A190325 – Characteristics for Electrical Equipment integrated Into SLR Enclosure - Intrinsically Safe Reference Document

CONTENTS

INTRODUCTION

This document gives the detailed electrical information on all switch/sensor/transmitter options that will be used within the SLR Enclosure under the Intrinsically Safe certification for the unit. Where appropriate, the document reviews the applicable component certification for the equipment and reproduces the appropriate electrical information from the certificate or guides the user to the relevant section of the applicable certificate.

The document enables the user to identify the appropriate operating and electrical information for an electrical component when fitted within the SLR enclosure and hence the important user information that should be reproduced on the unit labels (A160215 and A160216).

NOTE: Max Temperatures for the SLR enclosure with the selected sensor are always significantly lower than the sensor in isolation to prevent the effect of component heating causing issues within the enclosure.

Where multiple Power options are available for a given ambient and T class, apply the LOWEST applicable power.

The following information applies per switch or equipment.

1. DUAL CERTIFIED EQUIPMENT

All the electrical options in this section are certified for both ATEX and IECEx applications.

1.1 - Simple Apparatus Switches – For Gas and Dust Applications

Applicable Switch:	SPDT Gold Plated Contact, Mechanical Switch
Function Reference (see A190322):	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	0 µH
Intrinsically Safe Parameter (max) - C_i	0 nF
Minimum Amb Temperature for SLR Unit:	-40˚C
Maximum Amb Temperature for SLR Unit – T4:	+70˚C
Maximum Amb Temperature for SLR Unit – T115˚C:	+70˚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) / 2.3mm (max) See drawing A140026 for connection detail
Unit Marking/Certification	Ex II 2 GD Ex ia IIC T4 Gb Ex ia IIIC T135 ˚C Db
Label Variant to Use:	A160215-1

Applicable Switch:	SPST or SPDT Reed Switch
Function Reference (see A190322):	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	0 µH
Intrinsically Safe Parameter (max) - C_i	0 nF
Minimum Amb Temperature for SLR Unit:	-40˚C
Maximum Amb Temperature for SLR Unit – T4:	+70˚C
Maximum Amb Temperature for SLR Unit – T135˚C:	+70˚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)-

Unit Marking/Certification	Ex II 2 GD Ex ia IIC T4 Gb Ex_ia IIIC T135 ˚C Db
Label Variant to Use:	A160215-1

1.2 - Sensors Certified For Gas and Dust Applications

1.2.1 - Hans Turck Sensors

Reference Certificate:	KEMA 02ATEX1090X – Issue 6 (May 2013) IECEx KEM 06.0036X - Issue 3 (May 2013)
Standards that Apply to Certificates	EN 60079-0 : 2012 EN 60079-11 : 2012 EN 60079-26 : 2007 IEC 60079-0 : 2011 IEC 60079-11 : 2011 IEC 60079-26 : 2006
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	Verify ambient temperature range – see section 15 in certificate.
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (IECEx)	Standard Ambient temperature range - 25˚C to +70 ˚C but check in Table 15.3 of certificate see below.
Function Reference (see A190322):	42 & 43
Applicable Sensors:	As Referenced in IECEx KEM 06.0036X
Ui	20 VDC
Pi	Type Groups A, AD, G, GD, AX and GX – 200mW Type Groups M, MD, S and SX – 130mW Type Groups K – 80mW
Minimum Amb Temperature for SLR Unit:	Sensor Dependent Refer To IECEx KEM 06.0036X
Maximum Amb Temperature for SLR Unit – T6/T 95 ˚C:	+60˚C
Maximum Amb Temperature for SLR Unit – T4/T 115 ˚C:	+70˚C
Applicable Electrical Data:	Sensor Dependent Refer To IECEx KEM 06.0036X –T6 data only, regardless of unit T rating
Zone	1 or 2
Unit Marking/Certification	Ex II 2 GD Ex ia IIC T6 / T4 Gb Exia IIIC T95˚C / T115˚C Db

Applicable Label	A160215-1

Ci & Li

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

From KEMA 02ATEX1090X / IECEx KEM 06.0036X.

