LIMIT SWITCH BOXES
Series SIB

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IT

Istruzioni di sicurezza per l'installazione in area pericolosa

Sigla dei modelli applicabili: limit switch box serie SI _ _ _ _ _ _-_ (_ identifica diverse opzioni di configurazione corpo, tipo switch, quantità, tipo morsetti, colore, ingressi cavi).
Le istruzioni che seguono sono applicabili alle apparecchiature che posseggono la certificazione ATEX n°: **03ATEX 135107X**
1) I Limit switch box serie SI _ _ _ _ _ _-_ (_ identifica diverse opzioni di configurazione corpo, tipo switch, quantità, tipo morsetti, colore, ingressi cavi).
Possono essere installati in area pericolosa con presenza di gas, polveri, vapori e nebbie infiammabili gruppo IIC e con classi di temperatura T4,T5,T6. Secondo quanto scritto nella tabella seguente:

1a) Categoria dell'apparato 2 G, identificazione EX : II 2 G EEx ia IIC T6

Valutazione del circuito di alimentazione Tipo Intrinsic Safety Valori massimi

Type 1	Type 2	Type 3	Type 4
U_i = 16 V	U_i = 16 V	U_i = 16 V	U_i = 16 V
I_i = 25 mA	I_i = 25 mA	I_i = 52 mA	I_i = 76 mA
P_i = 34 mW	P_i = 64 mW	P_i = 169 mW	P_i = 242 mW

Nella tabella sono mostrati, in funzione della assegnazione del tipo al circuito connesso, il legame alla massima temperatura superficiale e al classe di temperatura così come la reattanza interna per i tipi di limit switch box indicati.

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Type 1			Type 2			Type 3			Type 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_20	NJ4-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_24	NJ2-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_59	NCB2-12GK35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_61	NCN4-12GK35-N0	95	100	73	88	100	69	84	100	51	66	80	39	54	61

1b) Categoria dell'apparato 2 G/D , identificazione EX : II 2 G/D EEx ia IIC T6

Nella tabella sono mostrati, in funzione della assegnazione del tipo al circuito connesso, il legame alla massima temperatura superficiale e al classe di temperatura così come la reattanza interna per i tipi di limit switch box indicati.

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Type 1			Type 2			Type 3			Type 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_28	NJ2-11N-G	30	50	76	91	100	73	88	100	62	77	81	54	63	63
SI_30	NCB2-12GM35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_36	NJ5-11-N-G	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_37	NCN4-12GM35-N0	95	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_39	NJ2-12GK-SN	50	150	73	88	100	69	84	100	51	66	80	39	54	61
SI_50	NJ2-11SN-G	50	150	76	91	100	73	88	100	62	77	81	54	63	63
SI_60	SJ-3.5-N	50	250	73	88	100	66	81	100	45	60	89	30	45	74
SI_62	SJ-3.5-SN	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_63	SJ-3.5-S1N	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_68	NJ5-11-N	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_69	NJ2-11-N	45	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_70	NJ2-V3-N	40	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_84	NJ2-11-SN	50	150	73	88	100	66	81	100	45	60	89	30	45	74
SI_86	NJ4-12GK-SN	70	150	73	88	100	69	84	100	51	66	80	39	54	61

Incrociare i rating di funzionamento esposti con le temperature di funzionamento dei box riportate nei manuali di installazione e uso.
2) L'installazione dovrà essere eseguita in accordo alle normative applicabili e da personale opportunamente addestrato.
3) Questa apparecchiatura non può essere riparata dall'utilizzatore.
4) Se sussiste la possibilità che l'apparecchiatura possa venire a contatto con sostanze aggressive, è responsabilità dell'utilizzatore prendere le necessarie precauzioni per prevenire eventuali danni e assicurare che il grado di protezione non venga compromesso.
Sostanze aggressive - es. Acidi, liquidi o gas, che possono attaccare l'housing del box.
5) Si dovrà osservare la seguente precauzione: Potrebbero, in rarissime occasioni, verificarsi sorgenti potenziali di innesco dovute a scintille causate da urti o sfregamenti. Questo deve essere tenuto in considerazione quando l'apparecchio è installato in area che richiede apparecchiature di gruppo II, categoria 2 G/D.

GB | ⟨Ex⟩

Safety instruction to hazardous area installation

Model numbers covered: limit switch box series SI_ _ _ _ _ _-_ (_ indicates options in housing configuration, switches, switches quantity, terminal strip, box colour, cable entries).

The following instructions apply to equipment covered by ATEX certificate number **03ATEX 135107X**

1) The SI limit switch box series may be used in an hazardous area with flammable gases, vapours, dust and mist, group IIC, protection mode EEx ia with the following temperature classes T4,T5,T6.

1a) Device category 2G, EX identification ⟨Ex⟩ II 2 G EEx ia IIC T6

Evaluation and supply circuit Type Intrinsic Safety Max value

Type 1	Type 2	Type 3	Type 4
U_i = 16 V	U_i = 16 V	U_i = 16 V	U_i = 16 V
I_i = 25 mA	I_i = 25 mA	I_i = 52 mA	I_i = 76 mA
P_i = 34 mW	P_i = 64 mW	P_i = 169 mW	P_i = 242 mW

The assignment of the type of the connected circuit to the maximum permissible temperature and the temperature class as well as the effective internal reactances for the individual types of limit switch boxes are shown in the following table:

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Type 1			Type 2			Type 3			Type 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_20	NJ4-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_24	NJ2-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_59	NCB2-12GK35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_61	NCN4-12GK35-N0	95	100	73	88	100	69	84	100	51	66	80	39	54	61

1b) Device category 2GD, EX identification ⟨Ex⟩ II 2 G/D EEx ia IIC T6

The assignment of the type of the connected circuit to the maximum permissible temperature and the temperature class as well as the effective internal reactances for the individual types of limit switch boxes are shown in the following table:

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Type 1			Type 2			Type 3			Type 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_28	NJ2-11N-G	30	50	76	91	100	73	88	100	62	77	81	54	63	63
SI_30	NCB2-12GM35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_36	NJ5-11-N-G	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_37	NCN4-12GM35-N0	95	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_39	NJ2-12GK-SN	50	150	73	88	100	69	84	100	51	66	80	39	54	61
SI_50	NJ2-11SN-G	50	150	76	91	100	73	88	100	62	77	81	54	63	63
SI_60	SJ-3.5-N	50	250	73	88	100	66	81	100	45	60	89	30	45	74
SI_62	SJ-3.5-SN	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_63	SJ-3.5-S1N	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_68	NJ5-11-N	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_69	NJ2-11-N	45	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_70	NJ2-V3-N	40	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_84	NJ2-11-SN	50	150	73	88	100	66	81	100	45	60	89	30	45	74
SI_86	NJ4-12GK-SN	70	150	73	88	100	69	84	100	51	66	80	39	54	61

Cross the temperature rating shown with the limit switch box rating shown in limit switch box installation & operating manual.

2) Suitably trained personnel shall carry out installation in accordance with applicable code of practice

3) The user should not repair this equipment.

4) If the equipment is likely to come into contact with aggressive substances, it is responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.
Agressive substances – es. Acidic liquids or gases that may attack the switch box housing.

5) The following precaution must be observed:
The metallic alloy used for the enclosure, in the event of a rare accident, could cause ignition sources due to impact or friction (sparks may occur). This shall be considered when the box is installed in group II category 2 G/D areas.

DE

Sicherheitsinstruktion für Geräte in explosionsgefährdeten Bereichen

Modele mit der Bezeichnung SI_ _ _ _ _ _-_ (_ zeigen Optionen von Schaltern, Schalter Qualitäten, Klemmleisten, Gehäusefarben und Kabeleingängen).

Die folgende Instruktion gehört zu Geräten mit der ATEX Zertifikat Nummer **03ATEX 135107X**

1) SI Endschalterboxen können in explosionsgefährdeten Bereichen mit brennbaren Gasen, Dämpfen und Stäuben der Gruppe IIC bei folgenden Temperaturklassen eingesetzt werden T4,T5,T6.

