbescheinigung gemäß Modul B / EU-type examination certificate according to module B:  
PTB 16 ATEX 2006

ausgestellt von / issued by: Physikalisch Technische Bundesanstalt, Kenn-Nr. / number 0102,  
Bundesallee 100, 38116 Braunschweig, Germany

Zertifizierung des QS-Systems gemäß Modul D durch:  
Certification of the QS-system in accordance with module D by:

Physikalisch Technische Bundesanstalt, Kenn-Nr. / number 0102,  
Bundesallee 100, 38116 Braunschweig, Germany

Mülheim, den 20.06.2018

i.V. U. Vix, CE-Koordinatorin / CE Coordinator

Ort und Datum der Ausstellung /  
Place and date of issue

Name, Funktion und Unterschrift des Befugten /  
Name, function and signature of authorized person

ZH 快速入门指南

安装系统外壳

- ⚠ 危险  
有爆炸危险的环境  
高温表面会导致爆炸危险!  
▶ 安装外壳,使线缆密封套位于底部并免受冲击。

关闭外壳盖

- ▶ 取下壳体上的异物,包括文档。
- ▶ 关闭外壳门。

连接

- ▶ 将线缆穿过系统外壳中的线缆入口。
- ▶ 只能通过线缆密封套布设固定式应力消除线缆。
- ▶ 用密封塞密封未使用的线缆入口。

连接电源

- ⚠ 危险  
高压  
电击会造成生命危险  
▶ 只允许在断电状态下处理连接端子。
- ▶ 关闭电源电压后,请至少等待5分钟。

- ▶ 如果电源电压直接由模块架 (MT08-2G、MT16-2G、MT16-2G/MSA或MT-PPS) 的端子提供:请仔细阅读模块架说明书。
- ▶ 如果通过PPSA230Ex-或PPSA115Ex转换器连接230 VAC或115 VAC电源电压:使用最大容量为5 A的线缆保护保险丝(转换器最大安全电压:U<sub>m</sub> 250 V)。
- ▶ 如果通过PSD24Ex供电单元连接24 VDC电源电压:使用最大容量为10 A的线缆保护保险丝(供电单元最大安全电压:U<sub>m</sub> 60 V)。
- ▶ 将电源电压连接至连续串接端子 (IP30盖板下方)。已装端子的说明书中提供了允许的最大线缆横截面和拧紧扭矩。

连接现场设备

- ▶ 按照I/O模块的接线图连接线缆。允许的最大导线横截面为1.5 mm<sup>2</sup> (硬导线)和1.5 mm<sup>2</sup> (软导线)。

连接等电位联结点

- ▶ excom系统外壳是等电位联结系统的一部分。使用横截面至少6 mm<sup>2</sup>的导线将等电位联结点连接至系统外壳外侧。连接销的设计如图5所示。

调试

- ▶ 将空壳模块连接至未使用的端口  
然后便可以调试excom I/O系统了。有关调试excom I/O系统的更多信息,请参阅手册。

运行

- 在运行过程中,可短暂打开外壳以进行维护和调整工作。在系统通电时,可对本安现场电流回路执行作业。有关操作excom I/O系统的更多信息,请参阅手册。

维修

- 如果出现故障,必须停用该装置。该装置只能由图尔克公司进行维修。如果向图尔克公司返修,请遵循我们的返修政策。

废弃处理

- ⌚ 必须正确地弃置该装置,不得混入普通生活垃圾中丢弃。

KO 빠른 시작 가이드

시스템 하우징 설치

- ⚠ 위험  
폭발 위험이 있는 환경  
뜨거운 표면으로 인한 폭발 위험!  
▶ 충격으로부터 보호되도록 케이블 글랜드가 하단에 오도록 설치합니다.

하우징 커버 닫기

- ▶ 하우징에서 설명서를 비롯한 이물질을 제거합니다.
- ▶ 하우징 도어를 닫습니다.