1.3 Sensors Certified for Gas Only Applications

1.3.1 Pepperl & Fuchs Sensors

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

Type 1	Type 2
Ui = 16 V	Ui = 16 V
Ii = 25 mA	Ii = 25 mA
Pi = 34 mW	Pi = 64 mW

Block Type FJ, NJ, NB and NC Sensors

Reference Certificate:	PTB 00ATEX2032X – Suppl 5 (Nov 2008) Fj...,NJ... & NC... IECEx PTB 11.0021X - Issue 0 (April 2011) FJ, NJ, & NC
Standards that Apply to Certificates	EN 60079-0 : 2006 EN 60079-11 : 2007 EN 60079 -26 : 2007 IEC 60079-0 : 2004 IEC 60079-11 : 2006 IEC 60079-26 : 2006
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	Verify ambient temperature range – see table below.
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (IECEx)	Verify ambient temperature range – see table below.
Function Reference (see A190322):	42 & 43
Applicable Sensors:	Referenced Pepperl & Fuchs Sensors in Table Below
Minimum Amb Temperature for SLR Unit:	-20˚C
Maximum Amb Temperature for SLR Unit – T6:	+60˚C
Maximum Amb Temperature for SLR Unit – T4:	+85˚C
Applicable Electrical Data for T6:	Type 1 or 2
Applicable Electrical Data for T4:	Type 1 or 2
Zone	1 or 2
Unit Marking/Certification	Ex II 2 G Ex ia IIC T6 / T4 Gb
Label Variant to Use:	A160215-2

types	CinF	Li µH
FJ 6-110-N...	150	110
FJ 7-N...	65	220
NCB2-F1-N0...	90	100
NCB2-V3-N0...	100	100
NCN2-F56-N1...	100	100
NBN3-F69-N0…	100	100
NBN4-V3-N0...	100	100
NBN4-V3-N0-Y189289	120	100
NBB15-U.K-N0…	110	200
NBB20-U.K-N0…	110	200
NBN30-U.K-N0…	105	300
NBN40-U.K-N0…	105	300
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

Cat 2/ Zone 1 table

Table of Max Permissible Temperatures, Capacitance and Inductance Values for Referenced Sensors –Group II Equipment – Zone 1 (Gb) – Refer to PTB 00ATEX2032X & IECEx PTB 11.0021X

SN Type NJ and SJ Sensors

Reference Certificate:	PTB 00ATEX2049X – Suppl 2 (Nov 2011) IECEx PTB 11.0092X – Issue 0 (Nov 2011)
Standards that Apply to Certificates	EN 60079-0 : 2009 EN 60079-11 : 2012 EN 60079 -26 : 2007 IEC 60079-0 : 2004 IEC 60079-11 : 2006 IEC 60079-26 : 2006
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	Verify ambient temperature range – see table below.
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (IECEx)	Verify ambient temperature range – see table below.
Function Reference (see A190322):	42 & 43
Applicable Sensors:	Referenced Pepperl & Fuchs Sensors in Table Below
Minimum Amb Temperature for SLR Unit:	-20˚C
Maximum Amb Temperature for SLR Unit – T6:	+60˚C
Maximum Amb Temperature for SLR Unit – T4:	+85˚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
Unit Marking/Certification	Ex II 2 G Ex ia IIC T6 / T4 Gb
Applicable Label	A160215-2

type	**Ci / nF**	**Li / µH**
NJ 2-11-SN...	50	150
NJ 2-11-SN-G...	50	150
NJ 2-12GK-SN...	50	150
NJ 3-18GK-S1N...	70	200
NJ 4-12GK-SN...	70	150
NJ 5-18GK-SN...	120	200
NJ 5-30GK-S1N...	100	200
NJ 6-22-SN...	110	150
NJ 6-22-SN-G...	110	150
NJ 6S1+U.+N...	180	150
NJ 8-18GK-SN...	120	200
NJ 10-30GK-SN...	120	150
NJ 15-30GK-SN...	120	180
NJ 15S+U.+N...	180	150
NJ 20S+U.+N...	200	150
NJ 40-FP-SN...	370	300
SJ 2-SN...	30	100
SJ 2-S1N...	30	100
SJ 3,5-S1N...	30	100
SJ 3,5-SN...	30	100

Category 2 data from ATEX Certificate

Table of Max Permissible Temperatures, Capacitance and Inductance Values for Referenced Sensors –Group II Equipment – Zone 1 (Gb) – Refer to PTB 00ATEX2049X & IECEx PTB 11.0092X

