IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx EMT 19.0011X**

Certificate history:

Status: **Current**

Issue No: 0

Date of Issue: 2020-02-27

Applicant: **Imtex Controls Limited**
Unit 4
Tenth Avenue
Deeside Industrial Park
Flintshire CH5 2UA
United Kingdom

Equipment: **Type V valve controller variants VA and VO**

Optional accessory:

Type of Protection: **Intrinsic safety "ia" and "ib"**

Marking:

Ex ia IIC T6...T4 Ga	Tamb variable see Annex. - Model V0
Ex ia IIIC T85°C ...T135 °C Db	Tamb variable see Annex. - Model V0
Ex ib IIC T6...T4 Gb	Tamb variable see Annex. - Model VA
Ex ib IIIC T85 °C ...T135 °C Db	Tamb variable see Annex. - Model VA

Approved for issue on behalf of the IECEx Certification Body: **Stephen Winsor**

Position: **Certification Manager**

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Element Materials Technology
Unit 1 Pendle Place
Skelmersdale
West Lancashire
United Kingdom

IECEx Certificate of Conformity

Certificate No.: **IECEx EMT 19.0011X**

Date of issue: 2020-02-27 Issue No: 0

Manufacturer: **Imtex Controls Limited**
Unit 4
Tenth Avenue
Deeside Industrial Park
Flintshire CH5 2UA
United Kingdom

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

GB/EMT/ExTR19.0015/00

Quality Assessment Report:

GB/SIR/QAR09.0002/08

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Type V Controller provides high accuracy position feedback and comprehensive diagnostic and testing functionality for automated process valves.The equipment is housed within a metallic enclosure which resides upon the top of a process valve. A range of different sensors and or switches may be installed within the enclosure of the equipment. There are 6 cable entry points at the base of the enclosure.

Two models of the Type V Controller are available, the VA and VO variant.

The VA features an internal programmable control board and is suitable for EPL Gb, Zone 1 IIC and Zone 21 IIIC environments. Enclosure material is constructed from stainless steel or die cast aluminium.

The VO has no internal programmable control board, only switches, sensors or transmitters and is suitable for EPL Ga, Zone 0 IIC and Zone 21 IIIC environments. Enclosure material is constructed from stainless steel only.

Cable glands shall be selected to be appropriate with the installation environment.

Model part number breakdown is fully described in the annex to this certficate.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Dielectric strength of insulation must be >500 Vac RMS between different cores of internal wiring, between all circuits and the metallic frame, and between separate intrinsically safe circuits.
2. Only suitable Ex approved IP 54 or greater rated cable glands, thread adapters and blanking plugs are permitted for use with the enclosure when installed in a hazardous environment.
3. The equipment shall be cleaned regularly with a damp or antistatic cloth to prevent a build up of dust on the equipment surfaces.
4. Antistatic hazard with non-metallic parts – the equipment shall only be cleaned with a damp or antistatic cloth.

Annex:

Annex to IECEx Certificate of Conformity IECEx EMT 19.0011X_1.pdf

Element Materials Technology,
Unit 1, Pendle Place,
Skelmersdale,
West Lancashire, WN8 9PN,
United Kingdom

Annex to IECEx Certificate of Conformity IECEx EMT 19.0011X issue No.: 0

"Special conditions for manufacture"
1. None

Routine Tests
1. None

Model part number breakdown.

Type Vx - see NOTE 1

1. CONNECTED SOLENOID (into Control Board)

I - Exi (only for 'VA' & 'VI' options)

O - No Solenoid Connected

2. CONTROL BOARD CONFIGURATION

I - Exi Set Up (No Pressure Transmitter)
VI - Exia
VA - Exib
VO - Exia
Supports single Solenoid Connection only

Y - Exi Set Up with Pressure Transducer fitted in Conduit Entry
VI - Exia
VA & VO - Cannot be offered as I.S. for this configuration
Supports single Solenoid Connection only

3. NO OF ADDITIONAL FUNCTION DEVICES

0 - No Function Item
1 - One Function Item
2 - Two Function Item
3 - Three Function Item (not Fn 70)
4 - Four Function Item (not Fn 70)
5 - Five Function Item (not Fn 70)
6 - Six Function Item (not Fn 70)

