

(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 07 ATEX 2013 X

(15) Description of equipment

The interface adaptor, type series VEGACONNECT CONNECT.CX** is used to convert USB standard signals into the industrial standard communication signal HART and the serial standard I²C-BUS-signal. Furthermore the interface adaptor can be used as data logger or handheld device. The interface adaptor with both communication modules may be operated inside or outside the hazardous area. Inside the hazardous area the interface adaptor with both communication modules is permitted to be used as category -1 or -2 equipment. The different operation modes of the interface adaptor including the additional protective measures required for application as associated apparatus in a VEGA-sensor are specified in the safety instructions for application in hazardous areas.

The interface adaptor consists of a connection box with an alternatively installed communication module VEGACONNECT4, variant CONNECT.CXA4 or the connection box with built-in communication module PLICSCOM, variant CONNECT.CXAP. The CONNECT.CXAP variant is also called "Handheld".

The communication module VEGACONNECT4 can be used in various designs, installed in the connection box as HART- or I²C-BUS interface adaptor, installed in the VEGA-sensor of the PLICS type series as an I²C-BUS interface adaptor or installed in the VEGA-sensor of the PLICS type series functioning as a data logger.

Operation as associated apparatus (marking II (1) G D [Ex ia] IIC)

The permissible ambient temperature range for the operation of the CONNECT4 as associated apparatus is specified below:

-20°C up to + 60°C	<ul style="list-style-type: none">- variant CONNECT.CXA4 (used for "USB-communication" with CONNECT4 installed in the connection box)- variant CONNECT.CXX4 (used for "USB-communication" with CONNECT4 installed in a VEGA-Sensor).
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Operation as category 1-equipment (marking II 1 G Ex ia IIC T*)

For relationship between temperature class and maximum permissible ambient temperature in area of the electronics, reference is made to the following tables. The table for the temperature classes of the VEGA-sensor is to be considered in addition.

CONNECT.CXX* functioning as "data logger"

temperature class	T6	T5	T4, T3, T2, T1
permissible ambient temperature at the electronics	-20°C ... +46°C	-20°C ... +58°C	-20°C ... +60°C


Clause 6.4.2 of the EN1127-1 has been considered with the specification of the permissible ambient temperatures at the electronics.

For applications requiring a category 1-equipment the process pressure shall range from 0.8 bar to 1.1 bar.

For application conditions for the operation without explosive mixtures reference is made to the manufacturer's specifications, e.g. operating instructions.

CONNECT.CXAP as "Handheld"

For the application as "Handheld" the table for the temperature classes of the VEGA-sensor operated with the "Handheld" shall be considered.

Operation as category 2-equipment (marking  II 2 G Ex ia IIC T*)

For relationship between temperature class and maximum permissible ambient temperature in area of the electronics, reference is made to the following tables.

CONNECT.CXX* functioning as "data logger"

temperaturklasse	T6	T5	T4, T3, T2, T1
permissible ambient temperature at the electronics	-40°C ... +62°C	-40°C ... +77°C	-40°C ... +85°C

For application conditions for the operation without explosive mixtures reference is made to the manufacturer's specifications, e.g. operating instructions.

CONNECT.CXAP as "Handheld"

For the application as "Handheld" the table for the temperature classes of the VEGA-sensor operated with the "Handheld" shall be considered.

Electrical data

Associated apparatus, VEGACONNECT4 installed in the connection box, type CONNECT.CXA4 or in a VEGA-Sensor, type CONNECT.CXX4

Supply and signal circuit
(USB-standard interface:
via 5-strand connecting cable with USB-
B-connector at LapTop, PC, SPS or
modem)

$U \leq 6 \text{ V}$
 $U_m = 16 \text{ V AC/DC}$

Signal circuits

I²C-BUS connecting cable
(plug connector or sliding contacts)

type of protection Intrinsic Safety Ex ia IIC

Maximum values:

$$U_o \leq 6.0 \text{ V}$$

$$I_o \leq 198 \text{ mA}$$

$$P_o \leq 327 \text{ mW}$$

C_i negligibly low

L_i negligibly low

$$L_o = 0.8 \text{ mH}$$

$$C_o = 40 \text{ }\mu\text{F}$$

For connection to an intrinsically safe I²C-BUS interface.

