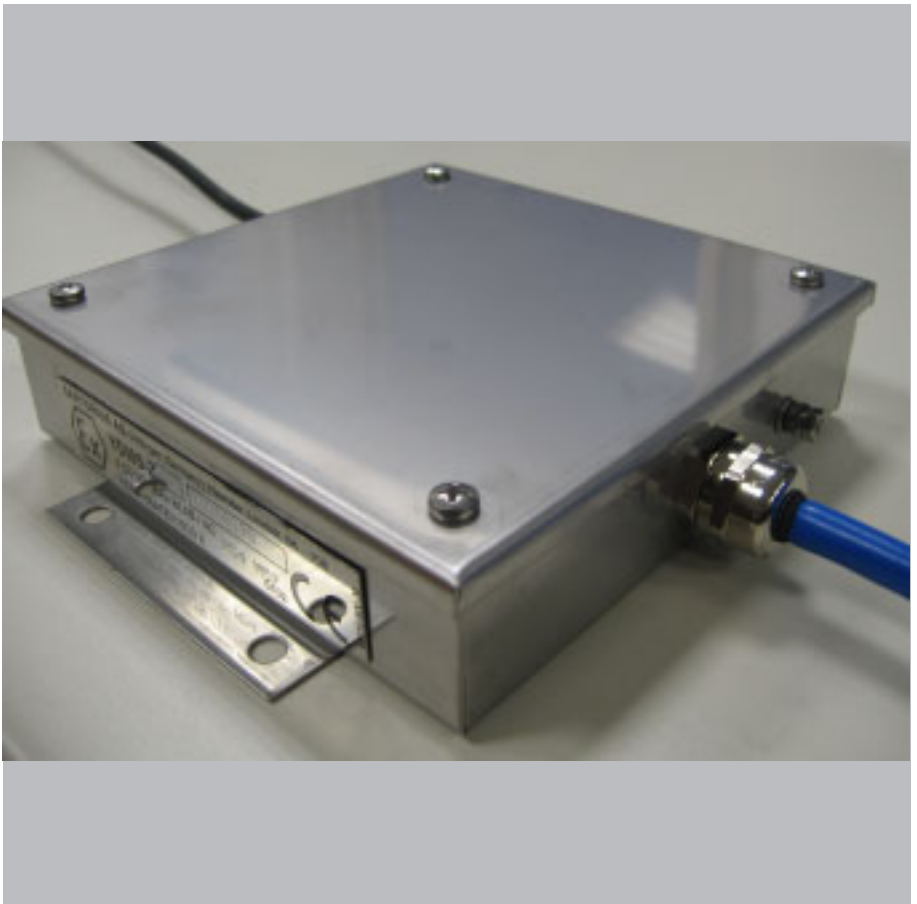


Operating Instructions

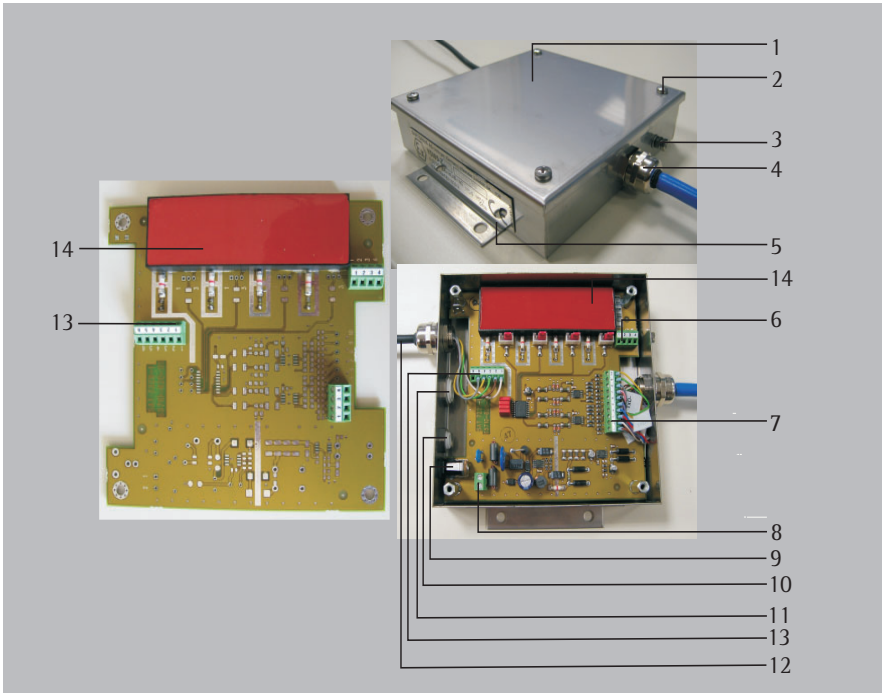
Sartorius

Model YDI05-Z

Interface Converter



General View of the YDI05-Z



- 1 Cover
- 2 Fastening screws (4 pcs)
- 3 Equipotential bonding terminal (ground/earth)
- 4 Connecting cable for intrinsically safe balances in the hazardous areas (20 m, RS-232, or up to 1000 m: RS-422 or RS-485).
- 5 Mounting rail
- 6 Terminal strip (LV2), intrinsically safe, for RS-232 or RS-485
- 7 Terminal strip (LV3), intrinsically safe (RS-422)
- 8 Terminal strip (LV4), for external power source (DC 12-30V)
- 9 Socket for DC power supply
- 10 Protective cap

- 11 Protective cap or RS-232 female connector
- 12 Connection for printer or computer (RS-232).
- 13 Terminal strip (LV1), non-intrinsically safe, for RS-232
- 14 Zener barriers (encapsulated)

Symbols

The following symbols are used in these instructions:

- indicates required steps
- indicates steps required only under certain conditions
- > describes what happens after you have performed a particular step
- indicates an item in a list
- ⚠ indicates a hazard

Contents

- 2 General View of the Equipment
- 3 Intended Use
- 4 Warnings and Safety Precautions
- 5 Getting Started
- 6 Operation
- 9 Care and Maintenance
- 10 Recycling
- 11 Specifications
- 12 Documents

Intended Use

The YD105-Z interface converter is made for installation in the non-hazardous area. It bears the following ATEX marking: ATEX II (2) GD [Ex ib]IIB/IIC. The YD105-Z converts intrinsically safe RS-232 or RS-422 data signals to non-intrinsically safe RS-232 data signals in the non-hazardous area. It can also be used as a Zener barrier in an RS-485 network for connecting peripheral devices, such as a printer or computer, in the non-hazardous area.

Warnings and Safety

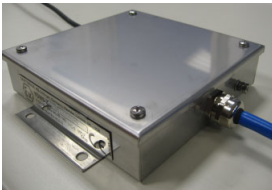
Precautions

The YDI05-Z interface converter meets the guidelines and standards that apply to electromagnetic compatibility and electrical safety for electrical apparatus used in hazardous areas. Improper use or handling, however, can result in damage and/or injury. To prevent damage to the equipment, please read the safety instructions carefully (see „Documents“ at the end of this manual) before putting the interface converter into operation. Keep these instructions in a safe place.

- Do not expose the interface converter unnecessarily to extreme temperatures, moisture, shocks, or vibration.
- Do not use electrical equipment out of doors.
- The interface converter may not be used in hazardous areas.
- Disconnect the interface converter from power before connecting or disconnecting cables or peripheral devices to or from the data interfaces on the interface converter.
- If you use cables purchased from another manufacturer, check the pin assignments in the cable against those specified by Sartorius before connecting the cable to Sartorius equipment, and disconnect any wires that are assigned differently. The operator shall be solely responsible for any damage or injuries that occur when using cables not supplied by Sartorius.
- The power connection must be made in accordance with the regulations applicable in your country. If you need assistance, contact your Sartorius dealer or the Sartorius Service Center. Any installation work that does not conform to the instructions in this manual will result in forfeiture of all claims under the manufacturer's warranty.
- If there is any indication that safe operation of the interface converter is no longer warranted; for example, if the power supply is visibly damaged or obviously defective, disconnect the equipment from power and lock it in a safe place to ensure that it cannot be used. Make sure the applicable accident prevention regulations are observed by all operating personnel.
- Make sure no voltage is present in the interface converter before performing any maintenance, cleaning or repair work. If the equipment housing is opened by anyone other than persons authorized by Sartorius, all claims under the manufacturer's warranty are forfeited.
- The interface converter is protected against penetration of solid foreign objects (IP40).
- The casing on all connecting cables, as well as the casing on wires inside the equipment housing, is made of PVC. Chemicals that corrode this material must be kept away from these cables.

Getting Started

- Remove the interface converter from the packaging.
- Check the interface converter immediately for any visible damage that may have been incurred as a result of rough handling during shipment.



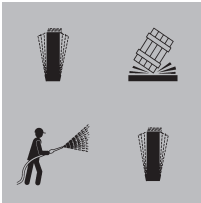
Equipment Supplied

- Interface converter
- Power supply
- Connecting cable (only with Option A25)

Setting up the Interface Converter

Choose a suitable location where your interface converter will not be exposed to drafts, heat radiation, moisture or vibrations.

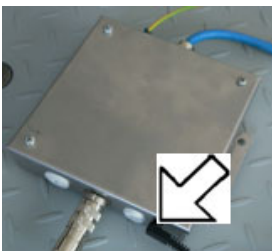
Make sure to read these operating instructions carefully before connecting the interface converter to power.



- △ Make sure to observe the safety instructions.