4. FUNCTION (additional items type) NOTE 2

01 - Base Model Only
No Additional Switches/Sensors

14 - DPDT Contact Mechanical Switch
up to 10 amp @ 125/250 VAC
up to 0.5 amps @ 125VDC

16 - SPDT Contact Mechanical Switch
up to 10 amp @ 125/250 VAC
up to 0.5 amps @ 125VDC

17 - SPDT Gold Contact Mechanical Switch
up to 1 amp @ 125 VAC
up to 0.5 amps @ 30VDC
Suitable for I.S. Circuits - See I.S. Parameters on Unit

25 - SPDT Reed Switch
Max Current: 3 Amps
Max Power: 100 Watts
Suitable for I.S. Circuits - See I.S. Parameters on Unit

40 - SPST/SPDT Reed Switch
Max Current: 0.15 Amps @ 30VDC
Switch Inductance: 680 µH
Suitable for I.S. Circuits - Parameters on Unit

42 - V3 Style Proximity Sensor
Op Voltages (sensor dependent) 10 to 60VDC 10 to 250VAC
Op Current (sensor dependent) 2 to 400mA
Some Sensors Suitable for I.S. Circuits
I.S. Parameters on Unit

43 - Non V3 Style Proximity Sensor
Op Voltages (sensor dependent) 10 to 60VDC 10 to 250VAC
Op Current (sensor dependent) 2 to 400mA
Some Sensors Suitable for I.S. Circuits - See I.S. Parameters on Unit

70 - POSITION TRANSMITTER -
4-20mA @ 10 - 40 VDC
monitor may include up to 6 additional switch/sensors from functions 17, 25, 40, 42 or 43 - Detailed by Feature Information
Transmitter Suitable for I.S. Circuits - Parameters on Unit

5. ENCLOSURE

S - 316SS Cover & Housing

L - 316L SS Cover & Housing

9 - High Pressure Die Cast Aluminium Cover & Housing

6. CONDUIT

Z - (6) M20 x 1.5

Y - (3) M25 x 1.5 & (3) M20 x 1.5

X - (2) M25 x 1.5 & (4) M20 x 1.5

W - (1) M25 x 1.5 & (5) M20 x 1.5

V - (6) 1/2"NPT

U - (3) 3/4" NPT & (3) 1/2"NPT

6. CONDUIT (continued)

T - (2) 3/4" NPT & (4) 1/2"NPT

S - (1) 3/4" NPT & (5) 1/2"NPT

R - (5) M20 x 1.5 (1) 1/2"NPT

Q - (3) M25 x 1.5 & (2) M20 x 1.5 (1) 1/2"NPT

P - (2) M25 x 1.5 & (3) M20 x 1.5 / (1) 1/2"NPT

N - (1) M25 x 1.5 & (4) M20 x 1.5 / (1) 1/2"NPT

M - (5) 1/2"NPT (1) M20 x 1.5

L - (3) 3/4" NPT & (2) 1/2"NPT / (1) M20 x 1.5

K - (2) 3/4" NPT & (3) 1/2"NPT / (1) M20 x 1.5

J - (1) 3/4" NPT & (4) 1/2"NPT / (1) M20 x 1.5

7. OUTPUT DRIVE

S - 2 Pin Drive

N - NAMUR Drive

8. INDICATOR

R - RED CLOSED / GREEN OPEN (ABS material)

B - BLUE CLOSED / WHITE OPEN (ABS material)

E - RED CLOSED / YELLOW OPEN (ABS material)

Y - NAVY CLOSED / YELLOW OPEN (ABS material)

C - CONTINUOUS

O - NO VISUAL INDICATOR

9. SYSTEM COMMUNICATION (Note 3)

0 - No Additional Comms (Local Operation Only)

2 - HART

10. CONTROL BOARD POWER

E - External 24VDC Power Supply - Exi Restrictions Apply

L - Loop Powered on Board AO (VI and VA only)

O - No Control Board

11. FEATURE INFORMATION

- 1XX -Ex* (ia) Feature Designator
Additional Items Dual Certified & Suitable for Gas and Dust (Note 2)

- 3XX -Ex* (ia) Feature Designator
Additional Items ATEX Certified & Suitable for Gas and Dust (Note 2)

Part Number Compilation:

VAII217SYSR2L-100

Type Designator
3rd Party Solenoid Certification
Control Board Certification Setup
No of Function
Function
Enclosure
Conduit Entry
Output Drive
Indicator
Communication
Power
Feature

