

CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **KEMA 02ATEX1090 X** Issue Number: **8**

(4) Product: **Two Wire Proximity Sensors Type ...-.....-Y1-..... /**

(5) Manufacturer: **Hans Turck GmbH & Co. KG**

(6) Address: **Witzlebenstrasse 7, 45472 Mülheim an der Ruhr, Germany**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number NL/KEM/ExTR06.0032/05.

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

EN IEC 60079-0 : 2018

EN 60079-11 : 2012

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:



**II 1G Ex ia IIC T4 ... T6 Ga or
II 2G Ex ia IIC T4 ... T6 Gb and / or
II 2D Ex ia IIIC T95 °C or T115 °C Db or
II 1D Ex ia IIIC T₂₀₀ 135 °C Da**

Date of certification: 15 June 2021

DEKRA Certification B.V.

R. Schuller
Certification Manager



(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 02ATEX1090 X**

Issue No. 8

(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 Type ...-...-Y1.-... / ... is characterised as shown in table 1 of annex 1

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

The identification of the applicable Type Group is related to the Constructional Variant and can be determined from table 15.1 of annex 1.

Category II 1 G only applies to the Constructional Variants shown in table 15.2 of annex 1.

Ambient temperature range -25 °C to +70 °C for all models, with the exceptions shown in table 15.3 of annex 1.

The temperature class of the different Sensor models, depending on ambient temperature, I_i and P_i , can be determined from tables 15.4, 15.6, 15.8, 15.10 and 15.12 (see annex 1), using table 15.1 in annex 1 for the type group designation.

For potentially explosive atmospheres caused by the presence of combustible dust with ambient temperatures up to 70 °C, for equipment category 2D the maximum surface temperature for the Two Wire Proximity Sensors in Type Groups AX and GX is 115 °C and for all other Two Wire Proximity Sensors is 95 °C, for equipment category 1D the maximum surface temperature for all sensor type groups is 135 °C.

Electrical data

See annex 1.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/KEM/ExTR06.0032/05.

(17) **Specific conditions of use**

For the ambient temperature range, see (15).

For use in an area requiring equipment with EPL Ga:

If part of the enclosure is made of plastic and the projected surface area is greater than 4 cm² for apparatus of group IIC, 25 cm² for apparatus of group IIB or 50 cm² for apparatus of group IIA, the sensor is accompanied with a warning to avoid static charging. In this case, precautions have to be taken that the risk of electrostatic charging of the enclosure is excluded.

(13) **SCHEDULE**

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For use in an area requiring equipment with EPL Gb, for group IIC:

If part of the enclosure is made of plastic and the projected surface area is greater than 20 cm², the sensor is accompanied with a warning to avoid static charging. In this case precautions have to be taken that the risk of electrostatic charging of the enclosure is excluded.

The Two Wire Proximity Sensors used in a potentially explosive atmospheres caused by the presence of combustible dust, must be mounted in such a way that they are protected against impact.

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

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/KEM/ExTR06.0032/05.

(20) **Certificate history**

Issue 1 - 201123700	Updated to latest standards and directive.
Issue 2 - 7	Updated newer edition of standards and Types added
Issue 8 - 225686500	Updated to latest standards and directive. Updated Ex marking for dust.

Annex 1 to Certificate of Conformity IECEx KEM 06.0036X
 Annex 1 to IECEx Test report NL/KEM/ExTR06.0032/05
 Annex 1 to KEMA 02ATEX1090 X, issue 8

