

(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 02ATEX1090 X**
- (4) Equipment or protective system: **Two Wire Proximity Sensors Type ...-.....Y1-..... /**
- (5) Manufacturer: **Hans Turck GmbH & Co. KG**
- (6) Address: **Witzlebenstrasse 7, 45466 Mülheim an der Ruhr, 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. 2011237.

- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014 : 1997

EN 50020 : 1994

- (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 G EEx ia IIC T4...T6**

Arnhem, 11 September 2002
KEMA Quality B.V.



T. Pijpker
Certification Manager

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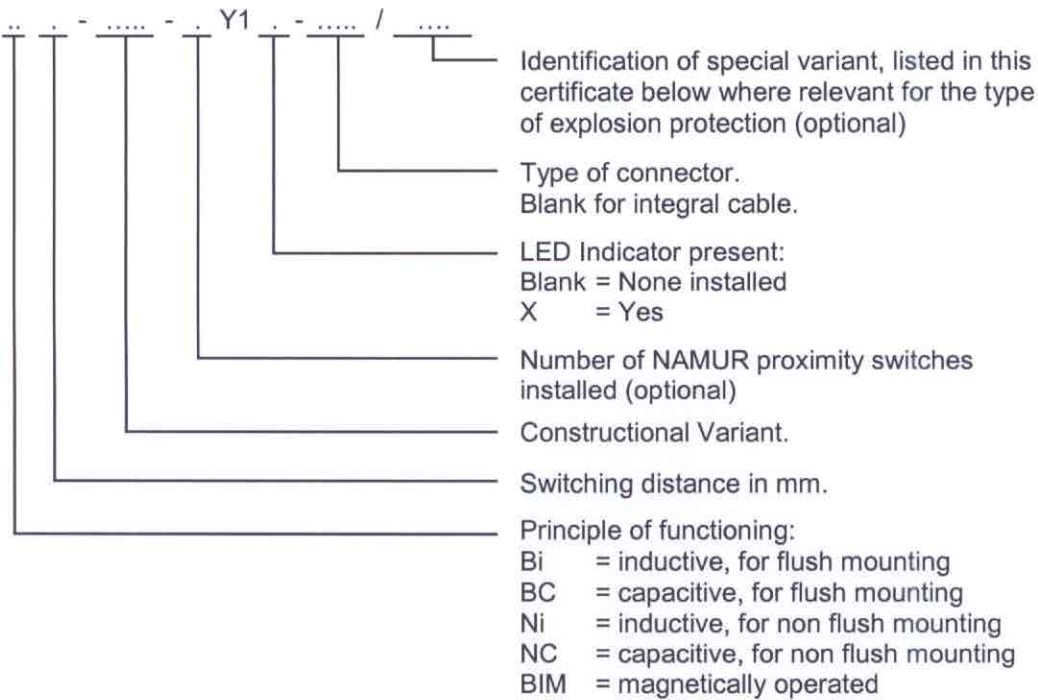
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(15) **Description**

Two Wire Proximity Sensors Type ...-....-Y1-..... / are used for initiation of signalling or switching functions on a preset distance value being reached.

The model code of the range of Two Wire Proximity Sensors ...-....-Y1-..... / is characterised as follows:



The range of Two Wire Proximity Sensors ...-....-Y1-..... / consists of various constructional variants classified into ten Type Groups.

The identification of the applicable Type Group is related to the Construction Variant and can be determined from the following table:

Construction Variant	Type Group	Construction Variant	Type Group	Construction Variant	Type Group	Construction Variant	Type Group
AKT	A	G19...Y1...	A	K20...Y1...	A	Q06	M
BRY	GD	G19...Y1X..	AX	K20...Y1X..	AX	Q08	M
CA25	G	G20...Y1...	A	K30	A	Q10	A
CA40	G	G20...Y1X..	AX	K33	G	Q10S	A
CK40	G	G28	A	K34	G	Q11	M
CP40	G	G30...Y1...	A	K40	G	Q11S	A
CP80	G	G30...Y1X..	AX	K90...Y1...	G	Q12	A
DS20	AD	G47	G	K90...Y1X..	GX	Q14	A
DSC26	MD	GS880	M	M12...Y1...	A	Q20	A
DSU26	AD	H04	K	M12...Y1X..	AX	Q25	G
DSU35	AD	H08	M	M18...Y1...	A	Q30	G
FST	M	H12	A	M18...Y1X..	AX	Q5.5	K
G05	K	H6,5	K	M30...Y1...	A	Q6.5	K
G08	M	HS540	K	M30...Y1X..	AX	Q80	G
G10	M	HS865	M	MP ...Y1...	G	QF5,5	K
G12...Y1...	A	IKE	A	MP ...Y1X..	GX	QST	M
G12...Y1X..	AX	IKT	A	NST	M	S12...Y1...	A
G13	A	INT	K	P12...Y1...	A	S12...Y1X..	AX
G14...Y1...	A	ISM	A	P12...Y1X..	AX	S18...Y1...	A
G14...Y1X..	AX	K08	S	P18...Y1...	A	S18...Y1X..	AX
G18...Y1...	A	K09	S	P18...Y1X..	AX	S30...Y1...	A
G18...Y1X..	AX	K10	S	P30...Y1...	A	S30...Y1X..	AX
G180	A	K11...Y1...	A	P30...Y1X..	AX	T12	A
G181	A	K11...Y1X..	AX	PSM	M		
G182	A	K12	A	PST	M		

Table 15.1 Relation between Construction Variant and Type Group.