연결

- ▶ 시스템 하우징의 케이블 도입부를 통해 케이블을 배선합니다.
- ▶ 고정되고 압력을 받지 않는 케이블만 케이블 클랜드를 통해 배선해야 합니다.
- ▶ 사용하지 않는 케이블 도입부는 실링 플러그로 밀봉하십시오.

파워 서플라이 연결

- ⚠ 위험  
고전압  
전기 충격으로 인해 생명이 위험할 수 있습니다.  
▶ 연결 터미널에서는 무전압 상태일 때만 작업하십시오.
- ▶ 공급 전압을 끈 후 5분 이상 기다리십시오.

- ▶ 모듈 랙(MT08-2G, MT16-2G, MT16-2G/MSA 또는 MT-PPS) 터미널에 공급 전압이 직접 제공되는 경우: 모듈 랙의 작동 지침을 참고하십시오.
- ▶ 230 VAC 또는 115 VAC의 공급 전압이 PPSA230Ex 또는 PPSA115Ex 컨버터를 통해 연결된 경우: 최대 5 A의 케이블 보호 퓨즈를 사용하십시오(컨버터의 안전 관련 최대 전압: U<sub>m</sub> 250 V).
- ▶ 24 VDC의 공급 전압이 PSD24Ex 파워 서플라이 유닛을 통해 연결된 경우: 최대 10 A의 케이블 보호 퓨즈를 사용하십시오(파워 서플라이 유닛의 안전 관련 최대 전압: U<sub>m</sub> 60 V).
- ▶ 공급 전압을 연속 시리즈 터미널(IP30 커버 아래)에 연결합니다. 최대 허용 케이블 단면 및 허용 조임 토크는 설치된 터미널의 작동 지침에서 확인할 수 있습니다.

필드 장치 연결

- ▶ I/O 모듈의 배선도에 따라 케이블을 연결합니다. 최대 허용 가능한 도체 단면은 강성의 경우 1.5 mm<sup>2</sup> 연성의 경우 1.5 mm<sup>2</sup>입니다.

등전위 본딩 연결

- ▶ excom 시스템 외함은 등전위 본딩 시스템의 일부입니다. 단면이 6 mm<sup>2</sup> 이상인 도체를 사용하여 등전위 본딩을 시스템 하우징 외부에 연결합니다. 연결 핀의 설계는 그림 5를 참조하십시오.

시운전

- ▶ 더미 모듈을 사용하지 않는 포트에 연결합니다. 그런 다음 excom I/O 시스템의 시운전을 수행할 수 있습니다. excom I/O 시스템 시운전에 대한 자세한 내용은 매뉴얼을 참조하십시오.

작동

- 유지보수 및 조정 작업을 수행하기 위해 작동 중에 하우징이 일시적으로 열릴 수 있습니다. 시스템에 전원이 공급되는 동안 본질 안전 필드 전류 회로에 작업이 수행될 수 있습니다. excom I/O 시스템 작동에 대한 자세한 내용은 매뉴얼을 참조하십시오.

수리

- 이 장치에 고장이 발생한 경우 설치 해제해야 합니다. 이 장치는 터크에서만 수리할 수 있습니다. 장치를 터크로 반품할 경우 당사의 반품 정책을 참조하십시오.

폐기

- ⌚ 이 장치는 올바른 방법으로 폐기해야 하며 일반적 인 가정 폐기물과 함께 배출해서는 안 됩니다.

