

# Certificate



**Nr./No.: 968/FSP 1358.01/17**

<b>Prüfgegenstand</b> <b>Product tested</b>	Induktive, magnetisch-induktive und kapazitive Näherungsschalter Proximity Switches with NAMUR Interface	<b>Zertifikatsinhaber</b> <b>Certificate holder</b>	Werner Turck GmbH & Co. KG Goethestr. 7 58553 Halver Germany
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<b>Typbezeichnung</b> <b>Type designation</b>	...-Y1-.../... (Details see backside of this certificate)
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<b>Prüfgrundlagen</b> <b>Codes and standards</b>	IEC 62061:2015 ISO 13849-1:2015	IEC 61508 Parts 1-7:2010
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<b>Bestimmungsgemäße Verwendung</b> <b>Intended application</b>	Sensoren für die Verwendung in sicherheitsgerichteten Funktionen bis SIL 3 und PL e: Einkanalig (HFT=0) in Sicherheitsfunktionen bis SIL 1 (IEC 62061, IEC 61511-1), PL c (ISO 13849-1) und SIL 2 (IEC 61511-1 (low demand mode)). Zweikanalig (HFT=1) in Sicherheitsfunktionen bis SIL 3 (IEC 62061, IEC 61511-1 (any mode)) und PL e (ISO 13849-1). Sensors for use in safety functions up to SIL 3 and PL e: In single channel configuration (HFT=0) up to SIL 1 (IEC 62061, IEC 61511-1), PL c (ISO 13849-1) and SIL 2 (IEC 61511-1 (low demand mode)). In HFT=1 configuration up to SIL 3 (IEC 62061, IEC 61511-1 (any mode)) and PL e (ISO 13849-1).
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<b>Besondere Bedingungen</b> <b>Specific requirements</b>	Die Hinweise in der zugehörigen Installations- und Betriebsanleitung sowie im Safety Manual sind zu beachten. The instructions of the associated Safety, Installation and Operating Manual shall be considered.
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Zusammenfassung der Testergebnisse siehe Rückseite des Zertifikates.  
Summary of test results see backside of this certificate.

Gültig bis / Valid until 2022-11-17

Der Ausstellung dieses Zertifikates liegt eine Prüfung zugrunde, deren Ergebnisse im Bericht Nr. 968/FSP 1358.01/17 vom 17.11.2017 dokumentiert sind.

Dieses Zertifikat ist nur gültig für Erzeugnisse, die mit dem Prüfgegenstand übereinstimmen.

The issue of this certificate is based upon an examination, whose results are documented in Report No. 968/FSP 1358.01/17 dated 2017-11-17.

This certificate is valid only for products which are identical with the product tested.

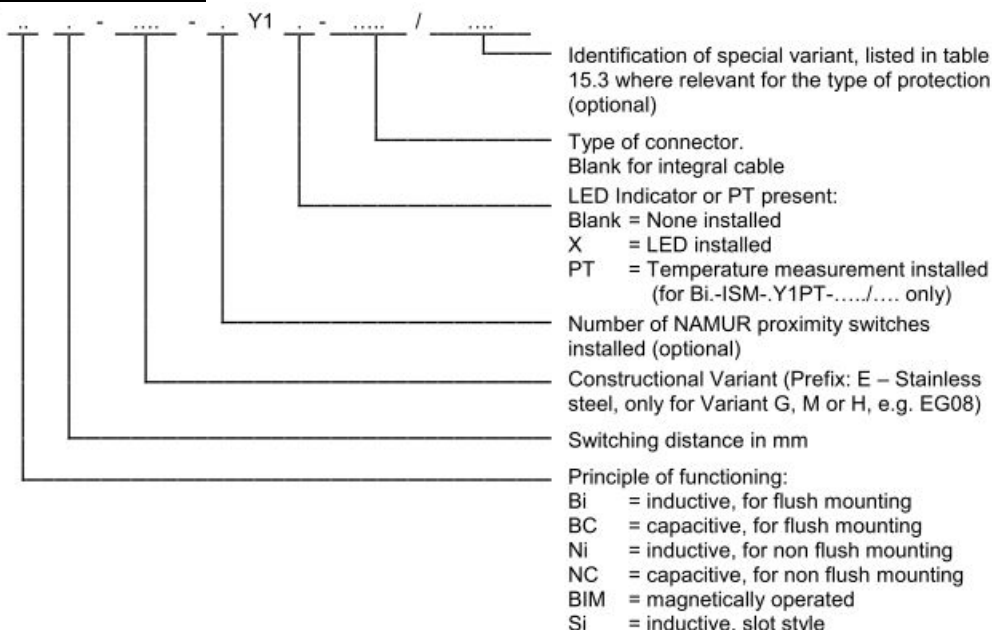
**TÜV Rheinland Industrie Service GmbH**  
Bereich Automation  
Funktionale Sicherheit  
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Köln, 2017-11-17

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. Stephan Häb

**Type designation key:**



The range of two-wire proximity switches type ... -.....Y1. -..... /..... consists of different designs divided into ten groups. The identification of the appropriate type group is related to the designs and can be determined from the following table:

Constructional Variant	Type Group	Constructional Variant	Type Group	Constructional Variant	Type Group	Constructional Variant	Type Group
AKT	A	.G182	A	K12	A	PST	M
BKT	S	.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...Y1...	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		

**Safety-related parameters:**

Parameter	Value
Device Type	A (acc. to IEC 61508-2)
Total Failure Rate $\lambda_S + \lambda_D$	28.5 FIT
Lambda dangerous = Lambda dangerous undetected $\lambda_{DU}$	3.1 FIT
Lambda safe $\lambda_S$	25.2 FIT
Safe Failure Fraction (SFF)	88.4%
MTTF <sub>d</sub>	36 471 a
PFH (1001)	3.1 E-09 1/h
PFD <sub>av</sub> (T = 20a) (1001)	2.7 E-04
Safety Capability (the requested HFT of the relevant application standard has to be considered)	SIL 3, PL e

Remark: 1 FIT = 1 E-09 1/h, Failure rates of the electronic components as per Siemens SN 29500