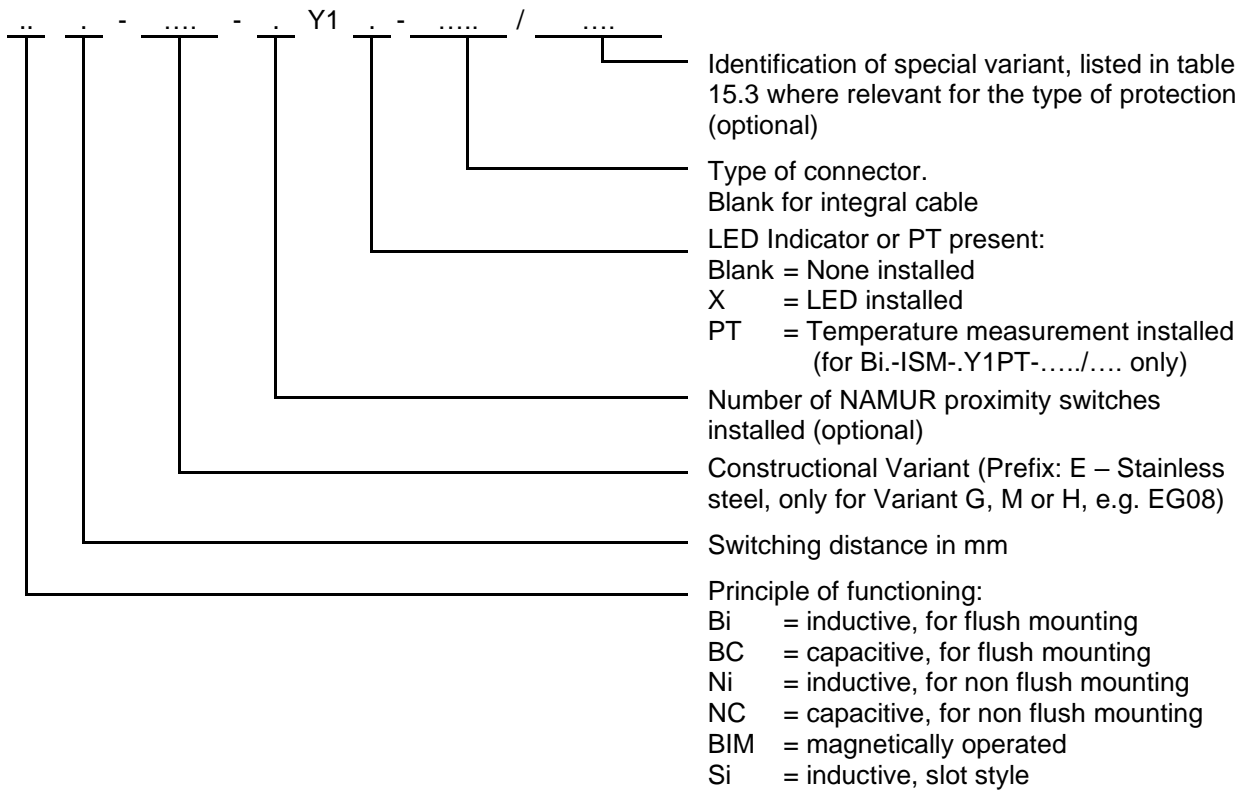


Table 1 Model code breakdown.

Annex 1 to Certificate of Conformity IECEx KEM 06.0036X
Annex 1 to IECEx Test report NL/KEM/ExTR06.0032/05
Annex 1 to KEMA 02ATEX1090 X, issue 8