NOTE 1:
The following letters should be applied to define the main control electronics board that is installed -
'I' : V-ID Monitoring Board (Exia option)
'A' : V-AID Monitor & Control Board (Exib option)
'O' : No Control Board Fitted (Exia option)
Exi Details for Board - see A190372

NOTE 2:
The exact detail of switches/sensors/transmitters fitted in the monitor is not fully specified by the basic part number.
The 'feature designator' provides a mechanism for cross-referencing to a centralised log establishing the make and model of parts fitted in a given unit. Dual Certified means unit is covered by both ATEX and IECEx certification.
Refer to A190354 for additional component characteristics

NOTE 3:
Communication relates to the way the installed unit operates with the client system and analytics application. For options available on each electronics board & certification variant, consult factory.

NOTE 4:
VARIANT 'VI' IS **NOT** CURRENTLY CERTIFIED

REV	DRAWN	DATE	CHK'D	ECO
	PT	7.10.19		19-2849
A	PT	3.11.19		19-2853

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH:
TOLERANCES:
LINEAR:
ANGULAR:

TITLE:
Type V - Master Model Description
Exi - Versions Only

Table of Ambient temperature ranges

Assembly	Ambient temperature ranges		
	Minimum ambient (°C)	Maximum ambient T6 (°C)	Maximum ambient T4 (°C)
Model VA - only control board fitted Function 01	-30	60	80
Model VA or VO - with volt-free contact switches Functions 14, 16, 17, 25, 40	-40	60	85
Model VA or VO - with proximity sensors (manufacturer: Hans Turck) Functions 42, 43 (with exception of sensor …-….-.Y1.-…../S97) Functions 42, 43 (with sensor …-….-.Y1.-…../S97)	 -25 -40	 50 50	 70 70
Model VA or VO - with proximity sensors (manufacturer: IFM) Functions 42, 43	-20	50	N/A
Model VA or VO - with proximity sensors (manufacturer: Pepperl & Fuchs) Functions 42, 43	-20	50	75
Model VA or VO - with transmitter (manufacturer: Zettlex) Function 70	-40	50	75
Note: for models fitted with more than one Function Device, the Tamb would revert to worst case e.g. Combination of VA Model with control board and transmitter fitted, Tamb -30 °C to 50 °C for T6.			

Tables of entity parameters

1.0 - <u>VA variant with only control board fitted</u>

Function Reference (see A190352):	1
Minimum Tamb Temperature for Unit:	-30 ˚C
Maximum Tamb Temperature for Unit – T6:	+60 ˚C
Maximum Tamb Temperature for Unit – T4:	+80 ˚C

ESD(+)/ESD(-) Input & Output – Standard Version	
Applicable Terminals	7(+) / 6(-) – Input / 9(+) / 8(-) – Output
Intrinsically Safe Parameter (max) - U_i	28 V
Intrinsically Safe Parameter (max) - I_i	2 A
Intrinsically Safe Parameter (max) - P_i	6 W
Intrinsically Safe Parameter (max) - L_i	0 µH
Intrinsically Safe Parameter (max) - C_i	0 nF
ESD(+)/ESD(-) Input & Output – 12V Relay Version	
Applicable Terminals	7(+) / 6(-) – Input / 9(+) / 8(-) – Output
Intrinsically Safe Parameter (max) - U_i	13.3 V
Intrinsically Safe Parameter (max) - I_i	2 A
Intrinsically Safe Parameter (max) - P_i	6 W
Intrinsically Safe Parameter (max) - L_i	0 µH
Intrinsically Safe Parameter (max) - C_i	0 nF
Auxiliary Power Input (Control Board Power Option 'E' – See A190352)	
Applicable Terminals	5(+) / 4(-)
Intrinsically Safe Parameter (max) - U_i	28 V
Intrinsically Safe Parameter (max) - I_i	120 mA
Intrinsically Safe Parameter (max) - P_i	0.84 W
Intrinsically Safe Parameter (max) - L_i	0 µH
Intrinsically Safe Parameter (max) - C_i	0 nF
Analogue Output – Loop Powered (Control Board Power Option 'L' – See A190352)	
Applicable Terminals	16(+) / 17(-)

Intrinsically Safe Parameter (max) - U_i	28 V
Intrinsically Safe Parameter (max) - I_i	120 mA
Intrinsically Safe Parameter (max) - P_i	0.84 W
Intrinsically Safe Parameter (max) - L_i	0 µH
Intrinsically Safe Parameter (max) - C_i	0 nF