1a) Gerätekategorie 2G, EX Kennzeichnung II 2 G EEx ia IIC T6

Evaluation and supply circuit Type Intrinsic Safety Max value

Typ 1	Typ 2	Typ 3	Typ 4
U_i = 16 V	U_i = 16 V	U_i = 16 V	U_i = 16 V
I_i = 25 mA	I_i = 25 mA	I_i = 52 mA	I_i = 76 mA
P_i = 34 mW	P_i = 64 mW	P_i = 169 mW	P_i = 242 mW

The assignment of the type of the connected circuit to the maximum permissible temperature and the temperature class as well as the effective internal reactances for the individual types of limit switch boxes are shown in the following table:

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Typ 1			Typ 2			Typ 3			Typ 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_20	NJ4-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_24	NJ2-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_59	NCB2-12GK35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_61	NCN4-12GK35-N0	95	100	73	88	100	69	84	100	51	66	80	39	54	61

1b) Gerätekategorie 2GD, EX Kennzeichnung II 2 G/D EEx ia IIC T6

The assignment of the type of the connected circuit to the maximum permissible temperature and the temperature class as well as the effective internal reactances for the individual types of limit switch boxes are shown in the following table:

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Type 1			Type 2			Type 3			Type 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_28	NJ2-11N-G	30	50	76	91	100	73	88	100	62	77	81	54	63	63
SI_30	NCB2-12GM35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_36	NJ5-11-N-G	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_37	NCN4-12GM35-N0	95	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_39	NJ2-12GK-SN	50	150	73	88	100	69	84	100	51	66	80	39	54	61
SI_50	NJ2-11SN-G	50	150	76	91	100	73	88	100	62	77	81	54	63	63
SI_60	SJ-3.5-N	50	250	73	88	100	66	81	100	45	60	89	30	45	74
SI_62	SJ-3.5-SN	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_63	SJ-3.5-S1N	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_68	NJ5-11-N	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_69	NJ2-11-N	45	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_70	NJ2-V3-N	40	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_84	NJ2-11-SN	50	150	73	88	100	66	81	100	45	60	89	30	45	74
SI_86	NJ4-12GK-SN	70	150	73	88	100	69	84	100	51	66	80	39	54	61

Cross the temperature rating shown with the limit switch box rating shown in limit switch box installation & operating manual.

2) Die Installation dieser Geräte darf nur durch entsprechend geschultes Personal vorgenommen werden.

3) Der Betreiber darf an den Geräten keine Reparaturen vornehmen.

4) Wenn die Möglichkeit besteht, dass die Geräte in Kontakt mit aggressiven Substanzen kommen, ist es in der Verantwortung des Betreibers sicherzustellen, dass die nötigen Schutz- und Vorsichtsmaßnamen getroffen werden, damit die Geräte nicht in Mitleidenschaft gezogen werden.

Agressive Substanzen – Wie. Säuren, Laugen oder Gase die Metall angreifen .

5) Die folgenden Vorsichtsmassnahmen müssen berücksichtigt werden:

Die metallische Legierung des Gehäuses, könnte in seltenen Ausnahmefällen, bei Schlägen oder Reibung die Ursache von Funken sein. Das muss berücksichtigt werden, wenn die Endschalterbox in Zonen der Gruppe II Kategorie 2G/D installiert wird.

FR

Instructions de sécurité pour les installations en zone dangereuse

Codes des modèles utilisables SI_ _ _ _ _ _-_ avec diverses options de micro interrupteurs, quantité de micro interrupteurs installée, borniers, couleurs, presse-étoupes.

Les instructions suivantes concernent les appareillages qui ont la certification ATEX numéro **03ATEX 135107X**

1) Les boîtiers fin de course de la série SI peuvent être installées dans les zones dangereuses avec présence de gaz, de vapeur ou de poussières inflammables du groupe IIC et avec les classes de température T4,T5,T6 comme de la table suivante :

1a) Catégorie de dispositif 2G, EX identification Ⓔx II 2 G EEx ia IIC T6

Evaluation and supply circuit Type Intrinsic Safety Max value

Type 1	Type 2	Type 3	Type 4
U_i = 16 V	U_i = 16 V	U_i = 16 V	U_i = 16 V
I_i = 25 mA	I_i = 25 mA	I_i = 52 mA	I_i = 76 mA
P_i = 34 mW	P_i = 64 mW	P_i = 169 mW	P_i = 242 mW

The assignment of the type of the connected circuit to the maximum permissible temperature and the temperature class as well as the effective internal reactances for the individual types of limit switch boxes are shown in the following table:

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Type 1			Type 2			Type 3			Type 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_20	NJ4-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_24	NJ2-12GK-N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
SI_59	NCB2-12GK35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_61	NCN4-12GK35-N0	95	100	73	88	100	69	84	100	51	66	80	39	54	61

1b) Catégorie de dispositif 2G, EX identification Ⓔx II 2 G/D EEx ia IIC T6

The assignment of the type of the connected circuit to the maximum permissible temperature and the temperature class as well as the effective internal reactances for the individual types of limit switch boxes are shown in the following table:

Soldo Code	P +F switches code	C_i (nF)	L_i (?H)	Type 1			Type 2			Type 3			Type 4		
				Maximum permissibile ambient temperature in C° for application in temperature class											
				T6	T5	T4	T6	T5	T4	T6	T5	T4	T6	T5	T4
SI_28	NJ2-11N-G	30	50	76	91	100	73	88	100	62	77	81	54	63	63
SI_30	NCB2-12GM35-N0	90	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_36	NJ5-11-N-G	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_37	NCN4-12GM35-N0	95	100	76	91	100	73	88	100	62	77	81	54	63	63
SI_39	NJ2-12GK-SN	50	150	73	88	100	69	84	100	51	66	80	39	54	61
SI_50	NJ2-11SN-G	50	150	76	91	100	73	88	100	62	77	81	54	63	63
SI_60	SJ-3.5-N	50	250	73	88	100	66	81	100	45	60	89	30	45	74
SI_62	SJ-3.5-SN	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_63	SJ-3.5-S1N	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SI_68	NJ5-11-N	45	50	72	87	100	65	80	100	42	57	82	26	41	63
SI_69	NJ2-11-N	45	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_70	NJ2-V3-N	40	50	73	88	100	66	81	100	45	60	89	30	45	74
SI_84	NJ2-11-SN	50	150	73	88	100	66	81	100	45	60	89	30	45	74
SI_86	NJ4-12GK-SN	70	150	73	88	100	69	84	100	51	66	80	39	54	61

Cross the temperature rating shown with the limit switch box rating shown in limit switch box installation & operating manual.

2) L'installation devra être réalisée suivant les normes en vigueur et avec du personnel agrée

3)Cet appareillage ne pourra faire l'objet de réparation par l'utilisateur.

4) S'il subsiste la possibilité que l'appareillage puisse se trouver en contact avec des substances agressives, il est de la responsabilité de l'utilisateur de prendre les précautions nécessaires pour prévenir des dommages éventuels et de s'assurer que le degré de protection ne sera pas compromis.

Substances agressives , par exemple: des acides, liquides ou gazeux qui peuvent attaquer les métaux..

5) Les précautions suivantes devront être observées :

Il est possible de vérifier dans des occasions rarissimes que l'alliage métallique utilisé pour le boîtier peut devenir une source potentielle d'allumage due à des impacts ou une friction avec formation éventuelle d'étincelle. Ceci doit être pris en considération lorsque le matériel est installé en zone qui demande un appareillage du groupe II catégorie 2G/D.