Note

Slot Type SC and SJ Sensors

Reference Certificate:	PTB 99ATEX2219X – Suppl 2 (Nov 2011) IECEx PTB 11.0091X - – Issue 0 (Nov 2011)
Standards that Apply to Certificates	EN 60079-0 : 2009 EN 60079-11 : 2012 EN 60079 -26 : 2007 IEC 60079-0 : 2004 IEC 60079-11 : 2006 IEC 60079-26 : 2006
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	Verify ambient temperature range – see table below.
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (IECEx)	Verify ambient temperature range – see table below.
Function Reference (see A190322):	42 & 43
Applicable Sensors:	Referenced Pepperl & Fuchs Sensors in Table Below
Minimum Amb Temperature for SLR Unit:	-20˚C
Maximum Amb Temperature for SLR Unit – T6:	+60˚C
Maximum Amb Temperature for SLR Unit – T4:	+85˚C
Applicable Electrical Data for T6:	Type 1 or 2
Applicable Electrical Data for T4:	Type 1 or 2
Zone	1 or 2
Unit Marking/Certification	Ex II 2 G Ex ia IIC T6 / T4 Gb
Applicable Label	A160215-2

type	**Ci/nF**	**Li/µH**
SC2-N0...	150	150
SC3,5-N0-Y...	150	150
SC3,5...-N0...	150	150
SJ 1,8-N-Y...	30	100
SJ 2,2-N...	30	100
SJ 2-N...	30	100
SJ 3,5-...-N...	50	250
SJ 3,5-H...	50	250
SJ 5-...-N...	50	250
SJ 5-K...	50	550
SJ 10-N...	50	1000
SJ 15-N...	150	1200
SJ 30-N...	150	1250

Category 2

Table of Max Permissible Temperatures, Capacitance and Inductance Values for Referenced Sensors –Group II Equipment – Zone 1 (Gb) – Refer to PTB 00ATEX2219X & IECEx PTB 11.0091X

Cylindrical Type NC and NJ Sensors

Reference Certificate:	PTB 00ATEX2048X - Suppl 4 (May 2011) IECEx PTB 11.0037X – Issue 1 (Feb 2013)
Standards that Apply to Certificates	EN 60079-0 : 2009 EN 60079-11 : 2012 EN 60079 -26 : 2007 IEC 60079-0 : 2004 IEC 60079-11 : 2006 IEC 60079-26 : 2006
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	Verify ambient temperature range – see table below.
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (IECEx)	Verify ambient temperature range – see table below.
Function Reference (see A190322):	42 & 43
Applicable Sensors:	Referenced Pepperl & Fuchs Sensors as per table below (extract from Table 2 - IECEx PTB 11.0037X)
Minimum Amb Temperature for SLR Unit:	-20˚C
Maximum Amb Temperature for SLR Unit – T6:	+60˚C
Maximum Amb Temperature for SLR Unit – T4:	+85˚C
Applicable Electrical Data for T6:	Type 1 or 2
Applicable Electrical Data for T4:	Type 1 or 2
Zone	1 or 2
Unit Marking/Certification	Ex II 2 G Ex ia IIC T6 / T4 Gb
Applicable Label	A160215-2

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

1.3.2 - Zettlex Transmitter

Reference Certificate:	FTZU 09ATEX0221X – Suppl 2 (Aug 2013) ST-1509-V1-A, ST-0907-V2-A & ST-1910-V1-A IECEx FTZ 15.0003X – Issue 0 (June 2015) ST-1509-V1-A, ST-0907-V2-A, ST-1910-V1-A & ST-4312-V2-A
Standards that Apply to Certificates	EN 60079-0 : 2012 EN 60079-11 : 2012 EN 60079-26 : 2007 IEC 60079-0 : 2011 IEC 60079-11 : 2011 IEC 60079-26 : 2006
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	The programming and calibration process shall be carried out only in a non-hazardous area.
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (IECEx)	The programming and calibration process shall be carried out only in a non-hazardous area.
Function Reference (see A190322):	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 Amb Temperature for SLR Unit:	-40˚C
Maximum Amb Temperature for SLR Unit – T4:	+60˚C
Zone	1 or 2
Unit Marking/Certification	Ex II 2 G Ex ia IIC T4 Gb
Applicable Label	A160215-2