Maximum values:

$$U_i \leq 6.0 \text{ V}$$

$$P_i \leq 360 \text{ mW}$$

or

For connection to an intrinsically safe I²C-BUS interface of VEGA-sensors of type series VEGAPULS50/60, VEGAFLEX50/60, VEGASON50/60, VEGACAL60 and VEGABAR50/60.

(For a list of sensors suitable for connection with the appropriate certificates, reference is made to the safety instructions)

HART- connecting cable
(2mm plug connector at both ends)

type of protection Intrinsic Safety Ex ia IIC

Maximum values:

$$U_o \leq 6.0 \text{ V}$$

$$I_o \leq 3.7 \text{ mA}$$

$$P_o \leq 5.6 \text{ mW}$$

$$C_i = 1.2 \text{ nF}$$

L_i negligibly low

$$L_o = 1 \text{ H}$$

$$C_o = 40 \text{ }\mu\text{F}$$

For connection to intrinsically safe signal and supply circuits of VEGA-sensors of HART-design. For the interconnection, the rules for the interconnection of intrinsically safe circuits shall be considered, and it shall be guaranteed that the maximum values of the intrinsically safe signal and supply circuit of the VEGA-sensor are not exceeded.

Maximum value: $U_i \leq 30 \text{ V}$

As intrinsically safe equipment, VEGACONNECT4 functioning as “data logger“, installed in a VEGA-sensor, type CONNECT.CXX*

I²C-BUS
(sliding contacts)

type of protection Intrinsic Safety Ex ia IIC
For connection to an intrinsically safe I²C-BUS interface.

Maximum values:

$U_i \leq 6.0 \text{ V}$

$P_i \leq 360 \text{ mW}$

C_i negligibly low

L_i negligibly low

or

For connection to an intrinsically safe I²C-BUS interface of VEGA-sensors of type series VEGAPULS50/60, VEGAFLEX50/60, VEGASON50/60, VEGACAL60 and VEGABAR50/60.

(For a list of sensors suitable for connection with the appropriate certificates, reference is made to the safety instructions)

As intrinsically safe equipment, PLICSCOM used as “Handheld“, installed in the connection box, type CONNECT.CXAP

I²C-BUS connecting cable

type of protection Intrinsic Safety Ex ia IIC
For connection to the intrinsically safe equipment series VEGAPULS50/60, VEGAFLEX50/60, VEGASON50/60, VEGACAL60 and VEGABAR50/60.

(For a list of sensors suitable for connection with the appropriate certificates, reference is made to the safety instructions)

The intrinsically safe I²C-BUS circuit and the intrinsically safe HART circuit are electrically interconnected.

The electrical isolation between the intrinsically safe circuits I²C-BUS and HART and the non-intrinsically safe USB circuit fulfills the requirements to a peak value of the nominal voltage of 375 V.

(16) Test report PTB Ex 07-26252

(17) Special conditions for safe use

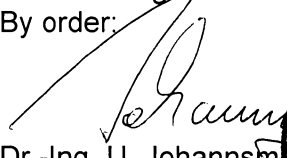
1. For the different modes of operation of the interface adaptor, type series VEGACONNECT CONNECT.CX** reference is made to the safety instructions for application in hazardous areas.
2. In the operation mode "USB-communication" the VEGACONNECT4, installed in the connection box CONNECT.CXA4 or in a VEGA-sensor of type CONNECT.CXX4, may only be operated for service purposes with an intrinsically safe circuit. In this mode the VEGACONNECT4 installed in the connection box or the VEGA-sensor shall be operated outside the hazardous area or it shall be guaranteed that an explosive atmosphere does not exist during the operation.
3. The I²C-BUS connecting cable and the HART- connecting cable shall not be used simultaneously.
4. The interface adaptor, type series VEGACONNECT CONNECT.CX** is designed with surfaces which could become charged electrostatically. For the variant CONNECT.CXAP used as "Handheld" an appropriate warning note (warning label) shall point to this danger.
5. For the application as associated apparatus with the marking Ex II (1) G D [Ex ia] IIC) the interface adaptors of type series VEGACONNECT CONNECT.CX** may only be operated with VEGA-sensors which are approved for potentially explosive gas or dust atmospheres.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



Braunschweig, March 23, 2007