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IT

Dichiarazione di conformità ai sensi della direttiva Atex 94/9/EC

Dichiariamo, sotto la nostra responsabilità, che i SOLDO "limit switch box SIA,SIB,SIC,SIF,SIP,SIS series",

II 2 G EEx ia IIC T6 to T4

or

II 2 G/D EEx ia IIC T6 to T4

(a seconda delle opzioni di proximity) sono conformi alle disposizioni delle direttive ATEX 94/9/EC "Equipment or Protective Systems intended for use in potentially explosive atmospheres" e con l'adempimento della legislazione nazionale. Inoltre dichiariamo che sono state applicate le norme:

EN 50014 1997 +A1/A2
EN 50020 2003
89/336/CEE - 1989

EC- Certificato di controllo Tipico
03 ATEX 135107X

Notifica della assicurazione qualità
Ul Demko Q135510

GB

Declaration of conformity as defined by the ATEX directive 94/9/EC

Herewith we declare that the SOLDO "limit switch box SIA,SIB,SIC,SIF,SIP,SIS series,

II 2 G EEx ia IIC T6 to T4

or

II 2 G/D EEx ia IIC T6 to T4

(according to proximity switches options) are in conformity with the provision of the ATEX directive 94/9/EC "Equipment or Protective Systems intended for use in potentially explosive atmospheres" and with national implementing legislation and that appropriate harmonized standards have been applied:

EN 50014 1997 +A1/A2
EN 50020 2003
89/336/CEE - 1989

EC- Type examination certificate
03 ATEX 135107X

Production quality assurance notification:
Ul Demko Q135510

FR

Déclaration of conformity as defined by Atex directive 94/9/EC

Par la présente nous déclarons que les SOLDO" limit switch box SIA,SIB,SIC,SIF,SIP,SIS series '',

II 2 G EEx ia IIC T6 to T4

or

II 2 G/D EEx ia IIC T6 to T4

(selon les proximity switches options) sont conformes aux dispositions des Directive ATEX 94/9/EC "Equipment or Protective Systems intended for use in potentially explosive atmospheres" et aux législations nationales les transposant. Les normes applicables sont:

EN 50014 1997 +A1/A2
EN 50020 2003
89/336/CEE - 1989

Attestation d'examen CE de type:
03 ATEX 135107X

Assurance qualité de production:
Ul Demko Q135510

DE

Konformitätserklärung im Sinne der ATEX richtlinie 94/9/EC

Hiermit erklären wir, dass die SOLDO "limit switch box SIA,SIB,SIC,SIF,SIP,SIS series",

II 2 G EEx ia IIC T6 to T4

or

II 2 G/D EEx ia IIC T6 to T4

(sowie den ATEX 94/9/EC "Equipment or Protective Systems intended for use in potentially explosive atmospheres" und den einschlägigen nationalen durchführungsbestimmungen entsprechen.
Folgende normen wurden zugrundegelegt:

EN 50014 1997 +A1/A2
EN 50020 2003
89/336/CEE - 1989

EG- Baumusterprüfbescheinigung:
03 ATEX 135107X

Anerkennung Qualitätssicherung der Produktion:
Ul Demko Q135510

GB

READ THIS INSTRUCTION FIRST

To avoid serious or fatal personal injury or major property damage, read and follow all safety instruction in this manual. If you require additional assistance, please contact the manufacturer.

SAVE THIS INSTRUCTION

SAFETY ALERT SYMBOLS

⚠**DANGER** Warns of hazard that WILL cause serious personal injury, death or major property damage.
⚠**WARNING** Warns of hazard that MAY cause serious personal injury, death or major property damage.
⚠**CAUTION** Warns of hazard that MAY cause personal injury or property damage.

⚠ WARNING !

HAZARDOUS VOLTAGE. Disconnect all power before servicing equipment. DO NOT REMOVE COVER WHEN ENERGISED.

⚠CAUTION !

Do not exceed the limit switch performance limitation. Exceeding the limitation may cause damage to the limit switch, actuator and valve.
The conduit plug supplied with the switch boxes are for transit purposes only. IP67 protection depends on cable gland and cabling methods used.
Limit switchbox for quarter-turn valve device (90° rotation). Maximum shaft angular velocity 250 rpm.
Follow switch adjustment & indicator setting before servicing the limit switch box.

1e INSTALLATION

1.1 Attach proper mounting bracket (1) to the box (4) housing using four M6X8 bolts (2).
1.2 Align shaft (5) to actuator shaft and engage it.
1.3 Attach bracket to actuator using hardware provided (3).

IT

PRIMA DI INSTALLARE IL BOX LEGGERE QUESTE ISTRUZIONI

Per evitare il ferimento, la morte o danni importanti a oggetti leggere e seguire tutte le istruzioni di sicurezza presenti in questo manuale. Se vi servono informazioni aggiuntive non esitate a contattate il produttore.

CONSERVATE QUESTE ISTRUZIONI

SIMBOLI DI SEGNALAZIONE PERICOLO

⚠**DANGER** Segnalazione di pericolo che causerà serie ferite, morte o danni importanti a oggetti.
⚠**WARNING** Segnalazione di pericolo che potrà causare serie ferite, morte o danni importanti a oggetti.
⚠**CAUTION** Segnalazione di pericolo che potrà causare ferite o danni a oggetti.

⚠ WARNING !

PERICOLO SCOSSE ELETTRICHE. Togliere l'alimentazione elettrica prima di collegare o manutenere l'apparecchio. NON TOGLIERE IL COPERCHIO CON L'APPARECCHIO IN TENSIONE

⚠CAUTION !

Non superare le limitazioni di utilizzo degli switch. Il superamento delle limitazioni può causare il danneggiamento degli switch, dell' attuatore o della valvola.
I tappi di protezione dell'ingresso cavi forniti a corredo di ogni switch box servono solo come protezione durante il trasporto e non garantiscono il grado di protezione IP 67. Vanno pertanto sostituiti, in fase di installazione, con pressa cavo che garantiscano il grado di protezione richiesto.
Limit switch box per uso su valvole a quarto di giro (90° di rotazione). Massima velocità di rotazione dello stelo 250 rpm. Non rispettando questa indicazione si producono danni.
Seguire la procedura di taratura camme e regolazione indicatore prima di mettere in servizio il limit switch box.

1i INSTALLAZIONE SULL'ATTUATORE

1.1 Fissare la staffa (1) al corpo del box (4) utilizzando le 4 viti a cava esagonale M6x8 (2).
1.2 Ruotare manualmente lo stelo (5) in modo che il lembo fresato sia parallelo alla cava situata sul pignone dell'attuatore, quindi innestarlo alla stessa.
1.3 Fissare la staffa (1) all'attuatore con le viti fornite a corredo (3).

DE

LESEN SIE ZUERST DIESE INSTRUKTIONEN

Zur Vermeidung von gravierenden Personenschäden oder Schäden am Gerät, lesen und befolgen Sie alle Sicherheitsinstruktionen in dieser Anleitung. Wenn Sie zusätzliche Hilfe benötigen, kontaktieren Sie bitte den Hersteller.

BEWAHREN SIE DIESE INSTRUKTIONEN AUF

SICHERHEITS- UND WARNSYMBOLE

⚠**DANGER** Warnt vor Gefahren welche für Menschen gravierende Folgen, schwere Unfälle oder Tod zur folge haben.
⚠**WARNING** Warnt vor Gefahren welche für Menschen gravierende Folgen, schwere Unfälle oder Tod zur folge haben können.
⚠**CAUTION** Warnt vor Gefahren welche für Menschen gravierende Folgen oder schwere Unfälle zur folge haben können.

⚠ **WARNUNG !**

GEFÄHRLICHE SPANNUNG Wegen der Gefahr eines Elektroschocks, müssen alle Spannungsführenden Elemente vor jeder Manipulation vom Netz getrennt werden.

⚠**WARNUNG !**

Überschreiten Sie nie die Leistungsgrenzen des Endschalters. Das Überschreiten der Leistungsgrenzen kann zu Beschädigungen am Endschalter führen.
Die Verschlussdeckel für die Kabeleingänge im Gehäuse sind nur für den Transport. IP67 Schutz ist abhängig von den richtigen Kabelverschraubungen.
Die Endschalterbox ist für 90° Drehantriebe. Max. erlaubte Schaltgeschwindigkeit 250 rpm. Das Nicht-Beachten dieser Vorgaben, führt zu Beschädigungen.
Befolgen Sie die Einstellung Endschalter 2d bevor Sie die Endschalterbox benützen.