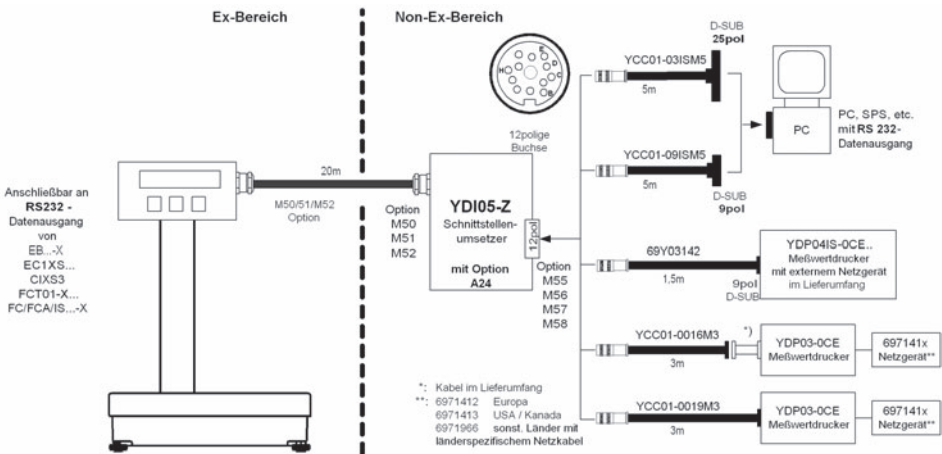
Connecting the Interface Converter to AC Power

- Connect the angle plug to the power jack (9).
- Plug the power supply into the wall outlet (mains supply).
- △ Make sure to observe the safety instructions.
Make sure that the voltage rating printed on this unit is identical to your local line voltage. If the voltage specified on the label or the plug design of the power supply do not match the rating or standard you use, please contact your Sartorius office or dealer.
Use only genuine Sartorius equipment. Use of AC adapters or power supplies from other manufacturers, even if these units have a registered approval rating from a national testing laboratory, requires the consent of an authorized Sartorius service technician. Sartorius technicians are familiar with the relevant regulations.



Operation

YDI05-Z in the Standard Version for Connecting RS-232 <-> RS-232 Devices with 20 m Cable Length



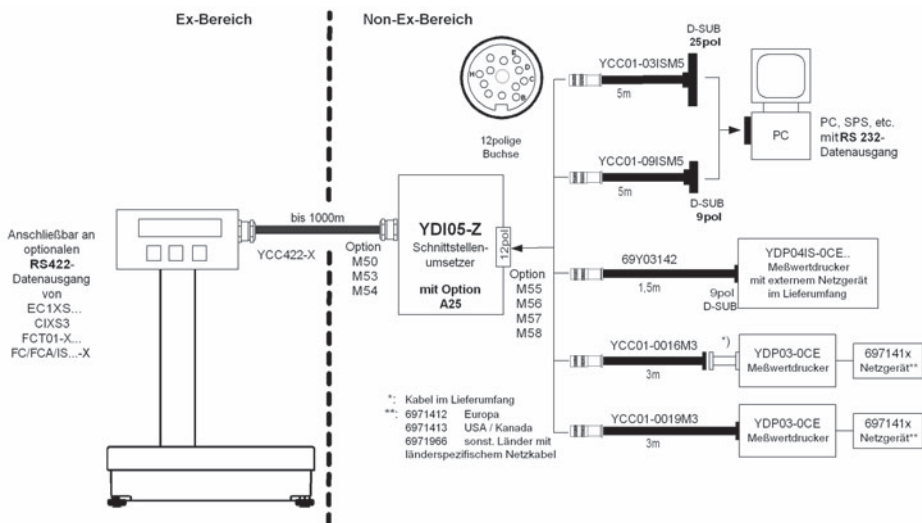
Options:

- A24: RS-232 input on the weighing instrument for the YDI05-Z
- M50 Cable gland on the YDI05-Z for a custom connection to the RS-485 output (network interface) on CIXS3, FCT01-X, FC-X, FCA-X or IS-X equipment
- M51 Non-detachable cable installed on the RS-232 interface of the YDI05-Z with 14-pin male connector on the other end
- M52 For direct connection to FCT01-X, FC-X, FCA-X, IS-X or EB-X series equipment, or for connection to ECX1S or CIXS3 equipment using an adapter cable
- M55 12-contact female connector (round plug)
- M56 Non-detachable cable on RS-232 output port of the YDI05-Z, with a 9-contact female connector for connection to a YDP03-OCE printer or a computer
- M57 Non-detachable cable installed on the RS-232 output port of the YDI05-Z, with a 9-pin male connector for connecting the YDP04IS-OCE printer
- M58 Non-detachable cable installed on the RS-232 interface of the YDI05-Z, with 25-pin female connector for connecting a computer

Accessories:

- YAS04CIS Cable gland, M16 x 1.5 (for cable rather than 12-contact female connector)
- YCC422-X Cable, LiY 6x (2x0, 14mm² C)Y
- 69QC0010 12-pin male connector
- 69Y03166 14-poliger male connector

YDI05-Z with Option A25 for Connecting RS-422 <-> RS-232 Equipment over Distances of up to 1000 m



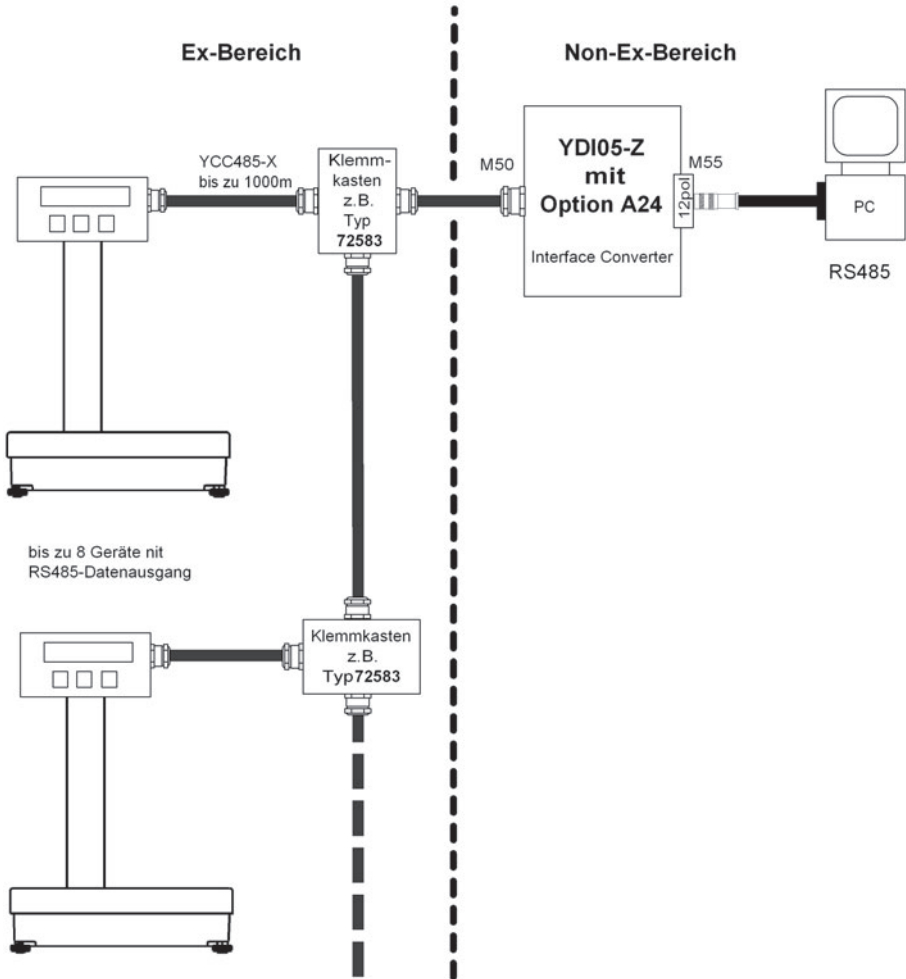
Options:

- A25 RS-422 input on YDI05-Z for scale
- M50 Cable gland on the YDI05-Z for a custom connection to the RS-422 network interface on CIXS3, FCT01-X, FC-X, FCA-X or IS-X equipment
- M53 Non-detachable cable of user-specified length installed on the RS-422 interface of the YDI05-Z converter, with no connector installed on the other end, for connection to the RS-422 interface on ECX1S or CIXS3 equipment
- M54 Non-detachable cable of user-specified length installed on the RS-422 interface of the YDI05-Z, with 14-pin round male connector, for direct connection to the RS-422 interface on FC-X, FCA-X, FCT01-X or IS-X series equipment, or for connection to ECX1S or CIXS3 devices using an adapter cable
- M55 Non-detachable cable on RS-232 output port of the YDI05-Z, with a 9-contact female connector for connection to a YDP03-OCE printer or a computer
- M56 Non-detachable cable installed on the RS-232 output port of the YDI05-Z, with a 9-pin male connector for connecting the YDP04IS-OCE printer
- M57 Non-detachable cable installed on the RS-232 interface of the YDI05-Z, with 25-pin female connector for connecting a computer

Accessories:

- YAS04CIS Cable gland, M16 x 1.5 (for cable rather than 12-contact female connector)
- YCC422-X Cable, LiY 6x (2x0, 14mm² C)Y
- 69QC0010 12-pin male connector
- 69Y03166 14-pin male connector

**YDI05-Z with option A24 for connecting RS-485 <-> RS-485
over distances of up to 1000 m**



Care and Maintenance

Cleaning

- ⚠ Never use concentrated acids, alkali solutions or pure alcohol to clean the equipment.
- Do not allow liquids to penetrate the equipment housing.
- Use a brush or a soft, dry, lint-free cloth to clean the interface converter.