Constructional Variant	Type Group	Constructional Variant	Type Group	Constructional Variant	Type Group	Constructional Variant	Type Group
AKT	A	.G182	A	K11...Y1X..	AX	PST	M
BKT	S	.G19...Y1...	A	K12	A	Q06	M
BKT31A	S	.G19...Y1X..	AX	K14	A	Q08	M
BRY	GD	.G20...Y1...	A	K20...Y1...	A	Q10	A
CA25	G	.G20...Y1X..	AX	K20...Y1X..	AX	Q10S	A
CA40	G	.G28	A	K30	A	Q11	M
CK40	G	.G30...Y1...	A	K33	G	Q11S	A
CP40	G	.G30...Y1X..	AX	K34	G	Q12	A
CP80	G	.G47	G	K40	G	Q14	A
DS13,5	AD	.GS880	M	K90...Y1...	G	Q20	A
DS20	AD	.H04	K	K90...Y1X..	GX	Q25	G
DSC26	MD	.H08	M	.M12...Y1...	A	Q30	G
DSU26	AD	.H12	A	.M12...Y1X..	AX	Q42	G
DSU35	AD	.H6,5	K	M12EE	A	Q5,5	K
FMG	K	H14	A	.M18...Y1...	A	Q6,5	K
FST	M	H6,5-2	K	.M18...Y1X..	AX	Q80	G
.G05	K	HLM	M	.M30...Y1...	A	QF5,5	K
.G08	M	.HS540	K	.M30...Y1X..	AX	QN26	G
.G10	M	.HS865	M	.MP...Y1...	G	QST	M
.G12...Y1...	A	IKE	A	.MP...Y1X..	GX	S12...Y1...	A
.G12...Y1X..	AX	IKT	A	NST	M	S12...Y1X..	AX
.G13	A	INT	K	P12...Y1...	A	S18...Y1...	A
.G14...Y1...	A	ISM	A	P12...Y1X..	AX	S18...Y1X..	AX
.G14...Y1X..	AX	K08...Y1...	S	P18...Y1...	A	S30...Y1...	A
.G18...Y1...	A	K08...Y1X..	SX	P18...Y1X..	AX	S30...Y1X..	AX
.G18...Y1X..	AX	K09	S	P30...Y1...	A	T12	A
.G180	A	K10	S	P30...Y1X..	AX	UNT	K
.G181	A	K11...Y1...	A	PSM	M		

Table 15.1 Relation between Constructional Variant and Type Group.

Constructional Variant	Constructional Variant	Constructional Variant	Constructional Variant
DS20	.G30...Y1...	K08	.M18...Y1X..
G05	.G30...Y1X..	K08...Y1...	.M30...Y1...
G08	H14	K08...Y1X..	.M30...Y1X..
.G12...Y1...	.H6,5	K14	Q10S
.G12...Y1X..	H6,5-2	.M12...Y1...	QF5,5
.G18...Y1...	INT	.M12...Y1X..	
.G18...Y1X..	ISM	.M18...Y1...	

Table 15.2 Relation between Constructional Variant and Zone 0.

Zone	Model code	Ambient temperature range
0 and 1	...-.....Y1.-..... / S80	-25 °C to +80 °C
1	...-.....Y1.-..... / S85	-25 °C to +85 °C
0 and 1	...-.....Y1.-..... / S97	-40 °C to +70 °C
1	...-.....Y1.-..... / S100	-25 °C to +100 °C
0 and 1	...-.....Y1.-..... / S1280	-55 °C to +70 °C

Table 15.3 Exceptions in ambient temperature range.

Annex 1 to Certificate of Conformity IECEx KEM 06.0036X
Annex 1 to IECEx Test report NL/KEM/ExTR06.0032/05
Annex 1 to KEMA 02ATEX1090 X, issue 8

Electrical data

For models BC-.....Y1-..... / and NC-.....Y1-..... / the effective internal inductance L_i as listed in tables 15.5, 15.7, 15.9, 15.11 and 15.13 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.

For Sensor Models Bi-ISM-.Y1PT-...../..... the listed values of U_i and I_i apply per sensor circuit and the listed value of P_i applies as a maximum value for both circuits combined.

Type Groups A, AD, G and GD, :

Supply and output signal :

In type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown in table 15.4.

Maximum ambient temperature	Zone	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	1	T4	20	60	200
+85 °C	1	T5	20	60	200
+80 °C	0 and 1	T5	20	60	200
+70 °C	0 and 1	T6	20	60	200
+70 °C	20 and 21	-	20	60	200

Table 15.4 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 15.5.

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

Table 15.5 Effective C_i and L_i .

Annex 1 to Certificate of Conformity IECEx KEM 06.0036X
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Annex 1 to KEMA 02ATEX1090 X, issue 8

Type Groups M, MD and S :

Supply and output signal:

In type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown in table 15.6.