1d MONTAGE AUF DEN ANTRIEB

1.1 Verwenden Sie passende Montagebügel (1) fürs Schaltergehäuse (4) verwenden Sie 4 M6x8 Schrauben (2).
1.2 Richten Sie die Achse (5) zur Antriebsachse aus und verbinden Sie diese.
1.3 Befestigen Sie den Montagebügel (1) mit den mitgelieferten Schrauben und U-Scheiben (3).

FR

LIRE LES INSTRUCTIONS AVANT D'INSTALLER LE BOITIER FIN DE CORSE

Il est important de suivre les instructions contenues dans ce manuel pour éviter tout dommage corporel ou matériel eventuel. Si vous désirez des informations complémentaires n'hésitez pas à nous contacter.

CES INSTRUCTIONS DOIVENT ETRE CONSERVEES

SYMBOLES DES SIGNAUX D'ALERTE

⚠**DANGER** Signale que le non respect causera des dommages corporels ou matériels importants.
⚠**WARNING** Signale que le non respect peut causer des dommages corporels ou matériels.
⚠**CAUTION** Signale que le non respect peut causer des dommages matériels.

⚠ **WARNING !**

CHOC ÉLECTRIQUE. Pour éviter le risque de choc électrique couper l'alimentation avant de raccorder les fils ou pour assurer une maintenance. NE PAS ENLEVER LE COUVERCLE AVEC LE BOITIER SOUS TENSION.

⚠**CAUTION !**

Ne pas dépasser les limites d'utilisation des micro-interrupteurs. En cas contraire, ils peuvent être endommagés.
Le boîtier fin de course s'utilise pour des vannes au quart de tour (90°). La vitesse de rotation maximum de l'axe est de 250 t /mn. Une vitesse supérieure peut créer des dommages.
Le bouchon de protection fourni avec les boîtiers est fait pour assurer une protection pendant le transport. Ils n'est pas en mesure d'assurer une protection IP67. Il sera substitué par un presse étoupe donnant la protection appropriée.
Suivre la procédure de réglage de la came et de l'indicateur avant de mettre en service le boîtier fin de course.

1f MONTAGE SUR L'ACTIONNEUR

1.1 Fixer le support (1) au boîtier (4) en utilisant les 4 vis tête hexagonales M6x8 (2).
1.2 Aligner l'axe (5) en fonction de l'axe de l'actionneur et engager l'un dans l'autre.
1.3 Fixer le support (1) sur l'actionneur en utilisant les vis fournies (3)-

GB

2e SWITCH ADJUSTMENT & 3D INDICATOR SETTING

2.1 Loose the screws (8) and remove box cover (7).
2.2 Remove screw (10) and lift up 3D indicator from its splined retainer. Attention keep indicator (9) hand gripped when loosing and tightening screw (10) Do not rotate indicator when engaged onto retrained.
2.3 Follows indication in "Cams setting " Page 10
2.4 Box with 3-4 switches, set the actuator in the extra position you have to signal. Act according to indications in "Cams setting – Regolazione delle Camme" to set cams of the switch number 3 and 4.
2.5 Set 3D indicator (9) on splined retainer according to valve position.
2.6 Fix 3D indicator screwing the (10) screw.
2.7 Replace box cover (7). WARNINGS: check seal (6) is properly fitted in slot. Tightening screws (8).

3e ELECTRICAL WIRING

3.1 Remove cover (7) according point 2.1.
3.2 Remove protection plugs from cable entries and substitute them with cable glands or plugs suitable for type of protection required.
3.3 Connect terminal strip (14) according to the wiring diagram in "Cams setting – Regolazione delle Camme" Page 10.
3.4 Reassemble cover (7) according to points 2.5,2.6 and 2.7.

IT

2i REGOLAZIONE DEI FINECORSA & REGOLAZIONE DEL-L' INDICATORE 3D.

1.1 Svitare le quattro viti (8) e rimuovere il coperchio (7).
1.2 Togliere la vite (10) e sfilare l'indicatore 3D dal supporto millerighe. Attenzione: tenere l'indicatore (9) ben fermo quando si svita e si riavvita la vite (10) Non ruotare l'indicatore 3D quando innestato nel mille righe.
1.3 Seguire le indicazioni della tabella "Cams setting – Regolazione delle Camme" page 10.
1.4 Se box con 3-4 micro, portare l'attuatore nelle altre posizioni in cui si desiderano le segnalazioni. Regolare le camme per i micro 3 e 4 agendo come da indicazioni della tabella "Regolazione delle Camme".
1.5 Posizionare l'indicatore 3D sul supporto millerighe in modo da rispecchiare la posizione della valvola.
1.6 Fissare l'indicatore 3D serrando la vite (10).
1.7 Riposizionare il coperchio (7) sul box (4). ATTENZIONE verificare che la guarnizione (6) si alloggiata nella apposita cava. Serrare le viti (8).

3i CABLAGGIO ELETTRICO

3.1 Rimuovere il coperchio (7) come indicato nel punto 2.1.
3.2 Rimuovere i tappi di protezione e sostituirli con pressacavo/i ed/o tappo/i filettati, che garantiscano il livello di protezione richiesto.
3.3 Collegare i morsetti (14) utilizzando un cacciavite con testa a taglio max. 3,5 mm e seguendo lo schema corrispondente.
3.4 Rimontare il coperchio (7) come indicato nei punti 2.5,2.6 e 2.7.

DE

2d EINSTELLUNG ENDSCHALTER- UND STELLUNGSANZEIGE

1.1 Lösen Sie die Schrauben (8) und entfernen Sie den Deckel (7).
1.2 Entfernen Sie die Schraube (10) und heben Sie den 3D Indikator (9) aus seiner Zahnwellen Befestigung. Achtung: Drehen Sie nicht den 3D Indicator wenn er mit der Zahnwelle verbunden ist
1.3 Befolgen Sie die Angaben in " "Einstellung Nocken / Schaltfahnen" (Seite 10).
1.4 Für Boxen mit 3-4 Schaltern, stellen Sie den Antrieb auf die extra Positionen von denen das Signal benötigt wird. Befolgen Sie die Angaben in "Einstellung Nocken / Schaltfahnen " (Seite 10) um die "Schaltfahne" von Schalter 3 & 4 einzustellen.
1.5 Setzen Sie den 3D Indikator auf die richtige Position der Verzahnung passend zur Armaturenposition.
1.6 Befestigen Sie den 3D Indikator mit der Schraube (10).
1.7 Montieren Sie den Gehäusedeckel (7). WARNUNG: prüfen Sie die Dichtung (6), sitzt sie korrekt im vorgesehenen Schlitz.

3d ELEKTRISCHE VERKABELUNG

3.1 Entfernen Sie den Deckel (7) gemäß Punkt 2.1.
3.2 Entfernen Sie die Schutzkappen von den Kabeleingängen und bestücken Sie diese mit der passenden Kabelverschraubung mit der gew ünschten Abdichtung.
3.3 Verbinden Sie die Kabelklemme (14) gemäß dem Kabeldiagramm in "Einstellung Nocken / Schaltfahnen" (Seite 10.)
3.4 Montieren Sie den Deckel (7) gemäß den Angaben unter Punkt 2.5, 2.6 und 2.5.

FR

2f REGLAGE DES FINS DE COURSE ET DE L'INDICATEUR DE POSITION

1.1 Dévisser les 4 vis (8) et enlever le capot (7).
1.2 Enlever la vis (10) et sortir l'indicateur 3D (9) du support cannelé. Attention: tenir fermement l'indicateur 3D lorsque on le monte ou le démonte. Ne pas le faire tourner sur son support cannelé.
1.3 Suivre les indications du tableau : réglage des cames page 10.
1.4 Boîtier avec 3 ou 4 micro-interrupteurs, régler d'abord l'actionneur en fonction de la position en plus de la normale. Puis régler les cames pour les micro 3 et 4 en agissant comme indiqué dans le tableau ''réglage des cames''.
1.5 Positionner l'indicateur 3D sur le support cannelé suivant la position de la vanne.
1.6 Fixer l'indicateur 3D en serrant la vis (10).
1.7 Remettre le capot (7) sur le boîtier (4). Attention:bien vérifier que le joint d'étanchéité (6) du capot est bien positionné. Serrer les vis (8).