Storage and Shipping Conditions

- The packaging used for shipping your Sartorius equipment is optimally designed to prevent damage during transport. It is a good idea to save the box and all parts of the packaging for future storage or shipment of the equipment. Only the original packaging provides the best protection for shipment.
- Allowable storage temperature: – 20°C to + 75°C (– 4°F to + 167°F)
- Allowable humidity during storage: up to 90%
- Please refer to the information under „Safety Inspection“.

Safety Inspection

Any of the following conditions may indicate that safe operation of the equipment is no longer warranted:

- If there is visible damage to the connecting cable
 - If the device no longer functions properly
 - If the equipment has been stored for a relatively long period under unfavorable conditions
 - If the equipment has been subjected to rough handling during shipment
 - If any of these is the case, make sure all warnings and safety precautions are observed, and notify your nearest Sartorius Service Center or the International Technical Support Unit based in Goettingen, Germany. Maintenance and repair work may be performed only by authorized Sartorius service technicians who have access to the required maintenance manuals and have received the necessary training.
- ⚠ The seals affixed to this equipment indicate that only authorized service technicians are allowed to open the equipment and perform maintenance work so that safe and trouble-free operation of the equipment is ensured and the warranty remains in effect.

Recycling

Information and Instructions on Disposal and Repairs

Packaging that is no longer required must be disposed of at the local waste disposal facility. The packaging is made of environmentally friendly materials that can be used as secondary raw materials. The equipment, including accessories and batteries, does not belong in your regular household waste. The European legislation requires that electrical and electronic equipment be collected and disposed of separately from other communal waste with the aim of recycling it. In Germany and many other countries, Sartorius AG takes care of the return and legally compliant disposal of its electrical and electronic equipment on its own.

These products may not be placed with the household waste or brought to collection centers run by local public disposal operations – not even by small commercial operators.

For disposal in Germany and in the other member nations of the European Economic Area (EEA), please contact our Service technicians on location or our Service Center in Goettingen, Germany:

Sartorius AG
Service Center
Weender Landstrasse 94-108
37075 Goettingen, Germany

In countries that are not members of the European Economic Area (EEA) or where no Sartorius subsidiaries or dealerships are located, please contact your local authorities or a commercial disposal operator.

Prior to disposal and/or scrapping of the equipment, any batteries should be removed and disposed of in local collection boxes.

Sartorius AG will not take back equipment contaminated with hazardous materials (ABC contamination) – either for repair or disposal.

Please refer to the accompanying leaflet/manual or visit our Internet website (www.sartorius.com) for comprehensive information that includes our service addresses to contact if you plan to send your equipment in for repairs or proper disposal.

If you no longer need the packaging after successful installation of the equipment, you should return it for recycling.

The packaging is made from environmentally friendly materials and is a valuable source of secondary raw material.

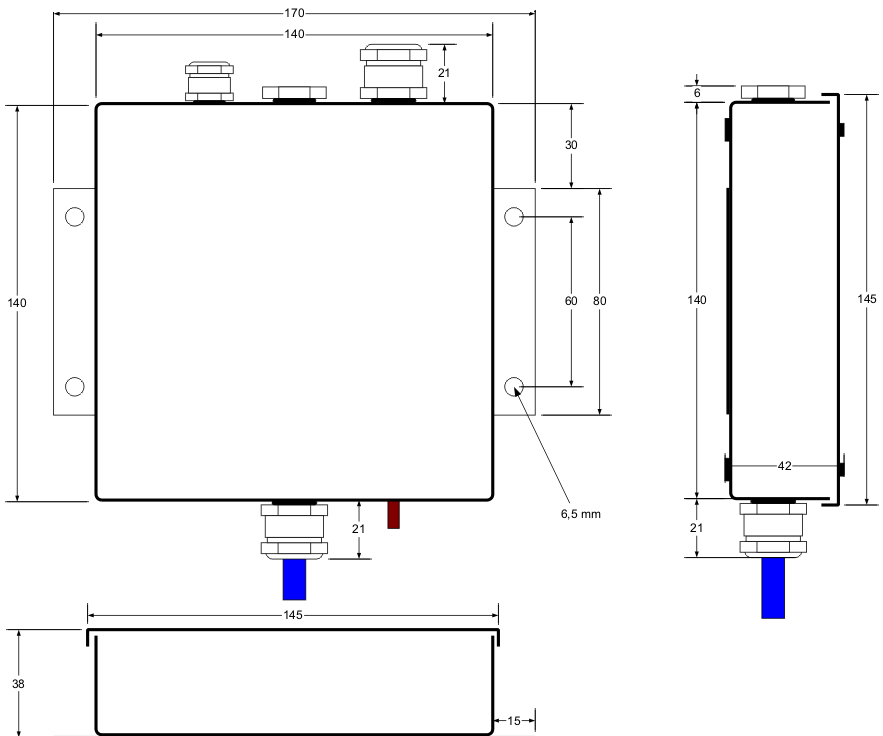


The equipment, including accessories and batteries, does not belong in your regular household waste.

Specifications

Model	YDI05-Z	
Humidity class	F	Non-condensing
Permissible ambient temperature during operation	°C	-20 to +50 (- 13°F to + 122°F)
Power consumption	VA	Typical: 8

Dimensions



Documents



(1) EC-TYPE EXAMINATION CERTIFICATE

- (2) Equipment or protective system intended for use in potentially explosive atmospheres - Directive 94/9/EC
- (3) EC-Type Examination Certificate Number: **KEMA 05ATEX1023 X**
- (4) Equipment or protective system: **Interface Converter type YDI05-Z...**
- (5) Manufacturer: **Sartorius AG**
- (6) Address: **Weender Landstraße 94-108, 37075 Göttingen, Germany**
- (7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.
- The examination and test results are recorded in confidential report no. 2077605-1.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014 : 1997 + A1, A2

EN 50020 : 2002

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment or protective system according to the Directive 94/9/EC. 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 the following:



II (2) GD [EEx Ib] IIB/IIC

Arnhem, 7 February 2005
KEMA Quality B.V.

C.G. van Es
Certification Manager

* This Certificate may only be reproduced in its entirety and without any change

KEMA Quality B.V.
Utrechtseweg 310, 6812 AR Arnhem, The Netherlands
P.O. Box 5185, 6802 ED Arnhem, The Netherlands
Telephone +31 26 3 56 20 08, Telefax +31 26 3 52 58 00

ACCREDITED BY THE
DUTCH COUNCIL FOR
ACCREDITATION



Page 1/3

(13) **SCHEDULE**
 (14) **to EC-Type Examination Certificate KEMA 05ATEX1023 X**

(15) **Description**

The Interface Converter type YDI05-Z... serves for transmission of RS232 data signals or conversion of RS422 or RS485 data signals into RS232 data signals.

The Interface Converter is fitted in a stainless steel enclosure and is located outside the hazardous area.

The intrinsically safe circuits may extend into the applicable hazardous areas.

Ambient temperature range -20 °C ... +50 °C.

Electrical data

Supply 12 ... 30 Vdc nominal, $U_m = 254$ V
 (connector LV4 or BU1)

RS232 circuit +/- 12 V nominal, 20 mA; $U_m = 254$ V
 (terminals LV1)

RS232-Data circuit in type of protection intrinsic safety EEx ib IIC or EEx ib IIB,
 (terminals LV2) with the following maximum values (circuits combined):

U_o	= 12,4 V	(between line and earth/screen)
U_o	= 24,8 V	(between the lines)
I_o	= 260 mA	(linear)
P_o	= 0,8 W	

	IIC		IIB	
	Between line and earth or screen	Between lines	Between line and earth or screen	Between lines
C_o	1,24 μ F	112 nF	7,90 μ F	850 nF
L_o	0,4 mH	0,4 mH	2 mH	2 mH
L_o/R_o	44 μ H/Ohm	22 μ H/Ohm	177 μ H/Ohm	88 μ H/Ohm

and only for connection to a certified intrinsically safe circuit, with the following maximum values (circuits combined):

U_i	= 12,6 V	(between line and earth/screen)
U_i	= 25,2 V	(between the lines)
I_i	= any	
P_i	= any	
C_i	= 0	
L_i	= 0	

RS422-Data circuit or
 RS485-Data circuit in type of protection intrinsic safety EEx ib IIC or EEx ib IIB,
 (terminals LV3) with the following maximum values (circuits combined):

U_o	= 6,0 V	(between line and earth/screen)
U_o	= 6,8 V	(between the lines)
I_o	= 172 mA	(linear)
P_o	= 500 mW	

	IIC		IIB	
	Between line and earth or screen	Between lines	Between line and earth or screen	Between lines
C_o	12 μ F	17,7 μ F	972 μ F	380 μ F
L_o	0,7 mH	0,7 mH	5 mH	5 mH

SCHEDULE

(13)

(14)

to EC-Type Examination Certificate KEMA 05ATEX1023 X

and only for connection to a certified intrinsically safe circuit, with the following maximum values (circuits combined):

U_i	=	12,6	V	(between line and earth/screen)
U_l	=	25,2	V	(between the lines)
I_i	=	0,2	A	
P_i	=	2,3	W	
C_i	=	28	μ F	(between line and earth/screen)
C_l	=	0,2	μ F	(between the lines)
L_l	=	2	μ H	

Installation instructions

The intrinsically safe circuits may extend into explosive atmospheres caused by air/dust mixtures. For atmospheres caused by air/dust mixtures in which category 1 equipment is required this is allowed under the condition that the circuits are mechanically protected and the intrinsically safe circuits to which the interface is connected are protected by an enclosure suitable for category 1.

