



# 防爆合格证

证号：GYJ071072X

由 Emerson Process Management, Valve Automation Division制造的产品：  
(地址：Asveldweg 11, 7556 BR Hengelo, The Netherlands)

名称 开关盒

型号规格 HD - IS□

防爆标志 Ex ia II CT4~T6; Ex nL II CT4~T6; DIP A20 T<sub>A</sub>44℃~80℃

产品标准 —

图样编号 C0349 - 01、C0349 - 02、C0623 - 01、C0623 - 02

经图样及技术文件的审查和样品检验，确认上述产品符合 GB3836.1/4 - 2000、GB3836.8 - 2003、GB12476.1 - 2000 标准，特颁发此证。有效期自颁发日期起伍年内有效。

备注 1. 认可产品型号、温度组别和产品使用注意事项见本合格证附件。  
2. 本安参数：见本合格证附件。

站长

国家级仪器仪表防爆安全监督检验站

颁发日期 二〇〇七年三月二十六日



本证书仅对与认可文件和样品一致的产品有效。

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# 防爆合格证

证号：GYJ071073X

由 Emerson Process Management, Valve Automation Division 制造的产品：  
(地址：Asveldweg 11, 7556 BR Hengelo, The Netherlands)

名称 开关盒

型号规格 LDNA-IS□

防爆标志 Ex ia II CT4~T6; Ex nL II CT4~T6; DIP A20/21 T<sub>A</sub>44°C~80°C

产品标准 —

图样编号 C0349-01、C0349-02、C0623-01、C0623-02

经图样及技术文件的审查和样品检验，确认上述产品符合 GB3836.1/4-2000、GB3836.8-2003、GB12476.1-2000 标准，特颁发此证。有效期自颁发日期起伍年内有效。

备注 1. 认可产品型号、温度组别和产品使用注意事项见本合格证附件。  
2. 本安参数和限能参数见本合格证附件。

站长

国家级仪器仪表防爆安全监督检验站

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# 防 爆 合 格 证

证号：GYJ071074X

由 Emerson Process Management, Valve Automation Division制造的产品：  
(地址：Asveldweg 11, 7556 BR Hengelo, The Netherlands)

名 称 开关盒

型号规格 LDN - IS□

防爆标志 Ex ia II CT4~T6; Ex nL II CT4~T6

产品标准 —

图样编号 C0349 - 01、C0349 - 02、C0623 - 01、C0623 - 02

经图样及技术文件的审查和样品检验，确认上述产品  
符合 GB3836.1/4 - 2000、GB3836.8 - 2003 标准，  
特颁发此证。有效期自颁发日期起伍 年内有效。

备注 1. 认可产品型号、温度组别和产品使用注意事项见本合格证附件。  
2. 本安参数和限能参数见本合格证附件。

站 长

国家级仪器仪表防爆安全监督检验站

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# 国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for  
Explosion Protection and Safety of Instrumentation

(GYJ071072X~GYJ071074X)

(Attachment I)

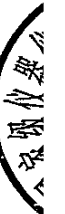
## GYJ071072X~GYJ071074X防爆合格证附件 I

由Emerson Process Management, Valve Automation Division 生产的HD-IS□、LDNA-IS□和LDN-IS□系列开关盒，经国家级仪器仪表防爆安全监督检验站(NEPSI)检验，符合GB3836.1-2000“爆炸性气体环境用电气设备 第1部分：通用要求”、GB3836.4-2000“爆炸性气体环境用电气设备 第4部分：本质安全型“i””、GB3836.8-2003“爆炸性气体环境用电气设备 第8部分：“n”型电气设备”和GB12476.1-2000“可燃性粉尘环境用电气设备 第1部分：用外壳和限制表面温度保护的电气设备 第1节：电气设备的技术要求”防爆标准规定的要求，外壳防护等级IP65(符合GB4208-1993标准要求)。

型号	防爆合格证编号	防爆标志
HD-IS□	GYJ071072X	Ex iaIICT4~T6 Ex nLIICT4~T6 DIP A20 T <sub>a</sub> 44℃~80℃
LDNA-IS□	GYJ071073X	Ex iaIICT4~T6 Ex nLIICT4~T6 DIP A20/21 T <sub>a</sub> 44℃~80℃
LDN-IS□	GYJ071074X	Ex iaIICT4~T6 Ex nLIICT4~T6