3f CABLAGE ELECTRIQUE

3.1 Enlever le couvercle (7) comme indiqué au point 2.1.
3.2 Enlever le bouchon de protection et installer des presse étoupes garantissant le degré de protection souhaitée.
3.3 Raccorder les bornes (14) suivant le schéma électrique du tableau ''mise en place et réglage des cames'' page 10.
3.4 Remonter le couvercle (7) comme indiqué au point 2.5, 2.6 et 2.7.

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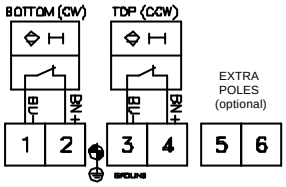
Tel +39 030 999.13.09 - Fax +39 030 914.19.77
http: //www.soldo.net
e-mail: sales@soldo.net

Installation & Operating Manual
Manuale d'installazione
Installations und Betriebsanleitung
Manuel d'installation et d'utilisation
IOM-SIB 00-02

SIB

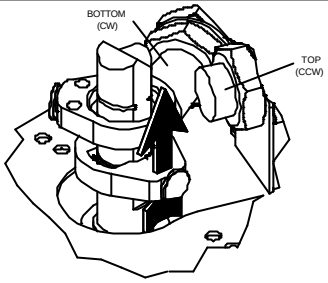
Model	Wiring diagram	Cams setting / Regolazione camme / Réglage des cames / Einstellung Nocken/Schaltfahnen

S*2028(7)X-X S*5028(7)X-X
S*2428(7)X-X S*5928(7)X-X
S*2828(7)X-X S*6128(7)X-X
S*3028(7)X-X S*6828(7)X-X
S*3628(7)X-X S*6928(7)X-X
S*3728(7)X-X S*8428(7)X-X
S*3928(7)X-X S*8628(7)X-X

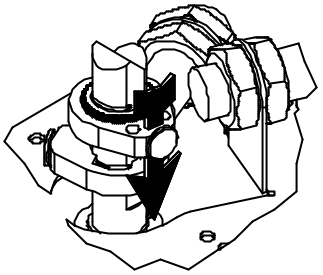


① Turn actuator pinion clockwise
Far ruotare il pignone dell'attuatore in senso orario
Die Antriebswelle im Uhrzeigersinn drehen.
Faire tourner le pignon de l'actionneur en sens horaire

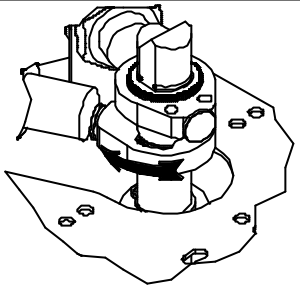
④ Turn actuator pinion counter clockwise
Far ruotare il pignone dell'attuatore in senso antiorario
Die Antriebswelle entgegen dem Uhrzeigersinn drehen.
Faire tourner le pignon de l'actionneur en sens anti - horaire



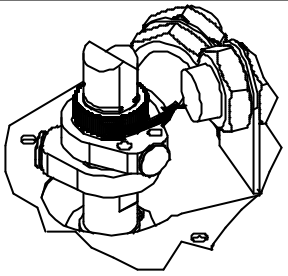
② Disingage cam from splined retrainer.
Spostare la camma fino a disinnestarla dal millerighe
Die Nocke nach oben verschieben bis sie aus der Wellenverzahnung ausgekuppelt werden kann.
Désengager la came de l'axe cannelé.



⑤ Disingage cam from splined retrainer.
Spostare la camma fino a disinnestarla dal millerighe
Die Nocke nach unten verschieben bis sie aus der Wellenverzahnung ausgekuppelt werden kann.
Désengager la came de l'axe cannelé.



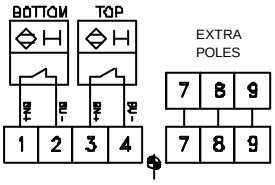
③

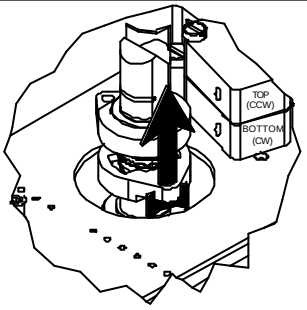


⑥

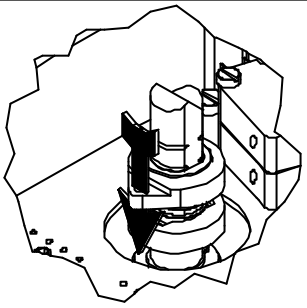
Turn, in the way shown, until switch is activated, then engage into splined retrainer.
Ruotarla, nella direzione indicata, fino a che fino all'azionamento dell'interruttore, poi reinserirla nel mille righe.
Die Nocke drehen, bis der Schalter aktiviert ist, danach wieder in die Wellenverzahnung einfuegen
Tourner dans le sens indiqué jusqu'au moment du fonctionnement du micro, puis remettre la came sur l'axe cannelé.

S*7022X-X

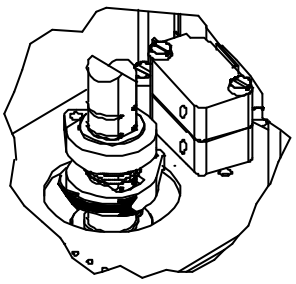




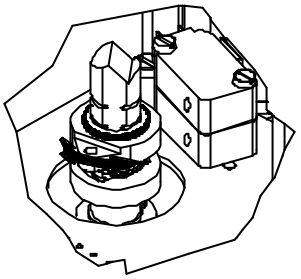
②



⑤

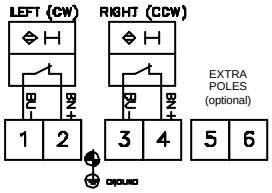


③

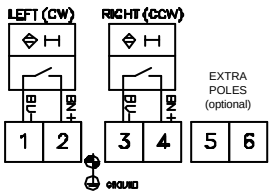


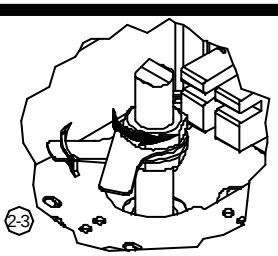
⑥

S*6028(7)X-X
S*6228(7)X-X

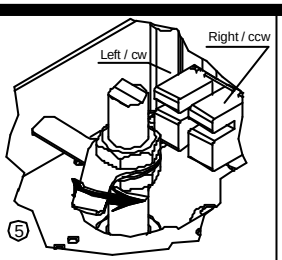


S*6328(7)X-X

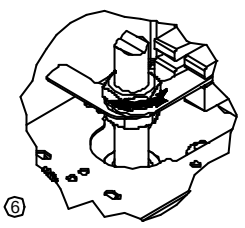




2-3 Loosen (using a 19 wrench) top nut
Rotate cam and fit in front of sensor.
Allentare (chiave 19) il dado superiore
Ruotare la camma per portarla di fronte al sensore
Die obere Schraubenmutter lockern
(Schraubenschluessel 19).Die Schaltfahne drehen
und im Schlitz des Sensors befestigen.
Dévisser (clé de 19) l'ecrou du dessus.
Faire tourner la came pour la mettre
en face du capteur



⑤ Rotate cam (shown in drawing)
and fit in front of sensor
Ruotare la camma indicata
per portarla di fronte al sensore
Die Schaltfahne drehen und im Schlitz
des Sensors befestigen.
Faire tourner la came (indiquè dans le schéma)
pour la mettre en face du capteur



⑥ Fasten (using a 19 wrench) top shaft nut
Serrare (chiave 19) il dado superiore
Die obere Schraubenmutter
festziehen (Schraubenschluessel 19).
Serrer (clé de 19) l'ecrou supérieur.