2. ATEX ONLY CERTIFICATES

2.1 - Sensors Certified for Gas and Dust Applications

2.1.1 - Pepperl & Fuchs Sensors

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

Type 1	Type 2
Ui = 16 V	Ui = 16 V
Ii = 25 mA	Ii = 25 mA
Pi = 34 mW	Pi = 64 mW

Reference Certificate:	All Gas Only Certificates ZELM 03ATEX0128X – Suppl 2 (Apr 2005)
Standards that Apply to Certificates	EN 61241-0 : 2002 IEC 61241-11 : 2002
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	Verify ambient temperature range – see table below. The sensor supply must be made by separately certified intrinsically safe circuits. Because of possible ignition hazards which can arise from faults and/or transient circulating currents in the potential equalization system, galvanic isolation in the supply and signal circuits is preferred. Associated apparatus without galvanic isolation may only be used whether appropriate requirements according to IEC 60079-14 are met. CJ40-FP-N-… , NCN40+U…+N0 , SJ30-N… , NCB40-FP-N0… , NCN50-FP-N0… , NJ50-FP-N… , NJ40-FP-SN… are not to be used in applications where high charges are likely to be present (e.g. film material production, dust conveyors, machine frictional processes).
Function Reference (see A190322):	42 & 43
Applicable Sensors:	NC…NJ…SC…SJ… Sensors on ZELM 03ATEX0128X – as table below
Minimum Amb Temperature for SLR Unit:	-20˚C
Maximum Amb Temperature for SLR Unit – T6 /T 76 ˚C:	+55°C
Maximum Amb Temperature for SLR Unit – T4/T 103 ˚C:	+80°C
Applicable Electrical Data for T6:	Type 1 or 2
Applicable Electrical Data for T4:	Type 1 or 2
Zone	1 or 2
Unit Marking/Certification	Ex II 2 GD Ex ia IIC T6 / T4 Gb Ex ia IIIC T76 ˚C / T103 ˚C Db
Applicable Label	A160215-3

type	Ci/ nF	Li/ µH	T_{Umin} / °C	type	Ci/ nF	Li/ µH	T_{Umin} / °C
CBN2-F46-N...	45	0	- 25	NJ 2-V3-N...	40	50	- 25
CCN2-F46A-N...	45	0	- 25	NJ 15+U.+N...	140	130	- 25
CBN5-F46-N...	45	0	- 25	NJ 20+U.+N...	150	130	- 25
CCN5-F46A-N...	45	0	- 25	NJ 30+U.+N...	160	130	- 25
CBN10-F46-N...	45	0	- 25	NJ 40+...+N...	180	130	- 25
CCN10-F46A-N...	45	0	- 25	NJ 50-FP-N...	320	360	- 25
CCB10-30GM...-N...	155	0	- 25	SC2-N0...	150	150	- 25
CJ 1-12GK-N...	60	0	- 25	SC3,5-N0-Y...	150	150	- 25
CJ 2-18GK-N...	60	0	- 25	SC3,5...-N0...	150	150	- 25
CJ 4-12GK-N...	60	0	- 25	SJ 1,8-N-Y...	30	100	- 25
CJ 6-18GK-N...	60	0	- 25	SJ 2,2-N...	30	100	- 25
CJ 15-40-N...	140	0	- 25	SJ 2-N...	30	100	- 25
CJ 40-FP-N-...	145	0	- 25	SJ 3,5-...-N...	50	250	- 25
NCB1,5...M...N0...	90	100	- 25	SJ 5-...-N...	50	250	- 25
NCB2-12GM...-N0...	90	100	- 25	SJ 5-K...	50	550	- 25
NCN4-12GM...-N0...	95	100	- 25	SJ 10-N...	50	1000	- 25
NCB5-18GM...-N0...	95	100	- 25	SJ 15-N...	150	1200	- 25
NCN8-18GM...-N0...	95	100	- 25	SJ 30-N...	150	1250	- 25
NCB10-30GM..-N0...	105	100	- 25	NJ 2-11-SN...	50	150	- 40
NCN15-30GM...-N0...	110	100	- 25	NJ 2-11-SN-G...	50	150	- 40
NJ 1,5-6,5...-N	30	50	- 25	NJ 2-12GK-SN...	50	150	- 40
NJ 1,5-8-N...	20	50	- 25	NJ 3-18GK-S1N...	70	200	- 25
NJ 2-11-N...	45	50	- 25	NJ 4-12GK-SN...	70	150	- 40
NJ 2-11-N-G...	30	50	- 25	NJ 5-18GK-SN...	120	200	- 40
NJ 5-11-N...	45	50	- 25	NJ 5-30GK-S1N...	100	200	- 25
NJ10-22-N...	130	100	- 25	NJ 6-22-SN...	110	150	- 40
NJ10-22-N-E93-Y106925	130	100	- 40	NJ 6-22-SN-G...	110	150	- 40
NJ10-22-N-E93-Y30629	130	100	- 25	NJ 6S1+U.+N...	180	150	- 40
NJ10-22-N-E93-Y52737	130	100	- 25	NJ 8-18GK-SN...	120	200	- 40
NCB2-F1-N0...	90	100	- 25	NJ 10-30GK-SN...	120	150	- 40
NCB2-V3-N0...	100	100	- 25	NJ 15-30GK-SN...	120	180	- 40
NCN4-V3-N0...	100	100	- 25	NJ 15S+U.+N...	180	150	- 40
NCB15+U...+N0...	110	160	- 25	NJ 20S+U.+N...	200	150	- 40
NCB40-FP-N0..	220	360	- 25	NJ 40-FP-SN...	370	300	- 40
NCN15-M...-N0..	100	100	- 25	SJ 2-SN...	30	100	- 40
NCN20+U...+N0...	110	160	- 25	SJ 2-S1N...	30	100	- 25
NCN30+U...+N0...	110	160	- 25	SJ 3,5-S1N...	30	100	- 25
NCN40+U...+N0...	120	130	- 25	SJ 3,5-SN...	30	100	- 40
NCN50-FP-N0...	220	360	- 25				