Digital Output (only available for Control Board Power Option 'E' – See A190352)	
Applicable Terminals	1(-) / 2(+)
Intrinsically Safe Parameter (max) – U_o	28 V
Intrinsically Safe Parameter (max) – I_o	120 mA
Intrinsically Safe Parameter (max) – P_o	0.84 W
Intrinsically Safe Parameter (max) – L_o	25 µH
Intrinsically Safe Parameter (max) – C_o	5 nF
Digital Input (only available for Control Board Power Option 'E' – See A190352)	
Applicable Terminals	20(+) / 21(-)
Intrinsically Safe Parameter (max) – U_o	5.4 V
Intrinsically Safe Parameter (max) – I_o	1.65 mA
Intrinsically Safe Parameter (max) – P_o	2.2 mW
Intrinsically Safe Parameter (max) – L_o	50 µH
Intrinsically Safe Parameter (max) – C_o	10 nF

1.2 - V0 variant with no control board fitted.

The VO Variant of the Type V unit does not contain a Control Board. It only includes switches, sensors or transmitters as defined in drawing A190354, see section 2.0 below.

2.0 - Characteristics for Additional Electrical Equipment integrated into Type V Enclosures for Intrinsically safe equipment.

DUAL CERTIFIED COMPONENTS IECEx and ATEX

2.1 Simple Apparatus Switches
2.2 Hans Turck Sensors
2.3 Pepperl & Fuchs Sensors
2.4 Zettlex Transmitter

2.1 - Simple Apparatus Switches

2.1.1 Applicable Switch:	DPDT, Mechanical Switch
Function Reference (see A190352):	14
Intrinsically Safe Parameter (max) - Ui	28 V
Intrinsically Safe Parameter (max) - Ii	120 mA
Intrinsically Safe Parameter (max) - Pi	0.55 W
Intrinsically Safe Parameter (max) - Li	<10 µH
Intrinsically Safe Parameter (max) - Ci	<10 nF
Minimum Tamb Temperature for Unit:	-40 ˚C
Maximum Tamb Temperature for Unit – T6:	+60 ˚C
Maximum Tamb Temperature for Unit – T4:	+85 ˚C
Switch Contact Resistance (max) – for calculating potential power dissipation:	0.2 ohms
Switch Wiring	6 single cores to be not less than 0.5mm2 (min) with individual sheath diameter 2.1mm (min) / 2.3mm (max)

2.1.2 Applicable Switch:	SPDT Gold Plated Contact, Mechanical Switch
Function Reference (see A190352):	17
Intrinsically Safe Parameter (max) - U_i	28 V
Intrinsically Safe Parameter (max) - I_i	120 mA
Intrinsically Safe Parameter (max) - P_i	0.55 W
Intrinsically Safe Parameter (max) - L_i	<10 µH
Intrinsically Safe Parameter (max) - C_i	<10 nF
Minimum Tamb Temperature for Unit:	-40 ˚C
Maximum Tamb Temperature for Unit – T6:	+60 ˚C
Maximum Tamb Temperature for Unit – T4:	+85 ˚C
Switch Contact Resistance (max) – for calculating potential power dissipation:	0.2 ohms

Switch Wiring	3 single cores to be not less than 0.5mm^2 (min) with individual sheath diameter 2.1mm (min) / 2.3 mm (max) See drawing A140026 for connection detail

2.1.3 Applicable Switch:	SPDT Reed Switch
Function Reference (see A190352):	25
Intrinsically Safe Parameter (max) - Ui	28 V
Intrinsically Safe Parameter (max) - Ii	0.5 A
Intrinsically Safe Parameter (max) - Pi	5 W
Intrinsically Safe Parameter (max) - Li	10 µH
Intrinsically Safe Parameter (max) - Ci	<10 nF
Minimum Tamb Temperature for Unit:	-40 ˚C
Maximum Tamb Temperature for Unit – T6:	+60 ˚C
Maximum Tamb Temperature for Unit – T4:	+85 ˚C
Switch Contact Resistance (max) – for calculating potential power dissipation:	0.2 ohms
Switch Wire Type	Three Core – each strand not less than 0.125mm^2 CSA with individual sheath dia 1mm (min). Outer sheath 3.0mm (min) / 3.5mm (max)-