NOMENCLATURE / CODIFICA VERSIONI / TYPENSCHLÜSSEL / CODIFICATION DES DIFFERENTES VERSIONS

SIB **20** **2** **0** **1** - **1**

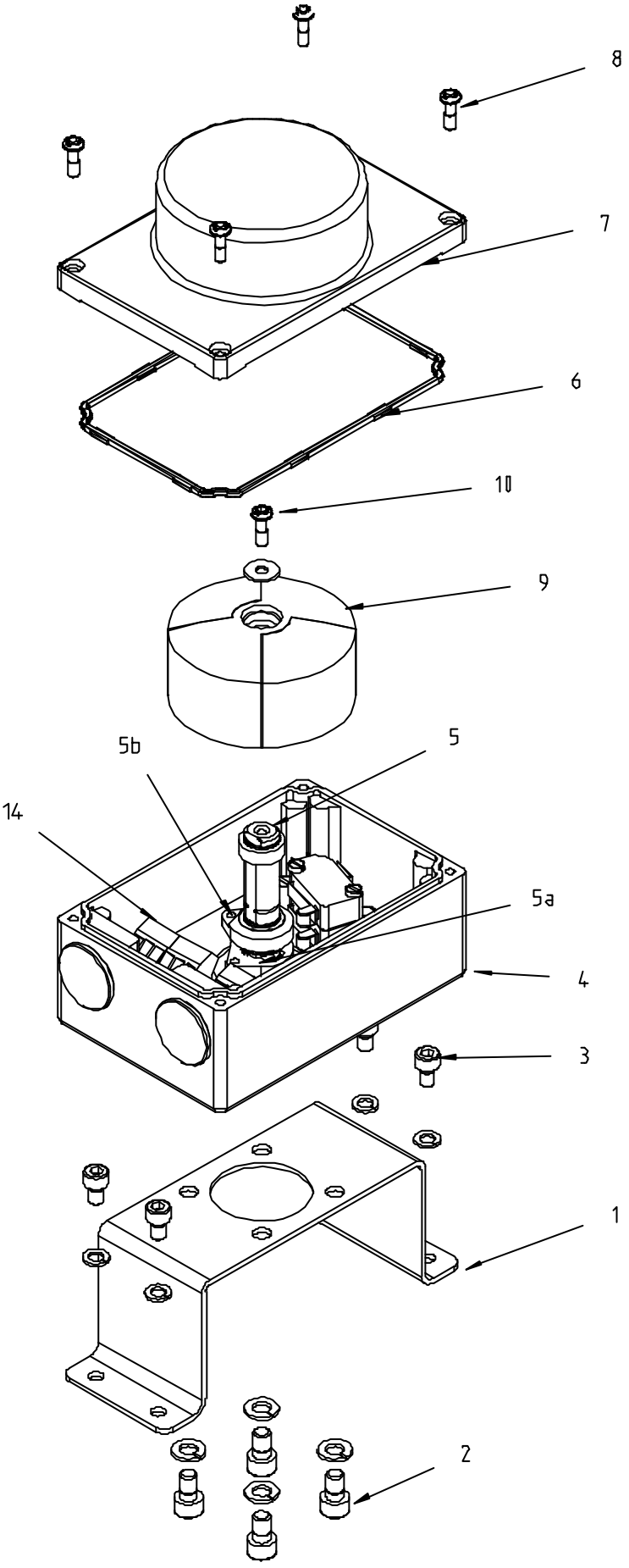
Cable entry / Ingresso cavi / Kabel Eingang / Entrée de câble
0 n°2 PG 13.5
1 n°2 ½" npt
2 n°2 M20x1.5

Colour / Colore / Farbe / Couleur
0 Black
1 blue RAL 5015

Terminal strip / Morsettiera / Kabelklemme / Bornes
0 standard PCB + extra solenoid terminals
2 blue PCB + extra solenoid terminals
7 cage clamp blue + extra poles for solenoid valve
8 cage clamp blue

Switch quantity / Quantità switch / Anzahl Schalter / Nombre de micro interrupteurs
1 to 4 according switch type

	Switch type	rating			max qty installed
		Voltage	Min Max resistive load Max inductive load		
20	proximity NAMUR P+F NJ4-12GK-N	Nominal voltage U_0 = 8Vdc	sensibility 4 mm, current consumption :≤1mA (face covered), ≥3mA (face not covered), self inductance ≤50 µH, self capacitance: ≤45 nF temp. range -20°C ÷ +80°C		2
24	proximity NAMUR P+F NJ2-12GK-N	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤50 µH, self capacitance: ≤45 nF temp. range -20°C ÷ +80°C		2
28	proximity NAMUR P+F NJ2-11N-G	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤50 µH, self capacitance: ≤30 nF temp. range -20°C ÷ +80°C		2
30	proximity NAMUR P+F NCB2-12GM35-N0	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption :≤1mA (face covered), ≥3mA (face not covered), self inductance ≤100 µH, self capacitance: ≤90 nF temp. range -20°C ÷ +80°C		2
36	proximity NAMUR P+F NJ5-11N-G	Nominal voltage U_0 = 8Vdc	sensibility 5 mm, current consumption :≤1mA (face covered), ≥3mA (face not covered), self inductance ≤50 µH, self capacitance: ≤45 nF temp. range -20°C ÷ +80°C		2
37	proximity NAMUR P+F NCN4-12GM35-N0	Nominal voltage U_0 = 8Vdc	sensibility 4 mm, current consumption :≤1mA (face covered), ≥3mA (face not covered), self inductance ≤100 µH, self capacitance: ≤95 nF temp. range -20°C ÷ +80°C		2
39	proximity NAMUR P + F NJ2-12GK-SN	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤150 µH, self capacitance: ≤50 nF temp. range -20°C ÷ +80°C		2
50	proximity NAMUR P + F NJ2-11SN-G	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤150 µH, self capacitance: ≤50 nF temp. range -20°C ÷ +80°C		2
59	proximity NAMUR P + F NCB2-12GK35-N0	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤100 µH, self capacitance: ≤90 nF temp. range -20°C ÷ +80°C		2
60	proximity NAMUR P+F SJ-3.5N	Nominal voltage U_0 = 8Vdc	sensibility 4 mm, current consumption : ≤1mA (face covered), 3mA (face not covered), self inductance ≤250 µH, self capacitance: ≤50 nF temp. range -20°C ÷ +80°C		2
61	proximity NAMUR P+F NCN4-12GK35-N0	Nominal voltage U_0 = 8Vdc	sensibility 4 mm, current consumption : ≤1mA (face covered), 3mA (face not covered), self inductance ≤100 µH, self capacitance: ≤95 nF temp. range -20°C ÷ +80°C		2
62	proximity NAMUR P+F SJ-3.5-SN	Nominal voltage U_0 = 8Vdc	sensibility 4 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤100 µH, self capacitance: ≤60 nF temp. range -20°C ÷ +80°C		2
63	proximity NAMUR P+F SJ-3.5-S1N	Nominal voltage U_0 = 8Vdc	sensibility 4 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤100 µH, self capacitance: ≤60 nF temp. range -20°C ÷ +80°C		2
68	proximity NAMUR P+F NJ5-11-N	Nominal voltage U_0 = 8Vdc	sensibility 5 mm, current consumption : ≤1mA (face covered), ≥3mA (face not covered), self inductance ≤50 µH, self capacitance: ≤45 nF temp. range -20°C ÷ +80°C		3
69	proximity NAMUR P+F NJ2-11-N	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not cover) self inductance ≤50 µH self capacitance: ≤45 nF temp. range -20°C ÷ +80°C		2
70	proximity NAMUR P+F NJ2-V3-N	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not cover) self inductance ≤50 µH self capacitance: ≤40 nF temp. range -20°C ÷ +80°C		3
84	proximity NAMUR P+F NJ2-11-SN	Nominal voltage U_0 = 8Vdc	sensibility 2 mm, current consumption : ≤1mA (face covered), ≥3mA (face not cover) self inductance ≤150 µH self capacitance: ≤50 nF temp. range -20°C ÷ +80°C		2
86	proximity NAMUR P+F NJ4-12GK-SN	Nominal voltage U_0 = 8Vdc	sensibility 4 mm, current consumption : ≤1mA (face covered), ≥3mA (face not cover) self inductance ≤150 µH self capacitance: ≤70 nF temp. range -20°C ÷ +80°C		2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[1] # EC-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

[3] EC-Type Examination Certificate Number: **DEMKO 03 ATEX 135107 X**

[4] Equipment or Protective System: **Rotary Switch Boxes Type SIA, SIB, SIC, SIF, SIS, and SIP**

[5] Manufacturer: **Soldo S.R.L.**

[6] Address: **Via Monte Baldo, 60, I-25015, Desenzano d/g, Italy**

[7] This equipment or protective system and any acceptable variation there to is specified in the schedule to this certificate and the documents therein referred to.