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Ambient temperature range $-25\text{ °C} \dots +70\text{ °C}$ for all models, with the following exceptions:

Model code	Ambient temperature range
...-...-.Y1.-... / S80	$-25\text{ °C} \dots +80\text{ °C}$
...-...-.Y1.-... / S85	$-25\text{ °C} \dots +85\text{ °C}$
...-...-.Y1.-... / S97	$-40\text{ °C} \dots +70\text{ °C}$
...-...-.Y1.-... / S100	$-25\text{ °C} \dots +100\text{ °C}$

Table 15.2 Exceptions in ambient temperature range.

The temperature class of the different Sensor models, depending on ambient temperature, I_i and P_i , can be determined from tables 15.3, 15.5, 15.7 and 15.9, using table 15.1 for the type group designation.

Electrical data

For Type Groups AX and GX, tables 15.3 through 15.8 inclusive do not apply. These models have an external LED indicator that limits the parameters as shown in tables 15.9 and 15.10.

For models BC.-...-.Y1.-... / and NC.-...-.Y1.-... / the effective internal inductance L_i as listed in tables 15.4, 15.6, 15.8 and 15.10 below does not apply. Instead L_i is negligibly small for these models.

For Dual Sensors, which are in Type Groups AD, GD and MD, the listed electrical data apply per sensor circuit.

Type Groups A, AD, G and GD

Supply and output signal..... in type of explosion protection intrinsic safety EEx ia IIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown in table 15.3.

Maximum ambient temperature	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	T4	15	60	200
+85 °C	T5	15	60	200
+70 °C	T6	15	60	200

Table 15.3 Temperature class and circuit parameters for Type Groups A, AD, G and GD.

The effective internal capacitance C_i and the effective internal inductance L_i can be determined from table 15.4.

Type Group	C_i (nF)	L_i (μ H)
A, AD	150	150
G, GD	250	350

Table 15.4 Effective C_i and L_i .

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Type Groups M, MD and S

Supply and output signal..... in type of explosion protection intrinsic safety EEx ia IIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown below in table 15.5.

Maximum ambient temperature	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	T4	15	60	200
+85 °C	T5	15	60	130
+70 °C	T6	15	60	130

Table 15.5 Temperature class and circuit parameters for Type Groups M, MD and S.

The effective internal capacitance C_i and the effective internal inductance L_i can be determined from table 15.6.

Type Group	C_i (nF)	L_i (μ H)
M, MD	150	150
S	250	350

Table 15.6 Effective C_i and L_i .

Type Group K

Supply and output signal..... in type of explosion protection intrinsic safety EEx ia IIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown below in table 15.7.

Maximum ambient temperature	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	T4	15	60	200
+85 °C	T5	15	60	80
+70 °C	T5	15	60	200
+70 °C	T6	15	60	80
+60 °C	T6	15	60	150

Table 15.7 Temperature class and circuit parameters for Type Group K.

The effective internal capacitance C_i and the effective internal inductance L_i can be determined from table 15.8.

Type Group	C_i (nF)	L_i (μ H)
K	150	150

Table 15.8 Effective C_i and L_i .

Type Groups AX and GX

Supply and output signal..... in type of explosion protection intrinsic safety EEx ia IIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown below in table 15.9.

Maximum ambient temperature	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	T4	15	50	200
+70 °C	T4	15	60	200
+85 °C	T5	15	20	200
+70 °C	T5	15	40	200
+70 °C	T6	15	20	200

Table 15.9 Temperature class and circuit parameters for Type Groups AX and GX.

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The effective internal capacitance C_i and the effective internal inductance L_i can be determined from table 15.10.

Type Group	C_i (nF)	L_i (μ H)
AX	150	150
GX	250	350

Table 15.10 Effective C_i and L_i .

(16) **Report**

KEMA No. 2011237.

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

If part of the enclosure is made of plastic and the projected surface area is greater than 20 cm^2 , the sensor is accompanied with a warning to avoid static charging. This warning applies only when the sensor is used as apparatus group IIC equipment. In this case precautions have to be taken that the enclosure cannot be charged by static electricity.

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

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

Covered by the standards listed at (9).

(19) **Test documentation**

		<u>dated</u>
1. Description	Approval Document (7 pages)	15.08.2002
2. Drawing No.	OZ-136 (12 sheets)	26.08.2002
	4-70000, rev. a	13.05.1972
	060 220 51	14.03.2002
	120 520 00	06.05.1998
	120 730 02	31.08.1984
	121 478 00, rev. a	08.10.1999
	SP 121 606 00	14.03.1996
	BP 121 606 00 (2 sheets)	19.03.1997
	SP 121 632 00	12.12.1995
	BP 121 632 00 (2 sheets)	12.12.1995
	SP 121 763 00	13.03.1996
	122 036 00 (3 sheets)	24.09.2001
	122 831 00 (3 sheets)	02.05.2002