Table of Min Permissible Temperatures, Capacitance and Inductance Values for Applicable Sensors – Group II Equipment – Zone 1 (Db) – Refer to ZELM 03ATEX0128X

2.1.2 - IFM Sensors

Reference Certificate:	PTB 01ATEX2191 – Suppl 3 (June 2012) BVS 04ATEX E153 – Suppl 2 (May 2012)
Standards that Apply to Certificates	EN 60079-0 : 2009 (PTB Cert Only) EN 60079-11 : 2012 EN 60079 -26 : 2007 (PTB Cert Only) IEC 60079-0 : 2011 (BVS Cert Only)
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (ATEX)	None
Function Reference (see A190322):	42 & 43
Applicable Sensors:	As Table Below
Minimum Amb Temperature for SLR Unit:	-20˚C
Maximum Amb Temperature for SLR Unit – T6/T 90 ˚C:	+60˚C
Applicable Electrical Data for T6:	As Below
Zone	1 or 2
Unit Marking/Certification	Ex II 2 GD Ex ia IIC T6 Gb Ex ia IIIC T90 ˚C Db
Applicable Label	A160215-3

Electrical Data: Voltage Ui DC 15 V / Current Ii 50 mA / Power Pi 120 mW

Type	C_i	L_i
NT5001	80 nF	70 µH
NE5001	80 nF	70 µH
NF5001	140 nF	340 µH
NF5002	140 nF	340 µH
NF5003	140 nF	130 µH
NF5004	140 nF	130 µH
NG5001	145 nF	45 µH
NG5002	145 nF	45 µH
NG5003	155 nF	50 µH
NG5004	155 nF	50 µH
NI5001	145 nF	140 µH
NI5002	145 nF	140 µH
NI5003	145 nF	110 µH
NI5004	145 nF	110 µH
NN5001	110 nF	135 µH
NN5002	110 nF	135 µH
NS5002	80 nF	110 µH

Table of Capacitance and Inductance Values for Referenced Sensors –Group II Equipment – Zone 1 – (Gb Db) - Refer to PTB 01ATEX2191 & BVS 04ATEXE153

3. IECEx ONLY CERTIFICATES

3.1 - Sensors Certified for Gas and Dust Applications

3.1.1 - IFM Sensors

Reference Certificate:	IECEx BVS 06.0003 – Issue 4 (Nov 2013)
Standards that Apply to Certificates	IEC 60079-0 : 2011 IEC 60079-11 : 2011 IEC 60079 -26 : 2006
Certificate Special Conditions relevant to this Application (if not covered by the SLR Enclosure and Standardised Labelling) - (IECEx)	None
Function Reference (see A190322):	42 & 43
Applicable Sensors:	As Table Below
Minimum Amb Temperature for SLR Unit:	-20˚C
Maximum Amb Temperature for SLR Unit – T6/T 90 ˚C:	+60˚C
Applicable Electrical Data for T6:	As Below
Zone	1 or 2
Unit Marking/Certification	Ex II 2 GD Ex ia IIC T6 Gb Ex ia IIIC T90 ˚C Db
Applicable Label	A160215-4

Types N*50*A and NN5013, NN5017, NN5018, N*5002.

N95001 & KI5030 are not included as part of this certificate.

Electrical Data: Voltage Ui DC 15 V / Current Ii 50 mA / Power Pi 120 mW

Order Code	Ci [nF]	Li [µH]
NF500A	210	145
NF501A	210	115
NG500A	200	85
NG501A	200	190
NI501A	230	210
NM500A	250	450
NM501A	220	710
NN5013	140	130
NN5017	140	130
NN5018	140	135
NF5002	140	340
NG5002	145	45
NI5002	145	140
NS5002, 09	80	110