Certification data

Approvals and markings

Approvals	Marking parts in acc. with	
	ATEX directive	Example for max. assembly
ATEX Certificate number: PTB 16 ATEX 2006	⊕ II 2 (1) G ⊕ II 2 (1) D	Ex e q d mb ib [ia Ga] [op is] IIC T4 Gb Ex tb [ia Da] [op is] IIIC T135 °C Db
IECEx Certificate number: IECEx PTB 16.0020		

Permissible ambient temperature range T<sub>amb</sub>: see table 2



EU-Konformitätserklärung Nr. 5221-2M  
EU Declaration of Conformity No.:



Anlage / Annex: Typenbezeichnung gemäß / Types in accordance with PTB 16 ATEX 2006

EG-VA \*\*\*\*\*/\*\*\*/2GD70.\*\*\*\*\*

Sondernummer für explosionsgeschützte Zusatzeinbauten, der Kategorie 2, wie Betattungsschutz, spez. Bohrbild, von Gehäuseklasse abweichende Größe, etc.  
Special number for explosion protected additional equipment, of category 2, as moisture condensation protection, special drilling pattern, size deviating from enclosure class, etc.  
B\*\*\*\* Sonderbestückung bei fester Umgebungstemperatur / Special assembling with specified ambient temperature

Modulklassen / module classes: Bestückung mit / assembled with  
60 Modulen / modules  $\leq T_{amb} Modul + 60^{\circ}C$   
70 Modulen / modules  $\leq T_{amb} Modul + 70^{\circ}C$

Einbau von Segmentkopplern / installation of segment couplers:

- 0 Kein Segmentkoppler / no segment coupler
- 1 1 Segmentkoppler Typ / 1 segment coupler type: OC11Ex
- 2 2 Segmentkoppler Typ / 2 segment couplers type: OC11Ex
- 3 1 alternativer Segmentkoppler / 1 alternative segment coupler: (Details in BV...)
- 4 2 alternative Segmentkoppler / 2 alternative segment couplers: (Details in BV...)

- 0 Ohne Vorschaltbaugruppe Typ / Without series assembly type MT-PPS
- 1 Mit Vorschaltbaugruppe Typ / With series assembly type MT-PPS
- 2 Einbau von 1 Netzteil / Installation of 1 power supply unit 230/115V AC
- 3 Einbau von 2 Netzteilen / Installation of 2 power supply units 230/115V AC

- 01 Modulträger / Module rack MT08-2G
- 02 Modulträger / Module rack MT16-2G
- 10 Modulträger / Module rack MT16-2G/MSA

- 0 Blindplatte (Bohrungen durch Anwender nach Betriebsanleitung) / Blind plate (drilling by user acc. to operating instructions manual)
- 1 Flanschplatte M16 Bohrungen, max. Bestückung / Flange plate M16 drill holes, max. assembling
- 2 Flanschplatte M20 Bohrungen, max. Bestückung / Flange plate M20 drill holes, max. assembling
- 3 Sonderausführung, z.B. Bohrbild (erfasst in BV.. Nummer) / Special variant, e.g. drilling pattern (included in BV.. number)
- 4 Flanschplatte M16 Standardbestückung / Flange plate M16 drill holes, standard assembling
- 5 Flanschplatte M20 Standardbestückung / Flange plate M20 drill holes, standard assembling

- 0 ohne Sichtfenster / without inspection window
- 1 mit Sichtfenster / with inspection window

- 0 Gehäusematerial Edelstahl / Enclosure material stainless steel: 1.4301
- 1 Gehäusematerial Edelstahl / Enclosure material stainless steel: 1.4404
- 2 andere Legierungen mit ident. Wärmewiderstand / other alloys with identical thermal resistance

Gehäuseklassen / Enclosure classes:

TT Gehäusetiefe in cm / Enclosure depth in cm: (Standard: 26)

