



Certificate of Compliance

Certificate: 2616459

Master Contract: 157759

Project: 2677956

Date Issued: December 20, 2013

Issued to: Turck Inc.

3000 Campus Dr
Plymouth, MN 55441-2656
USA
Attention: Brad Larson

The products listed below are eligible to bear the CSA Mark shown



Gary Benden

Issued by: Gary Benden

PRODUCTS

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III T4...T6

Ex ia IIC T4...T6

- Namur two-wire proximity sensors. Models **aab-cddde-fggh-jjkmn/pppp**. Ambient temperature rated -25 to +70°C (with exceptions noted in Table 3 below). Rated 20 Vdc, 60 mA max. Intrinsically safe when installed per drawing IS-1.203. Entity parameters as specified below in Table 1 and Table 2.

Where:



Certificate: 2616459

Master Contract: 157759

Project: 2677956

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aa = sensor technology

BC = capacitive

Bi = inductive, embeddable

BIM = inductive, magnet operated

Ni = inductive, non-embeddable

Si = inductive, slot sensor

b = nominal sensing distance in millimeters

(range: the smallest sensing distance is 0.8 mm; the largest is 60 mm)

c = housing material (metal cylindrical sensors only)

blank = nickel plated brass

E = stainless steel

ddd = mechanical construction model codes (with associated entity parameters) – see Table 1 and Table 2

(codes with TC, SK, or SR appended are mechanical variants that do not affect certification)

Table 1

Mechanical Construction Model Code	Entity Parameters (Namur Sensor Output Code = Y1 or Y0)
AKT, DS20, DSU26, DSU35, DSU35TC, G05, G12, G12SK, G14, G18, G18SK, G180, G181, G182, G19,	C _i = 150nF



Certificate: 2616459

Master Contract: 157759

Project: 2677956

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G28, G30, G30SK, H04, H6.5, HS540, IKE, IKT, INT, ISM, K11, K20, K30, M12, M18, M30, P12, P12SK, P18, P18SK, P30, P30SK, PT30, Q5.5, Q6.5, Q10, Q10S, Q11S, Q12, Q14, Q20, QF5.5, S12, S18, S30, UNT	<p>Li = 150uH</p> <p>Ui = 20V</p> <p>Ii = 60mA</p> <p>Pi = 200mW</p>
G12_X, G12SK_X, G14_X, G18_X, G18SK_X, G19_X, G30_X, G30SK_X, K11_X, K20_X, M12_X, M18_X, M30_X, P12_X, P12SK_X, P30_X, P30SK_X, S12_X, S18_X, S30_X	<p>Ci = 150nF</p> <p>Li = 150uH</p> <p>Ui = 20V</p> <p>Ii = 40mA (T5), Ii = 50mA (T4)</p> <p>Pi = 200mW</p>
CA25, CA40, CK40, CP40, CP80, G47, G47SR, K33, K34, K34SR, K40, K40SR, K90, K90SR, Q25, Q30, Q80	<p>Ci = 250nF</p> <p>Li = 350uH</p> <p>Ui = 20V</p> <p>Ii = 60mA</p> <p>Pi = 200mW</p>
K90_X	<p>Ci = 250nF</p> <p>Li = 350uH</p> <p>Ui = 20V</p> <p>Ii = 40mA</p> <p>Pi = 200mW</p>



Certificate: 2616459

Master Contract: 157759

Project: 2677956

Date Issued: December 20, 2013

DSC26, FST, G08, GS880, H08, HS865, NST, PSM, PST, Q06, Q08, Q11, QST	<p>$C_i = 150\text{nF}$</p> <p>$L_i = 150\text{uH}$</p> <p>$U_i = 20\text{V}$</p> <p>$I_i = 60\text{mA}$</p> <p>$P_i = 130\text{mW}$</p>
K08, K09, K10	<p>$C_i = 250\text{nF}$</p> <p>$L_i = 350\text{uH}$</p> <p>$U_i = 20\text{V}$</p> <p>$I_i = 60\text{mA}$</p> <p>$P_i = 130\text{mW}$</p>

Table 2

Mechanical Construction Model Code	Entity Parameters (Namur Sensor Output Code = AY1 or AY0)
AKT, CA25, CA40, CK40, CP40, CP80, DS20, DSU26, DSU35, DSU35TC, G05, G12, G12SK, G14, G18, G18SK, G180, G181, G182, G19, G28, G30, G30SK, G47, G47SR, H04, H6.5, HS540, IKE, IKT, INT, ISM, K11, K20, K30, K33, K34, K34SR, K40, K40SR, M12, M18, M30, P12, P12SK, P18, P18SK, P30, P30SK, PT30, Q5.5, Q6.5, Q10, Q10S, Q11S, Q12, Q14, Q20, Q25, Q30, Q80, QF5.5, S12, S18, S30, UNT	<p>$C_i = 180\text{nF}$</p> <p>$L_i = 350\text{uH}$</p> <p>$U_i = 20\text{V}$</p> <p>$I_i = 60\text{mA}$</p> <p>$P_i = 200\text{mW}$</p>
G12_X, G12SK_X, G14_X, G18_X, G18SK_X, G19_X, G30_X, G30SK_X, K11_X, K20_X, K90_X,	<p>$C_i = 180\text{nF}$</p>