[8] UL International Demko A/S, notified body number 0539 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. 135107

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN 50014: 1997** incl. A1:1999 + A2:1999 **EN 50020: 2002** **EN 50281-1-1: 1998**

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

[12] The marking of the equipment or protective system shall include the following:

Ex II 2 GD EEx ia IIC T6

On behalf of UL International Demko A/S

Herlev, 2003-07-30

Karina Christiansen
Certification Manager

[13] # Schedule

[14] ## EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 03 ATEX 135107 X

[15] Description of Equipment or protective system

The rotary switch boxes consist of type NJ.., NC.., and SJ ATEX Certified EEx ia sensors mounted in type SI boxes rated IP 67 (IP65 SIP). The sensors are used to convert displacements into electrical signals.

The cylindrical inductive sensors Types NJ and NC, and the slot-type initiator Type SJ may be operated with intrinsically safe circuits certified for categories and explosion groups [EEx ia] IIC. The category as well as the explosion group of the intrinsically safe cylindrical inductive sensors and the slot-type sensors depends on the connected supplying intrinsically safe circuit.

The sensors were previously evaluated under the following ATEX Certificate numbers:

SOLDO Switch box code	P & F Switch code	ATEX Certificate No. (GAS certification)	ATEX Certificate No. (Dust certification)
SI_20	NJ4-12GK-N	PTB 00 ATEX2048X	
SI_24	NJ2-12GK-N	PTB 00 ATEX2048X	
SI_28	NJ2-11N-G	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_30	NCB2-12GM35-N0	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_36	NJ5-11-N-G	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_37	NCN4-12GM35-N0	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_39	NJ2-12GK-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_50	NJ2-11SN-G	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_59	NCB2-12GK35-N0	PTB 00 ATEX2048X	
SI_60	SJ3.5-N	PTB 00 ATEX2219X	ZELM 03 ATEX 0128 X
SI_61	NCN4-12GK35-N0	PTB 00 ATEX2048X	
SI_62	SJ3.5-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_63	SJ3.5-S1N	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_68	NJ5-11-N	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_69	NJ2-11-N	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_70	NJ2-V3-N	PTB 00 ATEX2032X	ZELM 03 ATEX 0128 X
SI_84	NJ2-11-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_86	NJ4-12GK-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X

Please note that NJ4-12GK-N, NJ2-12GK-N, NCB2-12GK35-N0 and NCN4-12GK35-N0 are not certified for Dust and therefore they cannot be used as options for environment classified for dust.

The type SI boxes were certified to the IP rating as given below:

Box SB, Box SA, Box SF, Box SS, Box SC	IP67
Box SP	IP65

Schedule

EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 03 ATEX 135107 X

Note on Nomenclature – The letter "I" is inserted after letter "S" on Soldo box code to indicate ATEX Certification of box with initiators.

Electrical data (General)

All Models is to be supplied from an ATEX certified barrier with suitable electrical data as described in the individual certificates for the used sensors.

Electrical data (Gas certified Sensors)

Type of protection Intrinsic Safety EEx ia IIC

Only for connection to certified intrinsically safe circuits
Maximum Values:

Type 1	Type 2	Type 3	Type 4
Ui=16 V	Ui=16 V	Ui=16 V	Ui=16 V
Ii=25mA	Ii=25 mA	Ii=52 mA	Ii=76 mA
Pi=34mW	Pi=64mW	Pi=169mW	Pi=242mW

			Maximum permissible ambient temperature in °C for application in temp. class											
			Type 1			Type 2			Type 3			Type 4		
Types	Ci [nf]	Li [µh]	T6	T5	T4-1	T6	T5	T4-1	T6	T5	T4-1	T6	T5	T4-1
NCB2.12GM.NO	90	100	76	91	100	73	88	100	62	77	81	54	63	63
NCN4.12GK.NO	95	100	73	88	100	69	84	100	51	66	80	39	54	61
NCN4.12GM.NO	95	100	76	91	100	73	88	100	62	77	81	54	63	63
NJ2.11.N	45	50	73	88	100	66	81	100	45	60	89	30	45	74
NJ2.V3.N	40	50	73	88	100	66	81	100	45	60	89	30	45	74
NJ2.11.N.G	30	50	76	91	100	73	88	100	62	77	81	54	63	63
NJ2.12GK.N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
NJ4.12GK.N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
NJ5.11.N	45	50	72	87	100	65	80	100	42	57	82	26	41	63
NJ5.11.NG	45	50	72	87	100	65	80	100	42	57	82	26	41	63
NJ2.11.SN	50	150	73	88	100	66	81	100	45	60	89	30	45	74
NJ2.11.SN.G	50	150	76	91	100	73	88	100	62	77	81	54	63	63
NJ2.12GK.SN	50	150	73	88	100	69	84	100	51	66	80	39	54	61
NJ4.12GK.SN	70	150	73	88	100	69	84	100	51	66	80	39	54	61
SJ.3,5.S1N	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SJ.3,5.SN	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SJ3,5.N	50	250	73	88	100	66	81	100	45	60	89	30	45	74

[1] # EC-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

[3] EC-Type Examination Certificate Number: **DEMKO 03 ATEX 135107 X**

[4] Equipment or Protective System: **Rotary Switch Boxes Type SIA, SIB, SIC, SIF, SIS, and SIP**

[5] Manufacturer: **Soldo S.R.L.**

[6] Address: **Via Monte Baldo, 60, I-25015, Desenzano d/g, Italy**

[7] This equipment or protective system and any acceptable variation there to is specified in the schedule to this certificate and the documents therein referred to.

[8] UL International Demko A/S, notified body number 0539 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. 135107

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN 50014: 1997** incl. A1:1999 + A2:1999 **EN 50020: 2002** **EN 50281-1-1: 1998**

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

[12] The marking of the equipment or protective system shall include the following:

Ex II 2 GD EEx ia IIC T6

On behalf of UL International Demko A/S

Herlev, 2003-07-30

Karina Christiansen
Certification Manager

[13] # Schedule

[14] ## EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 03 ATEX 135107 X

[15] Description of Equipment or protective system

The rotary switch boxes consist of type NJ.., NC.., and SJ ATEX Certified EEx ia sensors mounted in type SI boxes rated IP 67 (IP65 SIP). The sensors are used to convert displacements into electrical signals.

The cylindrical inductive sensors Types NJ and NC, and the slot-type initiator Type SJ may be operated with intrinsically safe circuits certified for categories and explosion groups [EEx ia] IIC. The category as well as the explosion group of the intrinsically safe cylindrical inductive sensors and the slot-type sensors depends on the connected supplying intrinsically safe circuit.