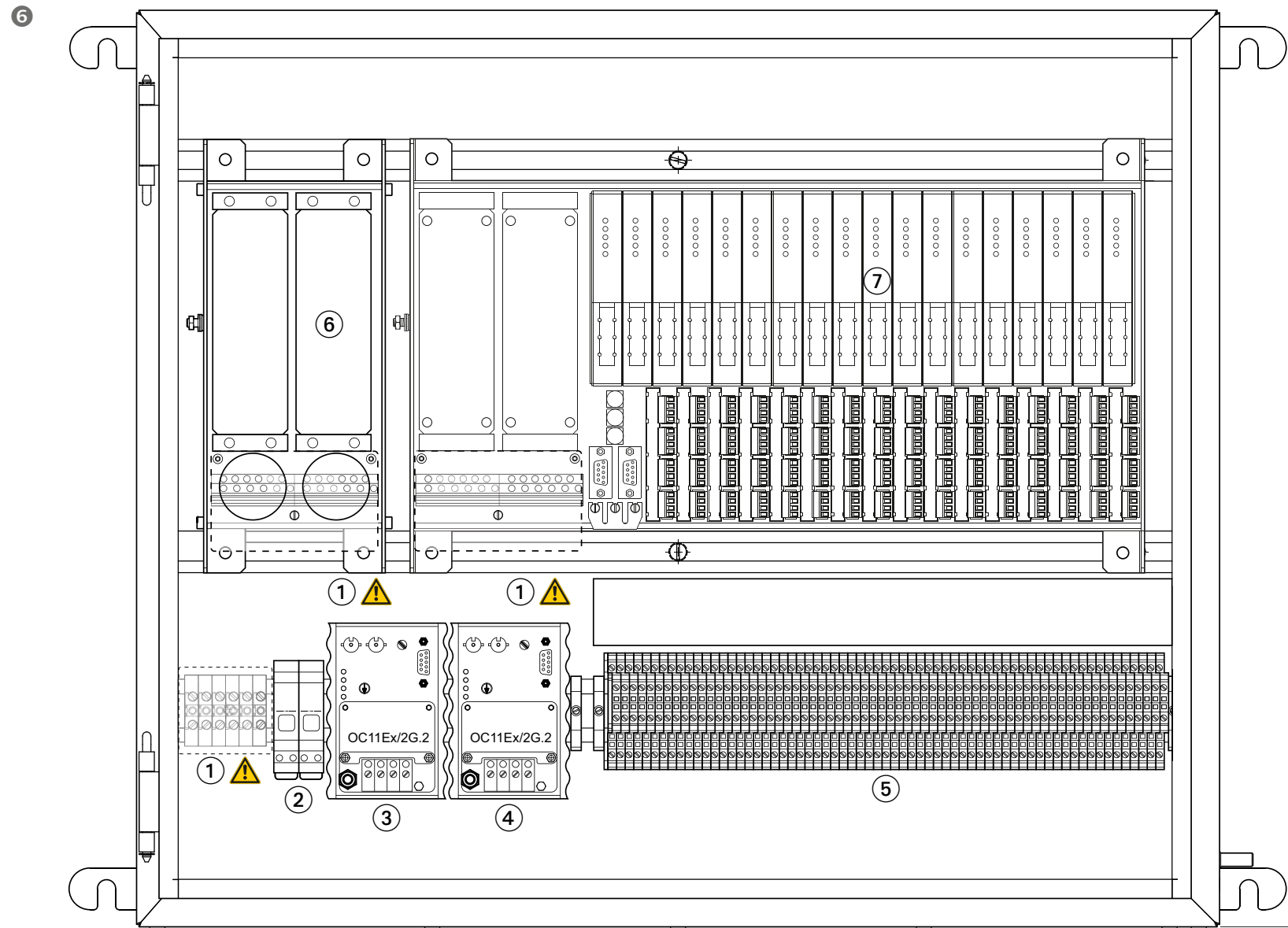
(H)HH Gehäuserhöhe in cm / Enclosure height in cm: (Standard: 55)

(B)BB(H)HHTT (B)BB Gehäuserbreite in cm / Enclosure width in cm: (Standard: 46, 65, 80)

FM 7.3-26

07.07.16

Front view – in installation position



① ⚠️ 电源电压连接点位于IP30端子护套下方, 位置可能因设计而异      공급 전압 연결부는 IP30 터미널 커버 아래에 있으며, 위치는 설계에 따라 달라질 수 있습니다.

② - ⑥ 可选      옵션

⑦ 网关和I/O模块的插槽      게이트웨이 및 I/O 모듈용 슬롯