2.1.4 Applicable Switch:	SPST or SPDT Reed Switch
Function Reference (see A190352):	40
Intrinsically Safe Parameter (max) - U_i	28 V
Intrinsically Safe Parameter (max) - I_i	120 mA
Intrinsically Safe Parameter (max) - P_i	0.55 W
Intrinsically Safe Parameter (max) - L_i	680 µH
Intrinsically Safe Parameter (max) - C_i	<10 nF
Minimum Tamb Temperature for Unit:	-40 ˚C
Maximum Amb Temperature for Unit – T6:	+60 ˚C
Maximum Tamb Temperature for Unit – T4:	+85 ˚C
Switch Internal Inductance -	680 µH
Switch Contact Resistance (max) – for calculating potential power dissipation:	10 ohms

Switch Wire Type	Two or Three Core – each strand not less than 0.125mm^2 CSA with individual sheath dia 1mm (min). Outer sheath 3.0mm (min) / 3.5mm (max)-

2.2 – Hans Turck Sensors

Function additional items type	V3 Style or Non V3 Proximity Sensor
Function Reference (see A190352):	42 & 43
Ui	20 VDC
Pi	200 mW -Type Groups A, AD, G, GD, AX and GX 130 mW - Type Groups M, MD, S and SX 80 mW Type Groups K
Maximum Tamb for Unit for T6:	+50 ˚C
Maximum Tamb for Unit for T4:	+70 ˚C
Zone	1 or 2
C_i and L_i	Type Group *Typ-Gruppe* / C_i (nF) / L_i (µH) A, AD / 150 / 150 G, GD / 250 / 350
	Type Group *Typ-Gruppe* / C_i (nF) / L_i (µH) M, MD / 150 / 150 S / 250 / 350
	Type Group *Typ-Gruppe* / C_i (nF) / L_i (µH) M, MD / 150 / 150 S / 250 / 350
	Type Group *Typ-Gruppe* / C_i (nF) / L_i (µH) SX / 250 / 350

2.3 Pepperl & Fuchs Cuboidal inductive Sensors

Electrical Data (Applies to all Pepperl & Fuchs Sensor Options in this Section)

Block Type FJ, NJ, NB and NC Sensors

<table>
<tr><td>Function additional items type</td><td>V3 Style or Non V3 Proximity Sensor</td></tr>
<tr><td><table><tr><td>Type 1</td><td>Type 2</td></tr><tr><td>Ui = 16 V</td><td>Ui = 16 V</td></tr><tr><td>Ii = 25 mA</td><td>Ii = 25 mA</td></tr><tr><td>Pi = 34 mW</td><td>Pi = 64 mW</td></tr></table></td><td></td></tr>
<tr><td>Function Reference (see A190352):</td><td>42 & 43</td></tr>
<tr><td>Applicable Sensors:</td><td>Pepperl & Fuchs Cuboidal inductive Sensors</td></tr>
<tr><td>Minimum Tamb Temperature for Unit:</td><td>-20 ˚C</td></tr>
<tr><td>Maximum Tamb Temperature for Unit – T6:</td><td>+50 ˚C</td></tr>
<tr><td>Maximum Tamb Temperature for Unit – T4:</td><td>+75 ˚C</td></tr>
<tr><td>Applicable Electrical Data for T6:</td><td>Type 1 or 2 (standard is type 2 data)</td></tr>
<tr><td>Applicable Electrical Data for T4:</td><td>Type 1 or 2 (standard is type 2 data)</td></tr>
<tr><td>Zone</td><td>1 or 2</td></tr>
<tr><td>C_i and L_i</td><td><table><tr><td>types</td><td>CinF</td><td>Li µH</td></tr><tr><td></td><td></td><td></td></tr><tr><td>FJ 6-110-N...</td><td>150</td><td>110</td></tr><tr><td>FJ 7-N...</td><td>65</td><td>220</td></tr><tr><td>NCB2-F1-N0...</td><td>90</td><td>100</td></tr><tr><td>NCB2-V3-N0...</td><td>100</td><td>100</td></tr><tr><td>NCN2-F56-N1...</td><td>100</td><td>100</td></tr><tr><td>NBN3-F69-N0…</td><td>100</td><td>100</td></tr><tr><td>NBN4-V3-N0...</td><td>100</td><td>100</td></tr><tr><td>NBN4-V3-N0-Y189289</td><td>120</td><td>100</td></tr><tr><td>NBB15-U.K-N0…</td><td>110</td><td>200</td></tr><tr><td>NBB20-U.K-N0…</td><td>110</td><td>200</td></tr><tr><td>NBN30-U.K-N0…</td><td>105</td><td>300</td></tr><tr><td>NBN40-U.K-N0…</td><td>105</td><td>300</td></tr></table></td></tr>
</table>