LV2 may not be connected simultaneously with LV3, LV4 and BU1.

The intrinsically safe Data circuits may also be connected to the applicable circuits of the following certified equipment:

FCT01-X	(KEMA 00ATEX1012 X)
FCT01-XV1	(KEMA 00ATEX1012 X)
FC.....-X....	(KEMA 01ATEX1099 X)
FCA.....-X....	(KEMA 01ATEX1099 X)
FCB.....-X....	(KEMA 01ATEX1099 X)
IS.....-X....	(KEMA 01ATEX1099 X)
CIXS3	(KEMA 03ATEX1157 X)
CW.XS3.....-.....	(KEMA 03ATEX1157 X)

For these combinations the parameters for capacitance, inductance or inductance/resistance ratio need to be taken into account only.

(16) **Report**

KEMA No. 2077605-1.

(17) **Special conditions for safe use**

For ambient temperature range and electrical data, see (15).

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 2077605-1.

Übersetzung

(Maßgeblich ist die englischsprachige Originalfassung)



(1) **EG-BAUMUSTERPRÜFBESCHEINIGUNG**

- (2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - Richtlinie 94/9/EG
- (3) EG-Baumusterprüfbescheinigung Nummer: **KEMA 05ATEX1023 X**
- (4) Gerät oder Schutzsystem: **Schnittstellenumsetzer Typ YDI05-Z...**
- (5) Hersteller: **Sartorius AG**
- (6) Anschrift: **Weender Landstraße 94-108, 37075 Göttingen, Deutschland**
- (7) Die Bauart dieses Gerätes oder Schutzsystems sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser EG-Baumusterprüfbescheinigung und in den zugehörigen Unterlagen festgelegt.
- (8) KEMA Quality B.V. bescheinigt als benannte Stelle Nr. 0344 nach Artikel 9 der Richtlinie 94/9/EG des Rates der Europäischen Gemeinschaften vom 23. März 1994 die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.
- Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht Nr. 2077605-1 festgelegt.
- (9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:
- EN 50014 : 1997 + A1, A2 EN 50020 : 2002**
- (10) Falls das Zeichen "X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes oder Schutzsystems in der Anlage zu dieser Bescheinigung hingewiesen.
- (11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konstruktion, Überprüfung und Tests des spezifizierten Gerätes oder Schutzsystems in Übereinstimmung mit Richtlinie 94/9/EG. Weitere Anforderungen der Richtlinie gelten für das Herstellungsverfahren und die Lieferung dieses Gerätes oder Schutzsystems. Diese sind von vorliegender Bescheinigung nicht abgedeckt.
- (12) Die Kennzeichnung des Gerätes oder Schutzsystems muss die folgenden Angaben enthalten:



II (2) GD [EEEx ib] IIB/IIc

Arnheim, den 7. Februar 2005
KEMA Quality B.V.

C.G. van Es
Certification Manager

(13)

ANLAGE

(14)

zur EG-Baumusterprüfbescheinigung KEMA 05ATEX1023 X

(15) Beschreibung

Der Schnittstellenumschalter Typ YDI05-Z... dient der Übertragung von RS232-Datensignalen oder zur Umwandlung von RS422- oder RS485-Signalen in RS232-Signale.

Der Schnittstellenumschalter ist mit einem Edelstahlgehäuse ausgestattet und wird außerhalb des explosionsgefährdeten Bereichs aufgestellt.

Die eigensicheren Stromkreise dürfen bis in die geeigneten explosionsgefährdeten Bereiche reichen.

Zulässiger Umgebungstemperaturbereich: -20°C + 50°C

Elektrische Daten

Versorgung..... 12 ... 30 Vdc nominal, $U_m = 254$ V
(Stecker LV4 oder BU1)

Stromkreis (RS232)..... +/- 12 V nominal, 20 mA; $U_m = 254$ V
(Klemmleiste LV1)

Datenstromkreis (RS232)..... in der Zündschutzart Eigensicherheit EEx ib IIC oder EEx ib IIB,
(Klemmleisten LV2) mit folgenden Höchstwerten (kombinierte Stromkreise):

$U_o = 12,4$ V (zwischen Leitung und Erde/
Schirm)
 $U_o = 24,8$ V (zwischen den Leitungen)
 $I_o = 260$ mA (linear)
 $P_o = 0,8$ W

	IIC		IIB	
	Zwischen Leitung und Erde oder Schirm	zwischen den Leitungen	Zwischen Leitung und Erde oder Schirm	zwischen den Leitungen
C_o	1,24 μ F	112 nF	7,90 μ F	850 nF
L_o	0,4 mH	0,4 mH	2 mH	2 mH
L_o / R_o	44 μ H/Ohm	22 μ H/Ohm	177 μ H/Ohm	88 μ H/Ohm

und nur für die Verbindung mit einem zertifizierten eigensicheren Stromkreis mit folgenden Höchstwerten (kombinierte Stromkreise):

$U_i = 12,6$ V (kombinierte Stromkreise/
Schirm)
 $U_i = 25,2$ V (zwischen den Leitungen)
 $I_i =$ beliebig
 $P_i =$ beliebig
 $C_i = 0$
 $L_i = 0$

Datenstromkreis (RS422)
oder

Datenstromkreis (RS485).....
(Klemmleiste LV3)

in der Zündschutzart Eigensicherheit EEx ib IIC oder EEx ib IIB,
mit folgenden Höchstwerten (kombinierte Stromkreise):

$U_o = 6,0$ V (zwischen Leitung und Masse/
Schirm)
 $U_o = 6,8$ V (zwischen den Leitungen)
 $I_o = 172$ mA (linear)
 $P_o = 500$ mW

	IIC		IIB	
	Zwischen Leitung und Erde oder Schirm	zwischen den Leitungen	Zwischen Leitung und Erde oder Schirm	zwischen den Leitungen
C_o	12 μ F	17,7 μ F	972 μ F	380 μ F
L_o	0,7 mH	0,7 mH	5 mH	5 mH

(13)

ANLAGE

(14)

zur EG-Baumusterprüfbescheinigung KEMA 05ATEX1023 X

und nur für die Verbindung mit einem zertifizierten eigensicheren Stromkreis mit folgenden Höchstwerten (kombinierte Stromkreise):

$U_i = 12,6$	V	(zwischen Leitung und Erde/ Schirm)
$U_l = 25,2$	V	(zwischen den Leitungen)
$I_i = 0,2$	A	
$P_i = 2,3$	W	
$C_i = 28$	μF	(zwischen Leitung und Erde/ Schirm)
$C_l = 0,2$	μF	(zwischen den Leitungen)
$L_l = 2$	μH	

Installationshinweise

Die eigensicheren Stromkreise dürfen bis in die explosionsgefährdeten Bereiche mit Luft/Staub-Gemischen reichen. Bei Atmosphären aus Luft/Staub-Gemischen, in denen Geräte der Kategorie 1 erforderlich sind, ist dieses unter der Bedingung zulässig, dass die Stromkreise mechanisch geschützt und die angeschlossenen eigensicheren Stromkreise durch ein für die Gerätekategorie 1 geeignetes Gehäuse geschützt sind.

LV2 darf nicht gleichzeitig an LV3, LV4 und BU1 angeschlossen werden.

Die eigensicheren Datenstromkreise dürfen an die geeigneten Versorgungsstromkreise folgender zertifizierter Geräte angeschlossen werden:

FCT01-X	zugelassen gemäß KEMA 00ATEX1012 X
FCT01-XV1	zugelassen gemäß KEMA 00ATEX1012 X
FC.....-X.....	zugelassen gemäß KEMA 01ATEX1099 X
FCA.....-X.....	zugelassen gemäß KEMA 01ATEX1099 X
FCB.....-X.....	zugelassen gemäß KEMA 01ATEX1099 X
IS.....-X.....	zugelassen gemäß KEMA 01ATEX1099 X
CIXS3	zugelassen gemäß KEMA 03ATEX1157 X
CW.XS3-.....-.....	zugelassen gemäß KEMA 03ATEX1157 X

Für diese Kombinationen müssen nur die Parameter für die Kapazität, Induktivität bzw. Induktivität/Widerstandsverhältnis berücksichtigt werden.

(16) Bericht

KEMA Nr. 2077605-1

(17) Besondere Bestimmungen für den sicheren Gebrauch

Zu Umgebungstemperaturbereich und elektrische Daten siehe (15).

(18) Grundlegende Gesundheits- und Sicherheitsanforderungen

Abgedeckt von den unter (9) erwähnten Normen.

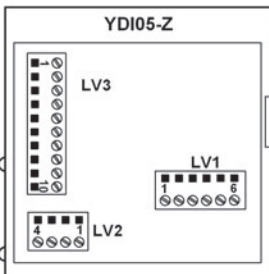
(19) Prüfungsunterlagen

Gemäß Aufstellung im Prüfbericht Nr. 2077605-1

Hazardous (Classified) Location
 Class I,II,III, Division 1, Groups A,B,C,D,E,F,G T4
 Class I, Zone 1, Groups IIA, IIB, IIC T4
 Class II, Zone 20

Non-Hazardous Location

FM Global or CSA Approved/
 Certified Universal Apparatus
 with
Entity Concept parameters
 (see note 3)
 See also Control drawing of
 this Apparatus !