Certificate: 2616459

Master Contract: 157759

Project: 2677956

Date Issued: December 20, 2013

M12_X, M18_X, M30_X, P12_X, P12SK_X, P18_X, P18SK_X, P30_X, P30SK_X, S12_X, S18_X, S30_X	Li = 350uH Ui = 20V Ii = 40mA (T5), Ii = 50mA (T4) Pi = 200mW
DSC26, FST, G08, GS880, H08, HS865, K08, K09, K10, NST, PSM, PST, Q06, Q08, Q11, QST	Ci = 180nF Li = 350uH Ui = 20V Ii = 60mA Pi = 130mW

e = housing modifier (cylindrical sensors only)

blank = standard barrel length, no barb

E = extended barrel length

K = short barrel length

M = medium barrel length

T = barb fitting at cable entry

f = number of NAMUR circuits

blank = 1 circuit

2 = 2 circuits

gg = NAMUR sensor output code



Certificate: 2616459

Master Contract: 157759

Project: 2677956

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Y1 = discrete NAMUR output

Y0 = discrete NAMUR output*

AY1 = integrated circuit NAMUR output^

AY0 = integrated circuit NAMUR output*^

*('0' indicates a non-ATEX approved version, however, these models are electrically identical to the '1' versions, with only mechanical differences that do not affect this certification.)

^('AY' integrated circuit NAMUR output is approved under KEMA ATEX certification report KEMA 04ATEX1152X dated 31.05.2012.)

h = LED

blank = no LED

X = 1 LED

X2 = 2 LEDs

For sensors with integral connectors:

jj = connector family

B1 = minifast, metal

B2 = minifast, plastic

H1 = eurofast

V1 = picofast

k = connector / sensor transition



Certificate: 2616459

Master Contract: 157759

Project: 2677956

Date Issued: December 20, 2013

1 = straight

3 = straight with adaptor

4 = right angle with adaptor

m = number of pins

(range: either 2, 3, or 4; dual sensors use all 4, otherwise only 2 conductors are used)

n = wiring

0 = non-standard (other than 1+/2-)

1 = standard

For sensors with integral cable:

jjkmm = cable length*

blank = 2 meter cable

xM = x meter cable

(range: 100mm to 100m)

Note: *sensors with integral cable may include a molded connector indicated by the following additional codes:

PSG(V) 3 or PSG(V) 3.21 = picofast connector

RS(V) 4.21T or WS(V) 4.21T = eurofast connector

RSM 20 or RSV 20, WSM 20 or WSV 20 = minifast connector

pppp = Optional special option codes – see Table 3 – where relevant for the type of protection



Certificate: 2616459

Master Contract: 157759

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Table 3

Additional Special Option Codes

Special Option	Description	Special Option	Description
F1	Alternate oscillator frequency	S328	Special calibration
F2	Alternate oscillator frequency	S346	Special calibration
F3	Alternate oscillator frequency	S557	Potted terminal chamber
F4	Alternate oscillator frequency	S561	Special pin-out
F5	Alternate oscillator frequency	S580	Special pin-out
S15	Special switch point calibration	S595	Bulk packaging
S56	Special housing length	S665	Special pin-out
S74	Ambient temperature rated -25°C ≤ Ta ≤ +100°C max Magnetic field resistant	S918	Special calibration
S80	Ambient temperature rated -25°C ≤ Ta ≤ +80°C max	S947	Special barrel length
S85	Ambient temperature rated -25°C ≤ Ta ≤ +85°C max	S1019	Special mounting bracket
S90	PUR cable	S1128	3-pin connector molded on integral cable
S97	Ambient temperature rated -40°C ≤ Ta ≤ +70°C max	S1139	Wider sensing range, BIM sensor
S101	Hi-flex cable	S1589	Weld-Guard coating
S105	Shielded cable	S1631	Red LED
S139	Submersible (polyoxymethylene housing)	S1674	Special strip length
S213	Special calibration	S1687	Special pin-out



Certificate: 2616459

Master Contract: 157759

Project: 2677956

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S235	Special calibration	S1764	Weld-Guard coating, Viton sleeve over cable
S250	Fixed calibration capacitive sensor	S1765	Weld-Guard coating, Silicone sleeve over cable
S326	Special calibration	S1775	"Wet-suit" (sensor potted in plastic enclosure)

Notes:

1. 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. This warning applies only when the sensor is used as apparatus group IIC equipment. In this case precautions have to be taken that the risk of electrostatic charging of the enclosure is excluded.

2. For applications in explosive atmospheres, where zone 0 apparatus is required: 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.

3. 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.

APPLICABLE REQUIREMENTS

CSA C22.2 No. 0-10	General requirements – Canadian Electrical Code, Part II
CSA C22.2 No. 142-M1987	Process Control Equipment
CSA C22.2 No. 157-92	Intrinsically Safe and Non-Incendive Equipment (reaffirmed 1997)
CSA-C22.2 No. 60079-0:11	Explosive atmospheres – Part 0: Equipment – General requirements
CSA-C22.2 No. 60079-11:11	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”