C_i and L_i

types	CinF	Li µH
NCN4-V3-N0...	100	100
NCB15+U...+N0...	110	160
NCB40-FP-N0..	220	360
NCN15-M...-N0..	100	100
NCB20-L2-N0…	110	200
NCN20+U...+N0...	110	160
NCN30+U...+N0...	110	160
NCN40+U...+N0...	120	130
NCN40-L2-N0…	105	300
NCN50-FP-N0...	220	360

NJ 0,8-F-N...	30	50
NJ 1,5-F-N...	30	50
NJ 2,5-F-N...	40	50
NJ 2-F1-N...	30	50
NJ 2-V3-N...	40	50
NJ 3-V3-N…	40	50
NJ 4-F-N...	150	100
NJ 6-F-N	70	100
NJ 10-F-N...	85	100
NJ 15+U.+N...	140	130
NJ 15-M1.-N...	140	100
NJ 20+U.+N...	150	130
NJ 30+U.+N...	160	130
NJ 30P+U.+1N...	150	170
NJ 40+...+N...	180	130
NJ 50-FP-N...	320	360

SN Type NJ and SJ Sensors

<table>
<tr><td>Function additional items type</td><td>V3 Style or Non V3 Proximity Sensor</td></tr>
<tr><td>
<table>
<tr><td>Type 1</td><td>Type 2</td></tr>
<tr><td>Ui = 16 V</td><td>Ui = 16 V</td></tr>
<tr><td>Ii = 25 mA</td><td>Ii = 25 mA</td></tr>
<tr><td>Pi = 34 mW</td><td>Pi = 64 mW</td></tr>
</table>
</td><td></td></tr>
<tr><td>Function Reference (see A190352):</td><td>42 & 43</td></tr>
<tr><td>Applicable Sensors:</td><td>Referenced Pepperl & Fuchs Sensors</td></tr>
<tr><td>Minimum Tamb Temperature for Unit:</td><td>-20 ˚C</td></tr>
<tr><td>Maximum Tamb Temperature for Unit – T6:</td><td>+50 ˚C</td></tr>
<tr><td>Maximum Tamb Temperature for Unit – T4:</td><td>+75 ˚C</td></tr>
<tr><td>Applicable Electrical Data for T6:</td><td>Type 1 or 2 (standard is type 2 data)</td></tr>
<tr><td>Applicable Electrical Data for T4:</td><td>Type 1 or 2 (standard is type 2 data)</td></tr>
<tr><td>Zone</td><td>1 or 2</td></tr>
<tr><td>C_i and L_i</td><td>
<table>
<tr><th>type</th><th>Ci / nF</th><th>Li / uH</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>NJ 2-11-SN...</td><td>50</td><td>150</td></tr>
<tr><td>NJ 2-11-SN-G...</td><td>50</td><td>150</td></tr>
<tr><td>NJ 2-12GK-</td><td>50</td><td>150</td></tr>
<tr><td>NJ 3-18GK-</td><td>70</td><td>200</td></tr>
<tr><td>NJ 4-12GK-</td><td>70</td><td>150</td></tr>
<tr><td>NJ 5-18GK-</td><td>120</td><td>200</td></tr>
<tr><td>NJ 5-30GK-S1N...</td><td>100</td><td>200</td></tr>
<tr><td>NJ 6-22-SN...</td><td>110</td><td>150</td></tr>
<tr><td>NJ 6-22-SN-G...</td><td>110</td><td>150</td></tr>
<tr><td>NJ 6S1+U.+N...</td><td>180</td><td>150</td></tr>
<tr><td>NJ 8-18GK-</td><td>120</td><td>200</td></tr>
<tr><td>NJ 10-30GK- SN...</td><td>120</td><td>150</td></tr>
<tr><td>NJ 15-30GK-SN...</td><td>120</td><td>180</td></tr>
<tr><td>NJ 15S+U.+N...</td><td>180</td><td>150</td></tr>
<tr><td>NJ 20S+U.+N...</td><td>200</td><td>150</td></tr>
<tr><td>NJ 40-FP-SN...</td><td>370</td><td>300</td></tr>
<tr><td>SJ 2-SN...</td><td>30</td><td>100</td></tr>
<tr><td>SJ 2-S1N...</td><td>30</td><td>100</td></tr>
<tr><td>SJ 3,5-S1N...</td><td>30</td><td>100</td></tr>
<tr><td>SJ 3,5-SN...</td><td>30</td><td>100</td></tr>
</table>
</td></tr>
</table>