The sensors were previously evaluated under the following ATEX Certificate numbers:

SOLDO Switch box code	P & F Switch code	ATEX Certificate No. (GAS certification)	ATEX Certificate No. (Dust certification)
SI_20	NJ4-12GK-N	PTB 00 ATEX2048X	
SI_24	NJ2-12GK-N	PTB 00 ATEX2048X	
SI_28	NJ2-11N-G	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_30	NCB2-12GM35-N0	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_36	NJ5-11-N-G	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_37	NCN4-12GM35-N0	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_39	NJ2-12GK-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_50	NJ2-11SN-G	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_59	NCB2-12GK35-N0	PTB 00 ATEX2048X	
SI_60	SJ3.5-N	PTB 00 ATEX2219X	ZELM 03 ATEX 0128 X
SI_61	NCN4-12GK35-N0	PTB 00 ATEX2048X	
SI_62	SJ3.5-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_63	SJ3.5-S1N	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_68	NJ5-11-N	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_69	NJ2-11-N	PTB 00 ATEX2048X	ZELM 03 ATEX 0128 X
SI_70	NJ2-V3-N	PTB 00 ATEX2032X	ZELM 03 ATEX 0128 X
SI_84	NJ2-11-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X
SI_86	NJ4-12GK-SN	PTB 00 ATEX2049X	ZELM 03 ATEX 0128 X

Please note that NJ4-12GK-N, NJ2-12GK-N, NCB2-12GK35-N0 and NCN4-12GK35-N0 are not certified for Dust and therefore they cannot be used as options for environment classified for dust.

The type SI boxes were certified to the IP rating as given below:

Box SB, Box SA, Box SF, Box SS, Box SC	IP67
Box SP	IP65

Schedule

EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 03 ATEX 135107 X

Note on Nomenclature – The letter "I" is inserted after letter "S" on Soldo box code to indicate ATEX Certification of box with initiators.

Electrical data (General)

All Models is to be supplied from an ATEX certified barrier with suitable electrical data as described in the individual certificates for the used sensors.

Electrical data (Gas certified Sensors)

Type of protection Intrinsic Safety EEx ia IIC

Only for connection to certified intrinsically safe circuits
Maximum Values:

Type 1	Type 2	Type 3	Type 4
Ui=16 V	Ui=16 V	Ui=16 V	Ui=16 V
Ii=25mA	Ii=25 mA	Ii=52 mA	Ii=76 mA
Pi=34mW	Pi=64mW	Pi=169mW	Pi=242mW

			Maximum permissible ambient temperature in °C for application in temp. class											
			Type 1			Type 2			Type 3			Type 4		
Types	Ci [nf]	Li [µh]	T6	T5	T4-1	T6	T5	T4-1	T6	T5	T4-1	T6	T5	T4-1
NCB2.12GM.NO	90	100	76	91	100	73	88	100	62	77	81	54	63	63
NCN4.12GK.NO	95	100	73	88	100	69	84	100	51	66	80	39	54	61
NCN4.12GM.NO	95	100	76	91	100	73	88	100	62	77	81	54	63	63
NJ2.11.N	45	50	73	88	100	66	81	100	45	60	89	30	45	74
NJ2.V3.N	40	50	73	88	100	66	81	100	45	60	89	30	45	74
NJ2.11.N.G	30	50	76	91	100	73	88	100	62	77	81	54	63	63
NJ2.12GK.N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
NJ4.12GK.N	45	50	73	88	100	69	84	100	51	66	80	39	54	61
NJ5.11.N	45	50	72	87	100	65	80	100	42	57	82	26	41	63
NJ5.11.NG	45	50	72	87	100	65	80	100	42	57	82	26	41	63
NJ2.11.SN	50	150	73	88	100	66	81	100	45	60	89	30	45	74
NJ2.11.SN.G	50	150	76	91	100	73	88	100	62	77	81	54	63	63
NJ2.12GK.SN	50	150	73	88	100	69	84	100	51	66	80	39	54	61
NJ4.12GK.SN	70	150	73	88	100	69	84	100	51	66	80	39	54	61
SJ.3,5.S1N	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SJ.3,5.SN	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SJ3,5.N	50	250	73	88	100	66	81	100	45	60	89	30	45	74

Schedule

EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 03 ATEX 135107 X

Electrical data (Dust certified Sensors)

Type of protection Intrinsic Safety Ex iaD 20 T... °C

Only for connection to certified intrinsically safe circuits
Maximum Values:

Type 1	Type 2	Type 3
Ui=16 V	Ui=16 V	Ui=16 V
Ii=25 mA	Ii=25 mA	Ii=52 mA
Pi=34mW	Pi=64mW	Pi=169mW

	Type 1			Type 2			Type 3		
Type	Tamb 40°C	Tamb 70°C	Tamb 100°C	Tamb 40°C	Tamb 70°C	Tamb 100°C	Tamb 40°C	Tamb 70°C	Tamb 100°C
	T	T	T	T	T	T	T	T	T
NJ.., NC.., SJ..	44	73	102	48	76	103	60	85	108

[16] Report No.
Project Report No.: 135107-01 (Hazardous Location Testing)
PTB 00 ATEX 2032 X
PTB 00 ATEX 2048 X
PTB 00 ATEX 2049 X
PTB 00 ATEX 2219 X

Drawings:

Number	Date	Description
0225056-00	2003-04-29	SI Schedule Drawing List and Nomenclature
CE003	2003-03-03	Declaration of Conformity
SI003	2003-03-31	Safety Instruction to hazardous area installation

The Schedule drawings are listed in the document entitled " SI Schedule Drawing List and Nomenclature ".

[17] Special conditions for safe use:
1. The assignment of the type of the connected circuit to the maximum permissible ambient temperature and the temperature class as well as the effective internal reactances for the individual

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Schedule

EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 03 ATEX 135107 X

Electrical data (Dust certified Sensors)

Type of protection Intrinsic Safety Ex iaD 20 T... °C

Only for connection to certified intrinsically safe circuits
Maximum Values:

Type 1	Type 2	Type 3
Ui=16 V	Ui=16 V	Ui=16 V
Ii=25 mA	Ii=25 mA	Ii=52 mA
Pi=34mW	Pi=64mW	Pi=169mW

	Type 1			Type 2			Type 3		
Type	Tamb 40°C	Tamb 70°C	Tamb 100°C	Tamb 40°C	Tamb 70°C	Tamb 100°C	Tamb 40°C	Tamb 70°C	Tamb 100°C
	T	T	T	T	T	T	T	T	T
NJ.., NC.., SJ..	44	73	102	48	76	103	60	85	108

[16] Report No.
Project Report No.: 135107-01 (Hazardous Location Testing)
PTB 00 ATEX 2032 X
PTB 00 ATEX 2048 X
PTB 00 ATEX 2049 X
PTB 00 ATEX 2219 X

Drawings:

Number	Date	Description
0225056-00	2003-04-29	SI Schedule Drawing List and Nomenclature
CE003	2003-03-03	Declaration of Conformity
SI003	2003-03-31	Safety Instruction to hazardous area installation

The Schedule drawings are listed in the document entitled " SI Schedule Drawing List and Nomenclature ".

[17] Special conditions for safe use:
1. The assignment of the type of the connected circuit to the maximum permissible ambient temperature and the temperature class as well as the effective internal reactances for the individual

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Schedule

EC-TYPE EXAMINATION CERTIFICATE No. DEMKO 03 ATEX 135107 X

types of cylindrical inductive sensors is shown in the table given under item (15) of this EC-type-examination certificate.

2. Inadmissible electrostatic charge of parts of the metal housing has to be avoided for the following types of cylindrical inductive sensors. Dangerous electrostatic charges of parts of the metal housing can be avoided by grounding of these parts whereas very small parts of the metal housing (e.g. screws) don't need to be grounded. For further details please refer to certificate for the Sensors.

3. The SIP type does not conform to the requirements of EN 50014:1997 clause 7.3.2 with respect to hazardous electrostatic charges and is therefore marked with a warning label indicating the appropriate safety measures to be applied in service.

[18] Essential Health and Safety Requirements

Concerning ESR this Schedule verifies compliance with the Ex standards only. The manufacturer's Declaration of Conformity declares compliance with other relevant Directives.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

On behalf of UL International Demko A/S

Herlev, 2003-07-25

Karina Christiansen
Certification Manager

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