Maximum ambient temperature	Zone	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	1	T4	20	60	200
+80 °C	0 and 1	T4	20	60	200
+85 °C	1	T5	20	60	130
+80 °C	0 and 1	T5	20	60	130
+70 °C	0 and 1	T6	20	60	130
+70 °C	20 and 21	-	20	60	130

Table 15.6 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 15.7.

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

Table 15.7 Effective C_i and L_i .

Type Group K Typ-Gruppe K:

Supply and output signal :

In type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown in table 15.8.

Maximum ambient temperature	Zone	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	1	T4	20	60	200
+80 °C	0 and 1	T4	20	60	200
+85 °C	1	T5	20	60	80
+80 °C	0 and 1	T5	20	60	80
+70 °C	0 and 1	T5	20	60	200
+70 °C	0 and 1	T6	20	60	80
+70 °C	20 and 21	-	20	60	80
+60 °C	0 and 1	T6	20	60	150
+60 °C	20 and 21	-	20	60	150

Table 15.8 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 15.9.

Type Group	C_i (nF)	L_i (μH)
K	150	150

Table 15.9 Effective C_i and L_i .

Annex 1 to Certificate of Conformity IECEx KEM 06.0036X
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Type Groups AX and GX :

Supply and output signal :

In type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown in table 15.10.

Maximum ambient temperature	Zone	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	1	T4	20	50	200
+80 °C	0 and 1	T4	20	50	200
+70 °C	0 and 1	T4	20	60	200
+85 °C	1	T5	20	20	200
+80 °C	0 and 1	T5	20	20	200
+70 °C	0 and 1	T5	20	40	200
+70 °C	0 and 1	T6	20	20	200
+70 °C	20 and 21	-	20	60	200

Table 15.10 Temperature class and circuit parameters for Type Groups AX and GX.

The effective internal capacitance C_i and the effective internal inductance L_i can be determined from table 15.11.

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

Table 15.11 Effective C_i and L_i .

Type Group SX :

Supply and output signal :

In type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the maximum values shown in table 15.12.

Maximum ambient temperature	Zone	Temperature class	U_i (Vdc)	I_i (mA) (resistively limited)	P_i (mW)
+100 °C	1	T4	20	50	200
+80 °C	0 and 1	T4	20	50	200
+85 °C	1	T5	20	20	130
+80 °C	0 and 1	T5	20	20	130
+70 °C	0 and 1	T6	20	20	130
+70 °C	20 and 21	-	20	60	130

Table 15.12 Temperature class and circuit parameters for Type Group SX.

The effective internal capacitance C_i and the effective internal inductance L_i can be determined from table 15.13.

Type Group	C_i (nF)	L_i (μ H)
SX	250	350

Table 15.13 Effective C_i and L_i .

Wir/ We: **HANS TURCK GMBH & CO KG**
WITZLEBENSTR. 7, 45472 MÜLHEIM A.D. RUHR

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

Zweidraht Näherungsschalter: ...-.....Y1-...../.....
Two wire proximity switch:

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

EMV - Richtlinie /EMC Directive EN 60947-5-6:2000	2014 / 30 / EU	26.02.2014
ATEX - Richtlinie /Directive ATEX EN IEC 60079-0:2018 EN 60079-11:2012	2014 / 34 / EU	26.02.2014
RoHS – Richtlinie /RoHS Directive	2011 / 65 / EU	08.06.2011

Weitere Normen, Bemerkungen:
additional standards, remarks:

Zusätzliche Informationen:
Supplementary information:

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

Modul B /module B
Modul D /module D
Modul E /module E

EU-Baumusterprüfbescheinigung
EC-type examination certificate

KEMA 02 ATEX 1090 X

ausgestellt:
issued by:

DEKRA Certification B.V.,
Utrechtseweg 310, 6812 AR Arnhem
Kenn-Nr. /number: 0344

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

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

Mülheim, den 22.06.2021



i.V. Dr. M. Linde, Leiter Zulassungen /Manager Approvals

Ort und Datum der Ausstellung /
Place and date of issue

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