Slot Type SC and SJ Sensors

<table>
<tr><td>Function additional items type</td><td>V3 Style or Non V3 Proximity Sensor</td></tr>
<tr><td>
<table>
<tr><td>Type 1</td><td>Type 2</td></tr>
<tr><td>Ui = 16 V</td><td>Ui = 16 V</td></tr>
<tr><td>Ii = 25 mA</td><td>Ii = 25 mA</td></tr>
<tr><td>Pi = 34 mW</td><td>Pi = 64 mW</td></tr>
</table>
</td><td></td></tr>
<tr><td>Function Reference (see A190352):</td><td>42 & 43</td></tr>
<tr><td>Applicable Sensors:</td><td>Referenced Pepperl & Fuchs Sensors in Table Below</td></tr>
<tr><td>Minimum Tamb Temperature for Unit:</td><td>-20 ˚C</td></tr>
<tr><td>Maximum Tamb Temperature for Unit – T6:</td><td>+50 ˚C</td></tr>
<tr><td>Maximum Tamb Temperature for Unit – T4:</td><td>+75 ˚C</td></tr>
<tr><td>Applicable Electrical Data for T6:</td><td>Type 1 or 2 (standard is type 2 data)</td></tr>
<tr><td>Applicable Electrical Data for T4:</td><td>Type 1 or 2 (standard is type 2 data)</td></tr>
<tr><td>Zone</td><td>1 or 2</td></tr>
<tr><td>C_i and L_i</td><td>
<table>
<tr><th>type</th><th>Ci/nF</th><th>Li/µH</th></tr>
<tr><td>SC2-N0...</td><td>150</td><td>150</td></tr>
<tr><td>SC3,5-N0-Y...</td><td>150</td><td>150</td></tr>
<tr><td>SC3,5...-N0...</td><td>150</td><td>150</td></tr>
<tr><td>SJ 1,8-N-Y...</td><td>30</td><td>100</td></tr>
<tr><td>SJ 2,2-N...</td><td>30</td><td>100</td></tr>
<tr><td>SJ 2-N...</td><td>30</td><td>100</td></tr>
<tr><td>SJ 3,5-...-N...</td><td>50</td><td>250</td></tr>
<tr><td>SJ 3,5-H...</td><td>50</td><td>250</td></tr>
<tr><td>SJ 5-...-N...</td><td>50</td><td>250</td></tr>
<tr><td>SJ 5-K...</td><td>50</td><td>550</td></tr>
<tr><td>SJ 10-N...</td><td>50</td><td>1000</td></tr>
<tr><td>SJ 15-N...</td><td>150</td><td>1200</td></tr>
<tr><td>SJ 30-N...</td><td>150</td><td>1250</td></tr>
</table>
</td></tr>
</table>

Cylindrical Type NC and NJ Sensors

Function additional items type	V3 Style or Non V3 Proximity Sensor
<table><tr><td>Type 1</td><td>Type 2</td></tr><tr><td>Ui = 16 V</td><td>Ui = 16 V</td></tr><tr><td>Ii = 25 mA</td><td>Ii = 25 mA</td></tr><tr><td>Pi = 34 mW</td><td>Pi = 64 mW</td></tr></table>	
Function Reference (see A190352):	42 & 43
Applicable Sensors:	Referenced Pepperl & Fuchs Sensors
Minimum Tamb Temperature for Unit:	-20 ˚C
Maximum Tamb Temperature for Unit – T6:	+50 ˚C
Maximum Tamb Temperature for Unit – T4:	+75 ˚C
Applicable Electrical Data for T6:	Type 1 or 2 (standard is type 2 data)
Applicable Electrical Data for T4:	Type 1 or 2 (standard is type 2 data)
Zone	1 or 2