Output parameters for combined circuits:

Circuit	Connector	U _o	I _o	P _o	C _o	L _o
RS232 IIB	LV2	12,4V 24,8V *	260 mA	0,8 W	7,9 µF 850 nF*	2 mH
RS232 IIC	LV2	12,4V 24,8V *	260 mA	0,8 W	1,24 µF 112 nF*	400 µH
RS422, IIB	LV3	6,0V (6,8V*)	172 mA #	500 mW	972 µF (380 µF*)	5 mH
RS422, IIC	LV3	6,0V (6,8V*)	172 mA #	500 mW	12 µF (17,9 µF*)	700 µH

Input parameters for combined circuits:

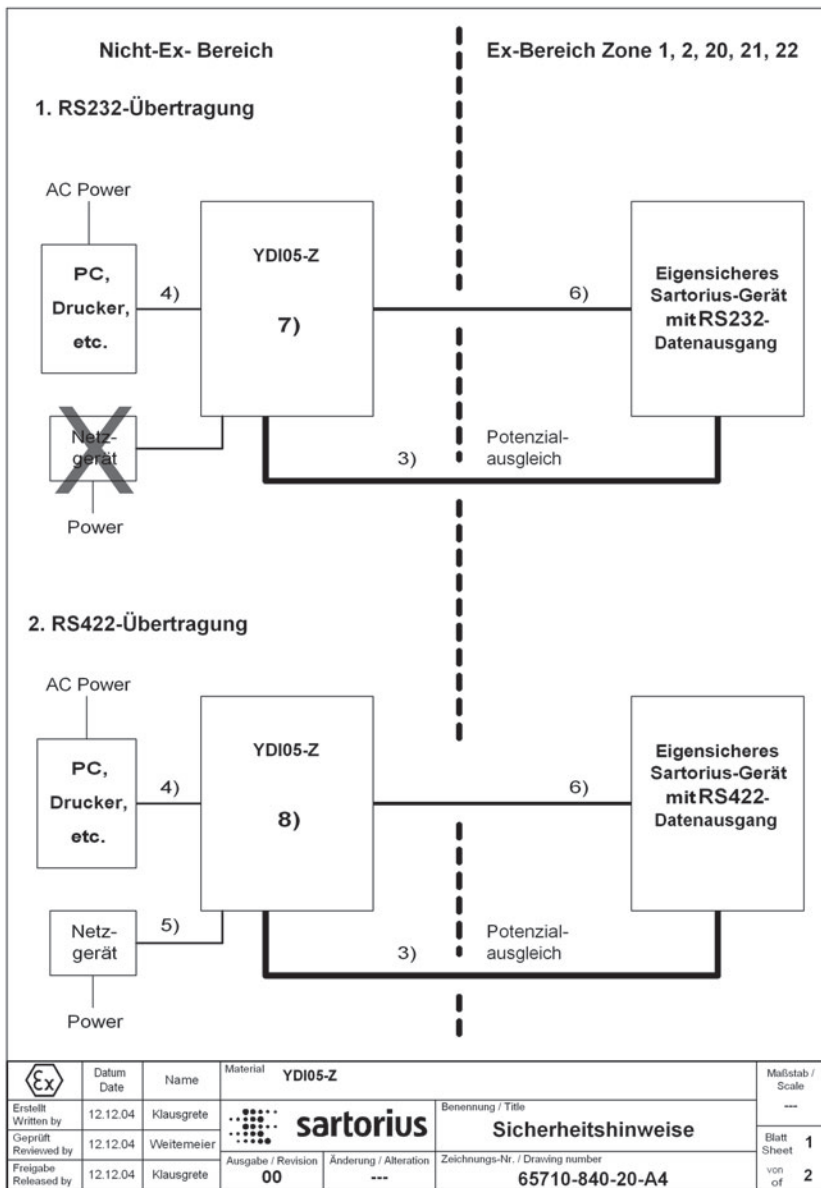
Circuit	Connector	U _i	I _i	P _i	C _i	L _i
RS232	LV2	12,6 V 25,2V*	any	any	0	0
RS422	LV3	12,6 V	0,2A	2,3 W	28 µF	2 µH

Note: IIB parameters must be applied for Group C and D and IIC parameters for Group A and B

*: between the lines # resistor limited

- 1) In the **USA**: The installation must be in accordance with the National Electrical Code[®], NFPA 70, Article 504 or 505 and ANSI / ISA-RP 12.6. In **Canada**: The installation must be in accordance with the Canadian Electrical Code[®], Part1, Section 18.
- 2) In the **USA**: The Apparatus must be connected to a suitable ground electrode per National Electrical Code[®], NFPA 70, Article 504 or 505. The resistance of the ground pad must be less than 1 ohm. In **Canada**: The Apparatus must be connected to a suitable ground electrode per Canadian Electrical Code[®], Part 1. The resistance of the ground pad must be less than 1 ohm.
- 3) The apparatus must not be connected to any device that uses or generates in excess of 250Vrms or 250Vdc.
- 4) **DC supply** (12V DC– 30V DC)for **RS422** (IS connection to LV3) **only!**
- 5) The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus not specifically examined in combination as a system when the approved values of Voc, Isc and Pmax resp. Uo, Po of the associated apparatus are less than or equal to Vmax, Imax and Pmax resp. Ui, Ii, Pi of the intrinsically safe apparatus and the approved values of Ca and La resp. Co and Lo of the associated apparatus are greater than Ci and Li of the intrinsically safe apparatus plus all cable parameters.
- 6) Ambient temperature range: -20°C +50°C (-4°F +122°F)
- 7) **WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.**



			Title		Revision	
Written by	2005-11-11	Klausgrete	Control Drawing		sartorius	
Reviewed by	2005-11-11	Klausgrete	Drawing number		00	
Released by	2005-11-11	Klausgrete	65710-800-07-A4		Page 1 of 1	

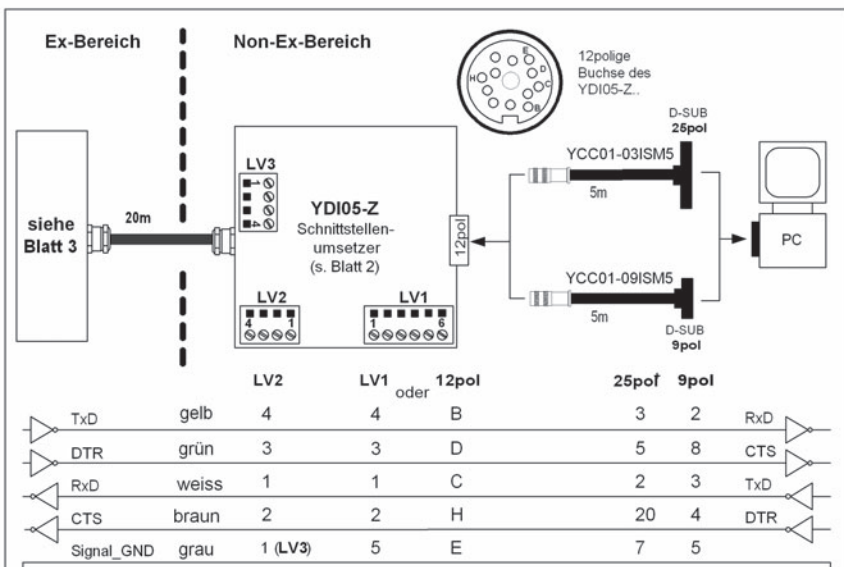


Sicherheitshinweise

Diese Sicherheitshinweise gelten für Installation, Betrieb, Wartung und Reparatur des Geräts

