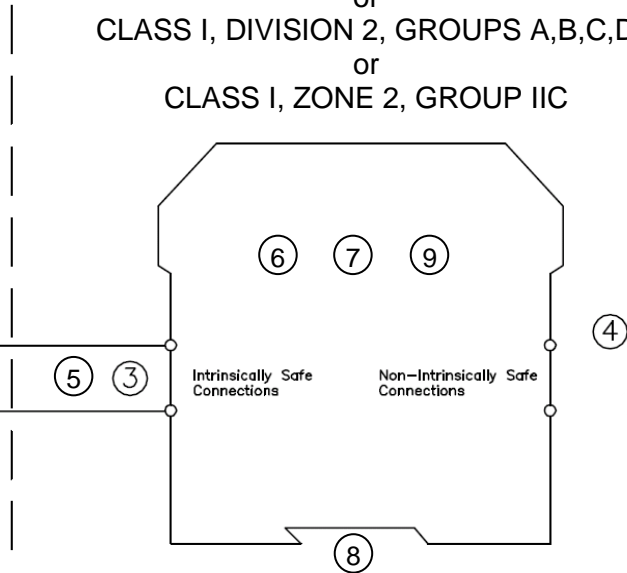


NONHAZARDOUS LOCATION
 or
 HAZARDOUS (CLASSIFIED) LOCATION
 CLASS I, DIVISION 1, GROUPS A,B,C,D
 CLASS II, DIVISION 1, GROUPS E,F,G
 CLASS III, DIVISION 1
 or
 CLASS I, ZONE 0 and 1, IIC
 ZONE 20 and 21, IIIC

NONHAZARDOUS LOCATION
 or
 CLASS I, DIVISION 2, GROUPS A,B,C,D
 or
 CLASS I, ZONE 2, GROUP IIC

Any Simple Apparatus (2) or approved device with Entity Concept (1) parameters (V_{max} , I_{max} , C_i , L_i) appropriate for connection to Associated Apparatus with Entity Concept parameters listed in Table 1.



NOTES:

- ① The output current of this associated apparatus is limited by a resistor such that the output voltage-current plot is a straight line drawn between open-circuit voltage and short-circuit current. 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 V_{oc} (or U_o) and I_{sc} (or I_o) for the associated apparatus are less than or equal to $V_{max}(U_i)$ and $I_{max}(I_i)$ for the intrinsically safe apparatus. Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations. Cable capacitance, C_{cable} , plus intrinsically safe equipment capacitance, C_i must be less than the marked capacitance, C_a (or C_o), shown on any associated apparatus used. The same applies for inductance (L_{cable} , L_i and L_a or L_o , respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: $C_{cable} = 60 \text{ pF/ft.}$, $L_{cable} = 0.2 \text{ } \mu\text{H/ft.}$
- ② This associated apparatus may also be connected to simple apparatus as defined in Article 504.2 and installed and temperature classified in accordance with Article 504.10(B) of the National Electrical Code (ANSI/NFPA 70), or other local codes, as applicable.
- ③ Where multiple circuits extend from the same piece of associated apparatus, they must be installed in separate cables or in one cable having suitable insulation. Refer to Article 504.30(B) of the National Electrical Code (ANSI/NFPA 70) and Instrument Society of America Recommended Practice ISA RP12.6 for installing intrinsically safe equipment.
- ④ Barriers shall not be connected to any device which uses or generates internally any voltage in excess of 250V r.m.s. or DC unless the device has been determined to adequately isolate the voltage from the barrier.
- ⑤ Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 of the National Electrical Code (ANSI/NFPA 70) or other local codes, as applicable.
- ⑥ Associated apparatus must be installed in an enclosure suitable for the application in accordance with the National Electrical Code (ANSI/NFPA 70) for installation in the United States, the Canadian Electrical Code for installations in Canada, or other local codes, as applicable. The devices shall be installed in an enclosure that utilizes a tool removable door/cover.
- ⑦ The barriers are rated 'Nonincendive' for use in Class I, Division 2 or Zone 2 or non-hazardous locations. A temperature rating of T4 applies to all nonincendive rated barriers. If the barriers are intended to be mounted in a Division 2 location, they must be mounted in an enclosure with a minimum ingress protection of IP2X. If the barriers are intended to be mounted in a Zone 2 location, they must be mounted in an enclosure that is AEx certified (for US) or Ex certified (for Canada) with a minimum ingress protection of IP54 and installed in an area of not more than pollution degree 2.

Dieses Dokument enthält sicherheitsrelevante Angaben. Es darf nicht ohne Absprache mit dem Normenfachmann geändert werden!		
This document contains safety-relevant information. It must not be altered without the authorization of the norm expert!		
CONFIDENTIAL acc. to ISO 16016	Only valid as long as released in EDM	date: 2013-May-23
 Worldwide	Control Drawing	116-0374
	KCD2-ST/SOT/SON-Ex*	sheet 1 of 2

The enclosure must be able to accept Division 2 / Zone 2 wiring methods.

- ⑧ Power feed modules KFD2-EB2* maybe used in conjunction with power rail to energize P+F isolated barriers (KCD2 Series) when installed in accordance with Control Drawing 116-0160.
- ⑨ Temperature range is either -20 to +60°C or -20 to +70°C.
 Device could be used within temperature range -20°C to +60°C without any mounting limitations. This means mounting in any direction and side by side (without any space between devices).
 Device could be used within temperature range -20°C to +70°C, if mounting conditions according documentation are met.

Table 1 – ENTITY PARAMETERS							
MODEL NUMBER	TERMINALS	V _{oc} (U _o) [V]	I _{sc} (I _o) [mA]	P _o [mW]	GROUPS	C _a (C _o) [uF]	L _a (L _o) [mH]
KCD2-ST-Ex1* KCD2-SON-Ex1* KCD2-SOT-Ex1*	1+,2-	10.5	17.1	45	A,B IIC	2.41	121.5
C,E,F,G IIB, IIIC							
KCD2-ST-Ex2* KCD2-SON-Ex2* KCD2-SOT-Ex2*	1+,2-; 3+,4-				D IIA	75	972.7

The values of Lo and Co listed in the table above are allowed if one of the following conditions is met:

- The total Li of the external circuit (excluding the cable) is < 1% of the Lo value or
- The total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

The values of Lo and Co listed in the table above shall be reduced to 50% when both of the following conditions are met:

- the total Li of the external circuit (excluding the cable) is ≥ 1% of the Lo value and
- the total Ci of the external circuit (excluding the cable) is ≥ 1% of the Co value.


Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1uF for IIA, IIB and 600nF for IIC.

WARNING - Substitution of components may impair intrinsic safety and suitability for use in Class I, Div. 2/Zone 2.

AVERTISSEMENT - La substitution de composants peut compromettre la sécurité intrinsèque et l'adéquation à une utilisation en Classe I, Div. 2/Zone 2.

WARNING - Do not disconnect the equipment or actuate switches when the equipment is energized and an explosive atmosphere is present.

AVERTISSEMENT - Ne pas débrancher l'équipement et ne pas actionner les commutateurs lorsque l'équipement est sous tension et exposé à une atmosphère explosive.

Dieses Dokument enthält sicherheitsrelevante Angaben. Es darf nicht ohne Absprache mit dem Normenfachmann geändert werden!		
This document contains safety-relevant information. It must not be altered without the authorization of the norm expert!		
CONFIDENTIAL acc. to ISO 16016	Only valid as long as released in EDM	date: 2013-May-23
	Control Drawing	116-0374
	Worldwide	KCD2-ST/SOT/SON-Ex*
		sheet 2 of 2