C_i and L_i	

type	Ci/ nF	Li/ µH
NCB1,5...M...N0...	90	100
NCB2-12GK...-N0...	90	100
NCB2-12GM...-N0...	90	100
NCN4-12GK...-N0...	95	100
NCN4-12GM...-N0...	95	100
NCB5-18GK...-N0...	95	100
NCB5-18GM...-N0...	95	100
NCN8-18GK...-N0...	95	100
NCN8-18GM...-N0...	95	100
NCB10-30GK...-N0...	105	100
NCB10-30GM...-N0...	105	100
NCN15-30GK...-N0...	110	100
NCN15-30GM...-N0...	110	100
NJ 0,2-10GM-N...	20	50
NJ 0,8-4,5-N...	30	50
NJ 0,8-5GM-N...	30	50
NJ 1,5-6,5...-N...	30	50
NJ 1,5-10GM-N-Y...	20	50
NJ 1,5-8GM-N...	30	50
NJ 1,5-8-N...	20	50
NJ 1,5-18GM-N-D...	50	60
NJ 2-11-N...	45	50
NJ 2-11-N-G...	30	50
NJ 2-12GK-N...	45	50
NJ 2-12GM-N...	30	50
NJ 2-14GM-N...	30	50
NJ 2,5-14GM-N...	30	50
NJ 4-12GK-N...	45	50
NJ 4-14GK-N...	45	50
NJ 4-12GM-N...	45	50

type	Ci/ nF	Li/ µH
NJ 4-30GM-N-200... (oscillator)	70	100
NJ 4-30GM-N-200... (amplifier)		
NJ 5-10-11-N...	70	100
NJ 5-11-N...	45	50
NJ 5-18GK-N...	70	50
NJ 5-18GK-N-150...	70	50
NJ 5-18GM-N...	70	50
NJ 6-22-N...	130	100
NJ 8-18GK-N...	70	50
NJ 8-18GK-N-150...	70	50
NJ 8-18GM-N...	70	50
NJ 10-22-N...	130	100
NJ 10-30GK...-N...	140	100
NJ 10-30GM-N...	140	100
NJ 15-30GK...-N...	140	100
NJ 15-30GK-N-150...	140	100
NJ 15-30GM-N...	140	100
NJ 25-50-N...	150	140
NJ 20-40-N...	140	140
NCB4-12GM...-N0...	120	50
NCB8-18GM...-N0...	120	50
NCB15-30GM...-N0...	120	150

2.4 - Zettlex Transmitter

Function additional item	Position Transmitter
Function Reference (see A190352):	70
Applicable Sensors:	ST-1509-V1-A ST-0907-V2-A ST-1910-V1-A ST-4312-V2-A
Intrinsically Safe Parameter (max) - U_i	28 V
Intrinsically Safe Parameter (max) - I_i	120 mA
Intrinsically Safe Parameter (max) - P_i	0.84 W
Intrinsically Safe Parameter (max) - L_i	5 µH
Intrinsically Safe Parameter (max) - C_i	0 nF
Minimum Tamb Temperature for Unit:	-40 ˚C
Maximum Tamb Temperature for Unit – T6:	+50 ˚C
Maximum Tamb Temperature for Unit – T4:	+75 ˚C
Zone	1 or 2

Manufacturer's Documents			
Title:	Drawing No.:	Rev. Level:	Date:
Type V – Master Model Description Exi – Versions Only	A190352-IS	A	2019-11-03
Title plate IECEx / ATEX Unit	A160225	G	2020-01-24
Installation, Operating and Maintenance Type V – IECEx/ATEX I.S. Version (2 sheets)	A190379-V-IOM-003-IS	D	2020-01-24
Type V Controller – General Layout	J100479	D	2019-11-18
VA Assembly w/ 2x NJ2-V3-N (2 sheets)	VAII242SZSR2L3OO	A	2019-11-18
Type VO Controller w/ 4x Reed Switch (2 sheets)	VOOI425SZSR0O1SW	-	2019-11-18
Control Board Intrinsically Safe Information – Type VA and VO variants (4 sheets)	A190372	D	2019-11-08
Characteristics for Additional Electrical Equipment Integrated Into Type V Enclosure – Intrinsically Safe Reference Document (16 sheets)	A190354	A	2019-10-28

* Denotes information not provided by manufacturer

Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.