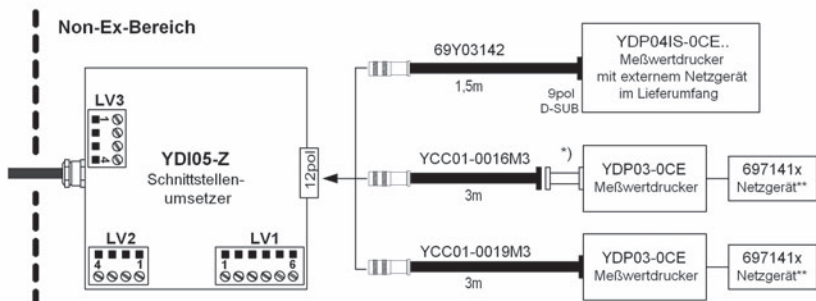
- 1) Installation ist nach geltenden Gesetzen, Vorschriften, Verordnungen und Normen von einer Fachkraft durchzuführen. Insbesondere ist die Normen EN 60079-14 (für gasexplosionsgefährdete Bereiche) und/oder EN50281-1-2 (Staubexplosionsgefährdete Bereiche) zu beachten.
- 2) Hinweise zur Installation, Betrieb, Wartung und Reparatur in den mitgelieferten Betriebsanleitungen aller Geräte unbedingt beachten. Sicherheitshinweise sowie EG-Baumusterprüfbescheinigungen (siehe jeweilige Betriebsanleitung) für alle Geräte beachten.
- 3) **Alle metallischen Teile** (Gehäuse, Stativ, Lastplatte, Aufstellbock, etc.) müssen galvanisch mit dem **Potenzialausgleich (PA)** verbunden sein. Der Betreiber hat dazu einen Leiter von mindestens 4 mm² Querschnitt an den seitlich am Gehäuse angebrachten PA-Anschluss anzuschließen. Die Niederohmigkeit dieser Verbindung zur PA-Schiene ist bei der Installation der Anlage vor Ort zu überprüfen. Die Schirme der Verbindungsleitungen dürfen nur dann zur Erdung verwendet werden, wenn dadurch keine unerlaubten Spannungsdifferenzen entstehen und der Schirm den ggf. auftretenden Ausgleichsstrom aufnehmen kann. Bei der Installation ist dafür zu sorgen, dass der am PA angeschlossen Draht sich nicht verdrehen kann. Gegen Selbstlockern wird an Anschluss mittels der mitgelieferten Zahnscheibe, Federring und Sechskantmutter (Zahnscheibe, Ringöse des PA-Anschlusses, Federring, Sechskantmutter) gesichert.
- 4) Nur Datenleitungen. Im Fehlerfall dürfen nur Spannungen bis 250V_{eff} (375V_{ss}) auftreten.
- 5) DC-Versorgungsspannung: **12V DC - 30V DC**.
- 6) **Anschlusskabel sind möglichst fest zu verlegen**, um Beschädigungen und Zugbelastung zu vermeiden. Besondere Bedingungen beim angeschlossenen eigensicheren Gerät beachten!
- 7) Bei RS232-Verbindung zwischen YDI05-Z und dem eigensicheren Sartorius-Gerät **keine** externe Spannungsversorgung an den YDI05-Z anschließen. Interne Stecker (ST1 ... ST4) in Position "RS232" (siehe Bedienungsanleitung) stellen!
- 8) Bei RS422-Verbindung zwischen YDI05-Z und dem eigensicheren Sartorius-Gerät externe Spannungsversorgung (12V DC bis 30V DC) an den YDI05-Z anschließen. Interne Stecker (ST1 ... ST4) in Position "RS422" (siehe Bedienungsanleitung) stellen! **Kein** Anschluss an "EE x RS232" (Steckerleiste LV 2) vornehmen!
- 9) Bei der Installation und beim Betrieb des Schnittstellenumsetzers dessen IP-Schutzgrad von **IP20** berücksichtigen. Bei abgedichteter DC-Anschlussöffnung ist **IP40** erfüllt.
- 10) Arbeiten die Geräte nicht störungsfrei, diese sofort vom Netz trennen!
- 11) Geräte nur in erlaubten Temperaturbereich einsetzen. Wärmeeinstrahlung vermeiden.
- 12) Fremdbezogene Kabel unterliegen der Verantwortung des Betreibers.
- 13) Die Anlage in angemessenen Abständen von einer dafür ausgebildete Fachkraft auf ihre ordnungsgemäße Funktion und Sicherheit überprüfen lassen.
- 14) Im Reparaturfall nur Originalersatzteile des Herstellers verwenden!
- 15) Jeder Eingriff in das Gerät (außer durch von Sartorius autorisierte Personen) führt zum Verlust der Ex-Konformität sowie aller Garantieansprüche. Auch ein Öffnen der Geräte darf nur durch autorisiertes Fachpersonal erfolgen.
- 16) Modifikationen (auch durch Sartorius-Mitarbeiter) sind nur mit ausdrücklicher schriftlicher Genehmigung erlaubt.
- 17) Installation nur im spannungslosen Zustand durchführen!

	Datum Date	Name	Material YDI05-Z			Maßstab / Scale
Erstellt Written by	12.12.04	Klausgrete		sartorius	Benennung / Title	
Geprüft Reviewed by	12.12.04	Weitemeier			Sicherheitshinweise	
Freigabe Released by	12.12.04	Klausgrete	Ausgabe / Revision 00	Änderung / Alteration ---	Zeichnungs-Nr. / Drawing number 65710-840-20-A4	von of
						2
						2



An Pin 2 von LV1 muss eine Spannung zwischen 5V ... 10V anliegen.

+: Pin 1 = Schirm (Gehäuse)



Wichtig!

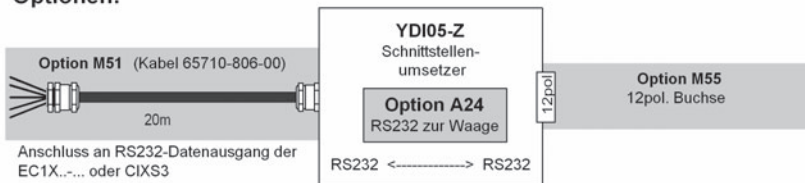
An den Schnittstellenumsetzer dürfen nur elektrische Betriebsmittel mit einer max. Spannung U_m von 250V angeschlossen werden. Die Zenerspannung U_z beträgt 12,6V.

*: Kabel im Lieferumfang

**: 6971412 Europa 6971413 USA / Kanada
6971966 sonst. Länder mit länderspezifischem Netzkabel

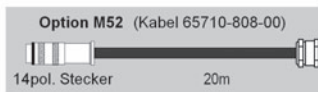
		Datum	Name	Material	Benennung / Title		Maßstab / Scale
Erstellt	25.08.06	Klausgrete	YDI05-Z: RS232 (Ex) - RS232 (Non-Ex) -Verbindungen		sartorius		---
Geprüft	25.08.06	Klausgrete			Optionen und Zubehör		Blatt Sheet 1
Freigabe	25.08.06	Klausgrete	Ausgabe / Revision	Änderung / Alteration	Zeichnungs-Nr. / Drawing number		von of 7
Released by			02	---	65710-840-40-A4		

Optionen:

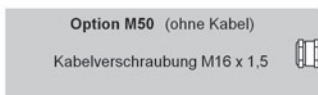


Anschluss an RS232-Datenausgang der EC1X... oder CIXS3

oder

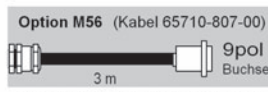


Anschluss an RS232-Datenausgang der EC1X... oder CIXS3 über ein Adapterkabel oder direkt an FCT01-X... oder FC/FCA/IS.....-X..

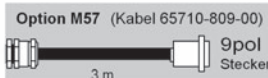


Anschluss an RS485-Datenausgang der CIXS3, FCT01-X.. oder FC/DCA/IS.....-X..

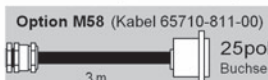
oder



9pol. RS232-Anschluss an Drucker YDP03-0CE (statt YCC01-0019M3) oder an PC (statt YCC01-09ISM5)







9pol. RS232-Anschluss an Drucker YDP04IS-0CE.. (statt 69Y03142)





25pol. RS232-Anschluss an PC (statt YCC01-03ISM5)

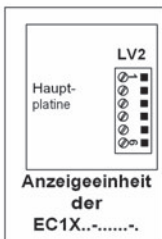
Zubehör:

-  YAS04CIS Kabelverschraubung M16x1,5 (für Kabel statt 12pol. Buchse)
-  Kabelverschraubung M12x1,5 (für Kabel statt Netzgerät)
-  69Y03166 14-poliger Stecker
-  69QC0010 12-poliger Stecker

	Buchse	Stecker	
	9pol	25pol	9pol
TxD (ge) →	2	2	+
RxD (ws) ←	3	3	+
CTS (br) ←	4	5	+
DTR (gn) →	8	20	+
GND (gr) ←	5	7, 14	+

	Datum	Name	Material			Benennung / Title	Maßstab / Scale
			YDI05-Z: Optionen für RS232 zur Waage				
Erstellt Written by	25.08.06	Klausgrete		Optionen und Zubehör			Blatt Sheet
Geprüft Reviewed by	25.08.06	Klausgrete		Zeichnungs-Nr. / Drawing number			
Freigabe Released by	25.08.06	Klausgrete	Ausgabe / Revision	Änderung / Alteration	65710-840-40-A4		von of
			02	---			7

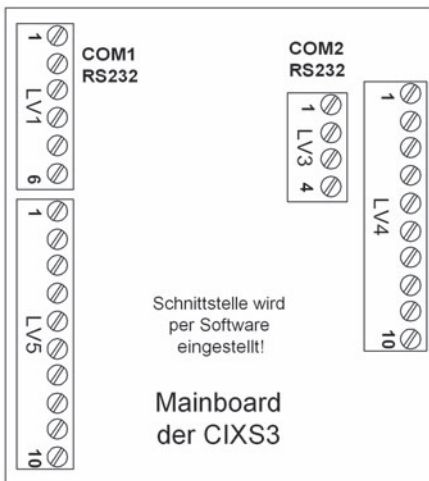
Anschluss von EC1X...-.....- an YDI05-Z (Option A24, M51):



	LV2	LV2
TxD	4	gelb
DTR	1	grün
RxD	3	weiss
CTS	2	braun
Signal_GND	5	grau

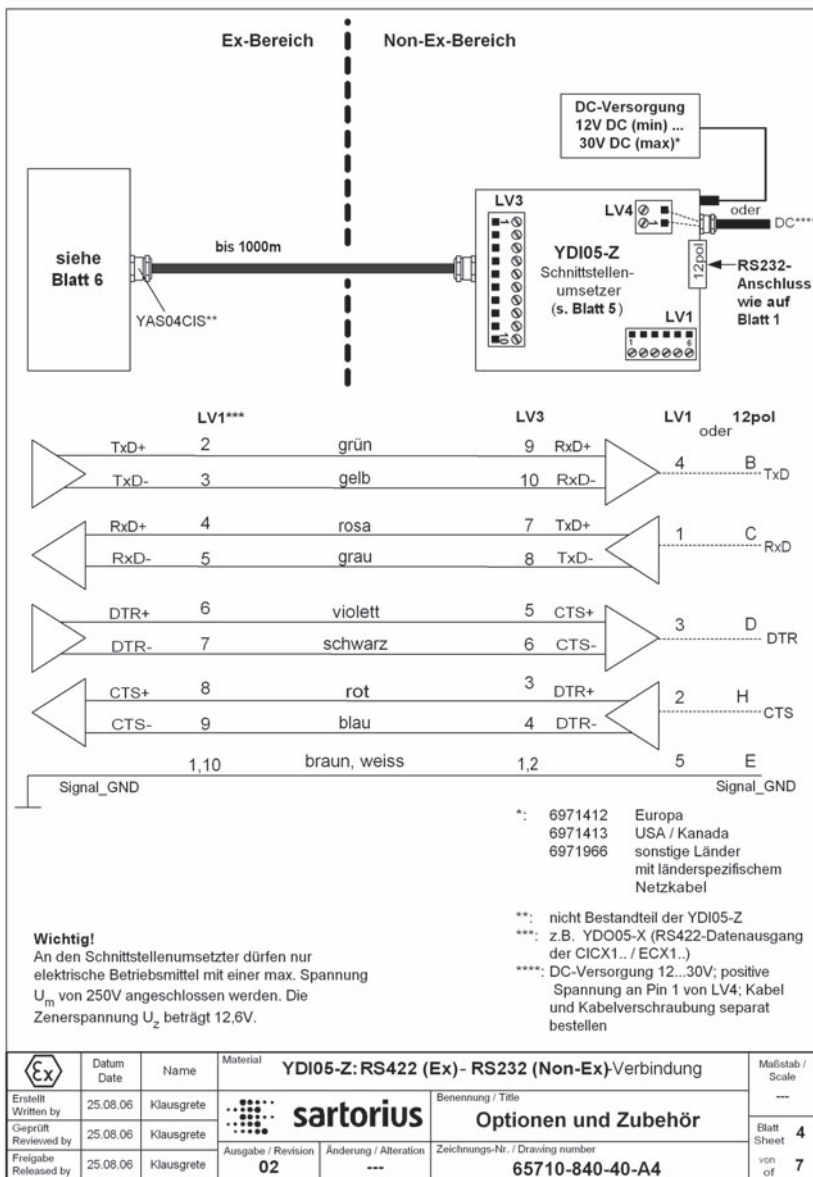
Drucker	Code (Menü der Waage)			
YDP03-0CE	5-1-4	5-2-3	5-3-1	5-4-3
YDP04IS-0CE	5-1-7	5-2-2	5-3-2	5-4-3

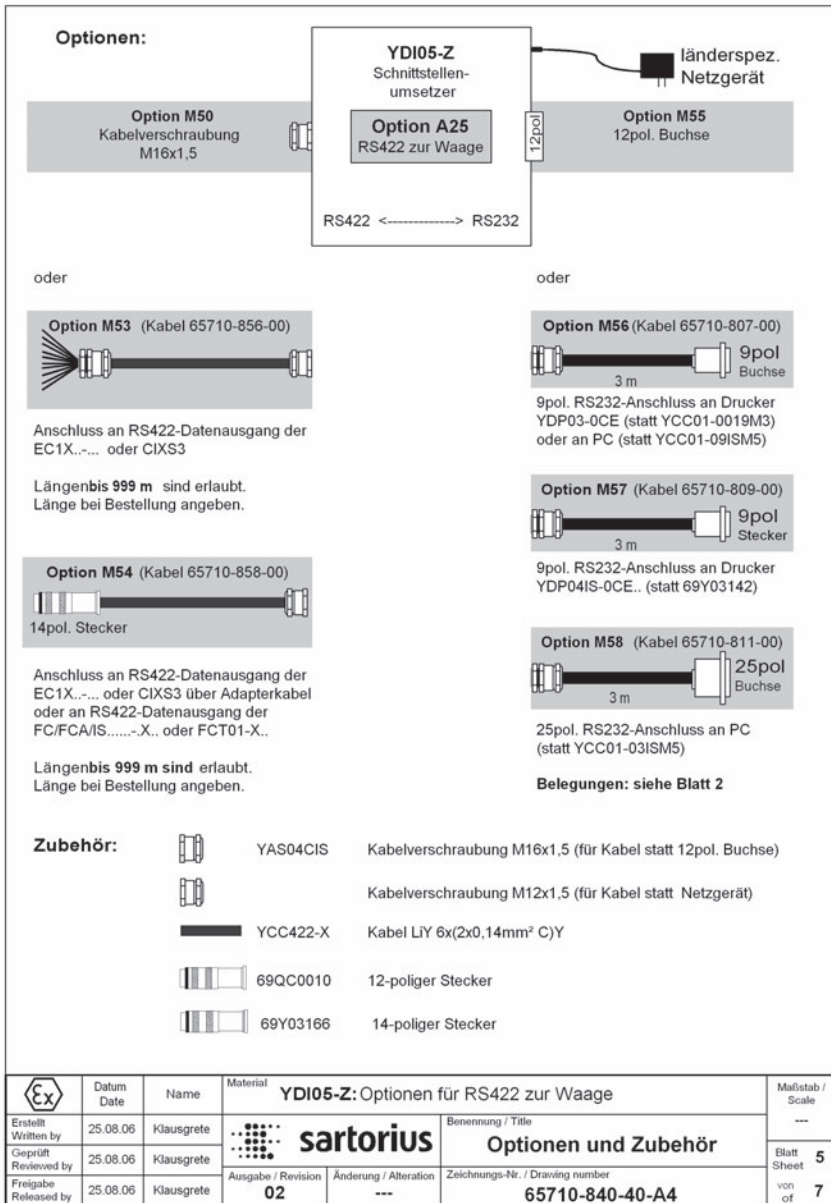
Anschluss von CIXS3 an YDI05-Z (Option A24, M51):



	COM1 LV1	COM2 LV3	
TxD	2	1	gelb
DTR	4	3	grün
RxD	3	2	weiss
CTS	1	4	braun
Signal_GND	5	1 (LV4)	grau

	Datum	Name	Material		Benennung / Title		Maßstab / Scale
	Date		YDI05-Z: RS232-Anschlüsse an verschiedene Geräte		Optionen und Zubehör		---
Erstellt Written by	25.08.06	Klausgrete					Blatt Sheet
Geprüft Reviewed by	25.08.06	Klausgrete					
Freigabe Released by	25.08.06	Klausgrete	Ausgabe / Revision 02	Änderung / Alteration ---	Zeichnungs-Nr. / Drawing number 65710-840-40-A4		von of
							7



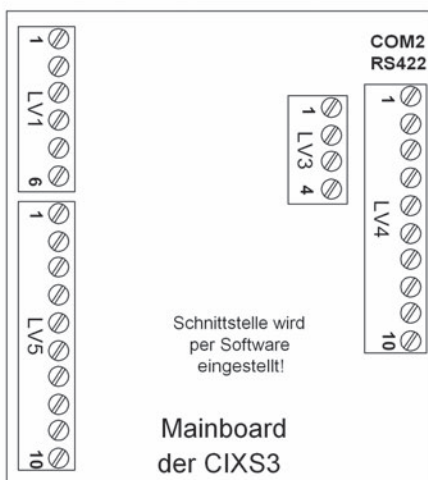


Anschluss von EC1X...-.....- an YDI05-Z (Option A25, M53):



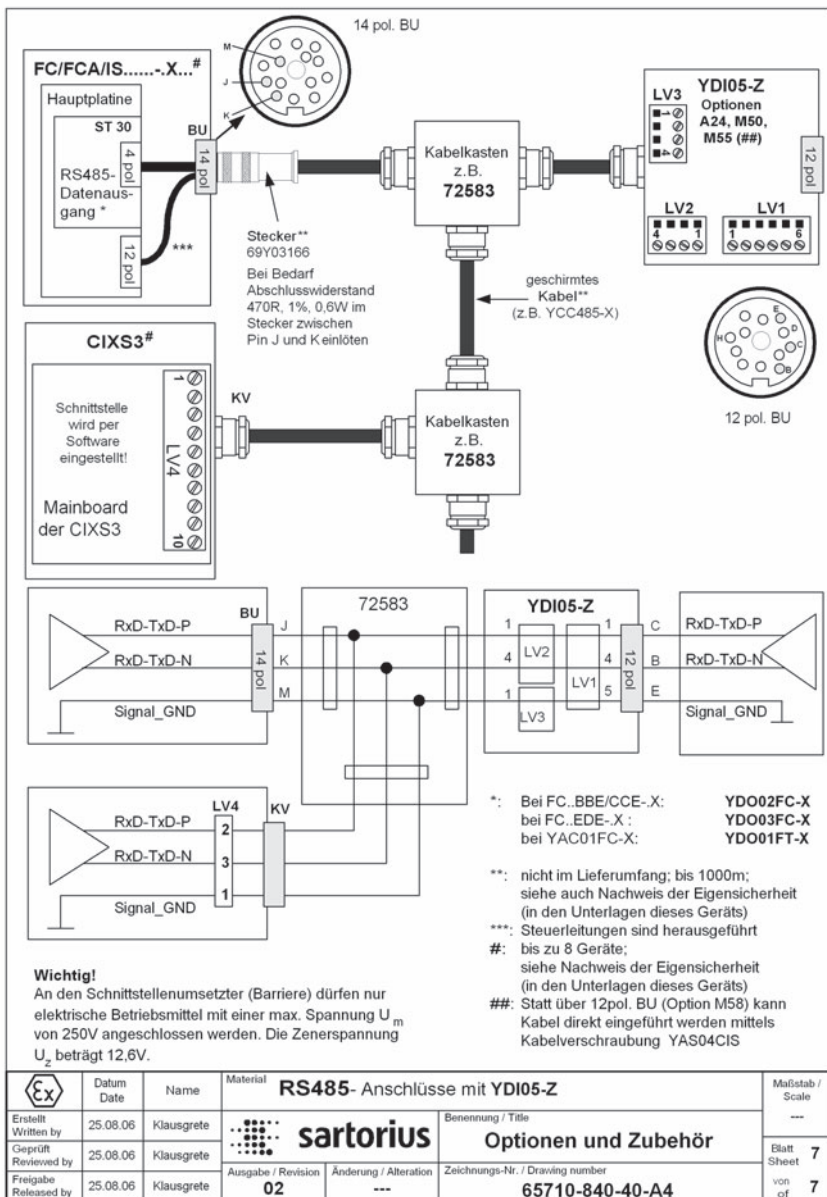
	LV1	
TxD+	2	grün
TxD-	3	gelb
RxD+	4	rosa
RxD-	5	grau
DTR+	6	violett
DTR-	7	schwarz
CTS+	8	rot
CTS-	9	blau
Signal_GND	1,10	braun, weiss

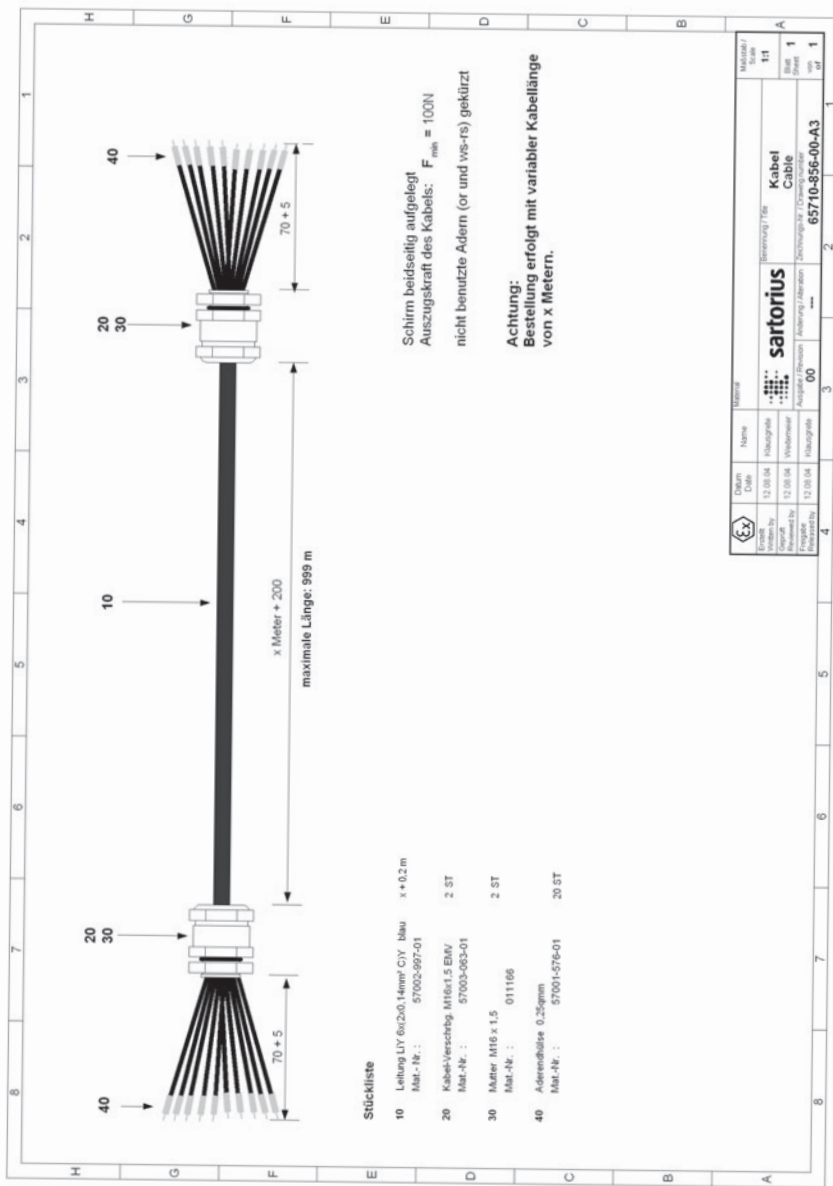
Anschluss von CIXS3 an YDI05-Z (Option A25, M53):

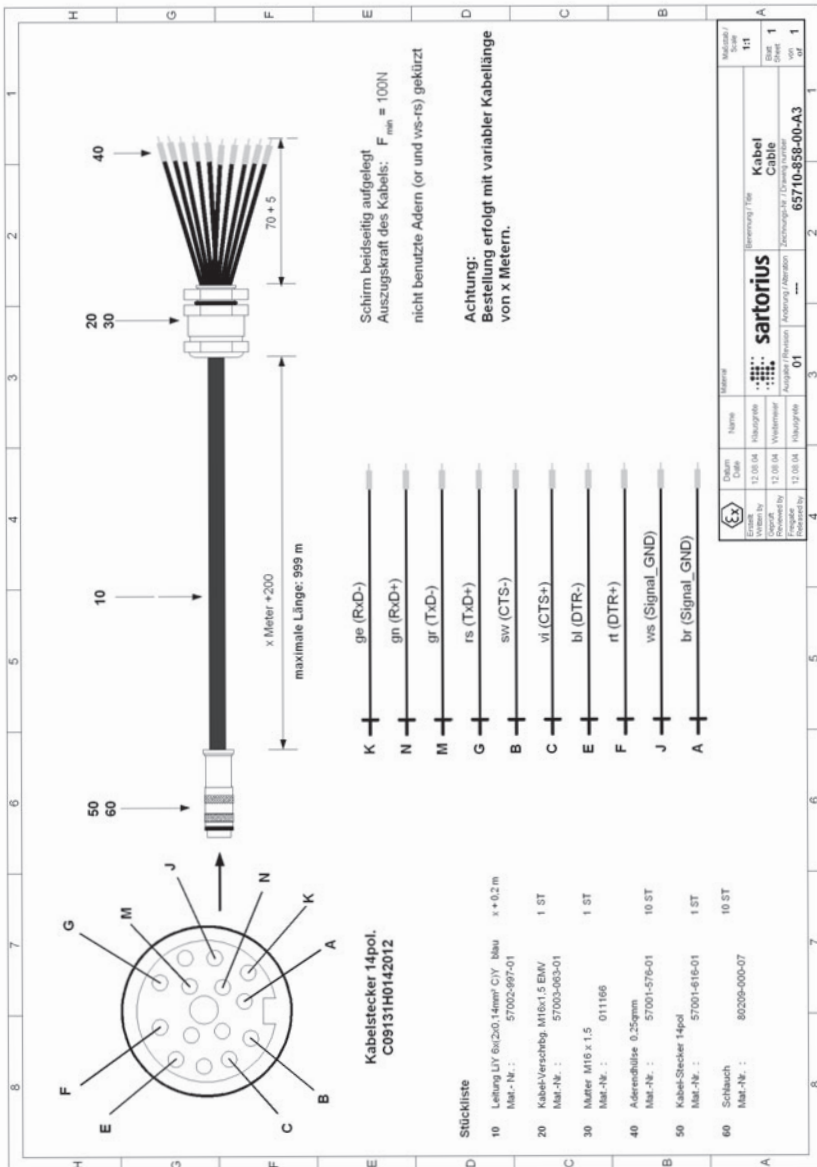


	LV4	
TxD+	2	grün
TxD-	3	gelb
RxD+	4	rosa
RxD-	5	grau
DTR+	6	violett
DTR-	7	schwarz
CTS+	8	rot
CTS-	9	blau
Signal_GND	1,10	braun, weiss

	Datum Date	Name	Material YDI05-Z: RS422-Anschlüsse an verschiedene Geräte			Maßstab / Scale
	Erstellt Written by	25.08.06	Klausgrete		Benennung / Title	---
	Geprüft Reviewed by	25.08.06	Klausgrete		Optionen und Zubehör	Blatt Sheet
	Freigabe Released by	25.08.06	Klausgrete	Ausgabe / Revision	Änderung / Alteration	Zeichnungs-Nr. / Drawing number
			02	---	65710-840-40-A4	7







				Material / Scale 1:1
Erstellt	12.08.04	Überwollt	12.08.04	Kabel
Überprüft	12.08.04	Wiedemann	12.08.04	01
Freigegeben	12.08.04	Hausgrube	12.08.04	65710-858-00-A3
Revidiert	12.08.04	Hausgrube	12.08.04	1

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Sartorius AG reserves the right to make changes to the technology, features, specifications and design of the equipment without notice.

Status: September 2006
Sartorius AG, Goettingen,
Germany