本证书认可产品的型号与内置开关型号和安装区域要求的对应关系如下：

内置开关型号	HD系列		LDNA系列		LDN系列	
	型号	安装区域	型号	安装区域	型号	安装区域
SJ3,5-SN	HD-IS1	0区, 20区	LDNA-IS1	0区, 20区	LDN-IS1	0区, 20区
SJ3,5-N	HD-IS2	0区, 20区	LDNA-IS2	0区, 20区	LDN-IS2	0区, 20区
SJ5-N	HD-IS3	0区, 20区	LDNA-IS3	0区, 20区	LDN-IS3	0区, 20区
NJ2-11-N-G	—		LDNA-IS4	0区, 20区	LDN-IS4	0区, 20区
NJ2-11-SN	—		LDNA-IS5	0区, 20区	LDN-IS5	0区, 20区



NJ2-V3-N	HD-IS6	0区, 20区	LDNA-IS6	0区, 20区	LDN-IS6	0区, 20区
V3	HD-IS7	0区, 20区	LDNA-IS7	0区, 20区	LDN-IS7	0区, 20区
PL2-F25-N4-K	—	—	LDNA-IS8	1区, 21区	LDN-IS8	1区, 21区
PL3-F25-N4-K	—	—	LDNA-IS9	1区, 21区	LDN-IS9	1区, 21区
SC3, 5-G-N0	HD-IS10	0区, 20区	LDNA-IS10	0区, 20区	LDN-IS10	0区, 20区
PL2-F25-SN4-K	—	—	LDNA-IS11	1区, 21区	LDN-IS11	1区, 21区
PL3-F25-SN4-K	—	—	LDNA-IS12	1区, 21区	LDN-IS12	1区, 21区
NJ4-12GK-N	—	—	LDNA-IS13	1区, 21区	LDN-IS13	1区, 21区
NJ5-11-N-G	—	—	LDNA-IS14	1区, 21区	LDN-IS14	1区, 21区

注：1. 当防爆标志为Ex ia II CT4~T6，安装区域为0区时，允许安装在0区、1区或2区的爆炸性气体环境；安装区域为1区时，允许安装在1区或2区的爆炸性气体环境。

2. 当防爆标志为Ex nL II CT4~T6，仅允许安装在2区的爆炸性气体环境。

3. 当安装区域为20区时，防爆标志为DIP A20 T<sub>A</sub>44℃~80℃，允许安装在20区、21区或22区的可燃性粉尘环境；当安装区域为21区时，防爆标志为DIP A21 T<sub>A</sub>44℃~80℃，允许安装在21区或22区的可燃性粉尘环境。

## 一、产品使用特殊要求

防爆合格证号后缀“X”，表明该产品在使用时具有特殊要求，具体内容如下：

1. 开关盒最低使用环境温度为-25℃。

2. 内置开关型号为V3时，其温度组别T与最高表面温度T<sub>A</sub>由使用环境温度决定，允许使用的最高环境温度为+80℃。

3. 其余型号开关盒的最高使用环境温度规定如下：

3.1 当用于0区爆炸性气体环境时，LDNA-IS□和HD-IS□系列开关盒的最高使用环境温度应符合下列要求；LDN-IS□系列的最高使用温度应低于下列温度10℃。

内置 开关型号	最高使用环境温度(℃)											
	type1			type2			type3			type4		
	T4	T5	T6	T4	T5	T6	T4	T5	T6	T4	T5	T6
SJ3, 5-SN	80	68	56	80	61	49	68	40	28	53	25	13
SJ3, 5-N	80	68	56	80	61	49	68	40	28	53	25	13
SJ5-N	80	68	56	80	61	49	68	40	28	53	25	13
NJ2-11-N-G	80	71	59	80	68	56	68	57	45	63	49	37

NJ2-11-SN	80	68	56	80	61	49	68	40	28	53	25	13
NJ2-V3-N	80	68	56	80	61	49	68	40	28	53	25	13
SC3, 5-G-N0	80	68	56	80	61	49	68	40	28	53	25	13

3.2 当用于20区可燃性粉尘环境时, LDNA-IS□和HD-IS□系列开关盒的最高使用环境温度应符合下列要求:

内置 开关型号	最高使用环境温度(°C)								
	type1			type2			type3		
	40	70	77	40	70	74	40	60	80
	最高表面温度 $T_A$ (°C)								
SJ3, 5-SN	44	73	80	48	76	80	60	80	-
SJ3, 5-N	44	73	80	48	76	80	60	80	-
SJ5-N	44	73	80	48	76	80	60	80	-
NJ2-11-N-G	44	73	80	48	76	80	60	80	-
NJ2-11-SN	44	73	80	48	76	80	60	80	-
NJ2-V3-N	44	73	80	48	76	80	60	80	-
SC3, 5-G-N0	44	73	80	48	76	80	60	80	-

3.3 当用于1区爆炸性气体环境时, LDNA-IS□和HD-IS□系列开关盒的最高使用环境温度应符合下列要求; LDN-IS□系列的最高使用温度应低于下列温度10°C。

内置 开关型号	最高使用环境温度(°C)											
	type1			type2			type3			type4		
	T4	T5	T6	T4	T5	T6	T4	T5	T6	T4	T5	T6
SJ3, 5	80	80	73	80	80	66	80	60	45	74	45	30
SJ3, 5	80	80	73	80	80	66	80	60	45	74	45	30
SJ5-N	80	80	73	80	80	66	80	60	45	74	45	30
NJ2-11-N-G	80	80	76	80	80	73	80	77	62	63	63	54
NJ2-11-SN	80	80	73	80	80	66	80	60	45	74	45	30
NJ2-V3-N	80	80	73	80	80	66	80	60	45	74	45	30
NJ4-12GK-N	80	80	73	80	80	69	80	66	51	61	54	39
NJ5-11-N-G	80	80	72	80	80	65	80	57	42	63	41	26

SC3, 5-G-N0	80	80	73	80	80	66	80	60	45	74	45	30
PL2-F25-N4-K	80	77	62	80	77	62	80	66	51	-	-	-
PL3-F25-N4-K	80	77	62	80	77	62	80	66	51	-	-	-
PL2-F25-SN4-K	80	77	62	80	77	62	80	66	51	-	-	-
PL3-F25-SN4-K	80	77	62	80	77	62	80	66	51	-	-	-

3.4 当用于21区可燃性粉尘环境时, LDNA-IS□和HD-IS□系列开关盒的最高使用环境温度应符合下列要求:

内置 开关型号	最高使用环境温度 (°C)											
	type1			type2			type3			type4		
	40	60	70	40	50	66	40	50	60	40	-	-
最高表面温度 $T_A$ (°C)												
SJ3, 5	44	63	73	48	58	72	60	70	80	80	-	-
SJ3, 5	44	63	73	48	58	72	60	70	80	80	-	-
SJ5-N	44	63	73	48	58	72	60	70	80	80	-	-
NJ2-11-N-G	44	63	73	48	58	72	60	70	80	80	-	-
NJ2-11-SN	44	63	73	48	58	72	60	70	80	80	-	-
NJ2-V3-N	44	63	73	48	58	72	60	70	80	80	-	-
NJ4-12GK-N	48	68	80	51	61	80	64	80	-	80	-	-
NJ5-11-N-G	49	69	80	54	64	80	70	80	-	80	-	-
SC3, 5-G-N0	44	64	73	48	58	74	60	70	80	80	-	-

内置 开关型号	最高使用环境温度 (°C)								
	type1			type2			type3		
	40	50	64	40	50	64	40	50	-
最高表面温度 $T_A$ (°C)									
PL2-F25-N4-K	56	66	80	56	66	80	64	80	-
PL3-F25-N4-K	56	66	80	56	66	80	64	80	-
PL2-F25-SN4-K	56	66	80	56	66	80	64	80	-
PL3-F25-SN4-K	56	66	80	56	66	80	64	80	-

## 二、产品使用注意事项

1. 防爆标志为Ex ia II CT4~T6的开关盒必须与已通过防爆认证的关联设备配套共同组成本安防爆系统方可使用于现场存在爆炸性气体混合物的危险场所。其系统接线必须同时遵守开关盒和所配关联设备的使用说明书要求，接线端子不得接错。

1.1 本安参数及内部最大等效参数如下：

内置开关型号：V3

最高输入电压 Ui (V)	最大输入电流 Ii (mA)	最大输入功率 Pi (W)	最大内部等效参数	
			Ci(nF)	Li(mH)
30	300	1.2	0	0

内置开关型号：PL2-F25-N4-K、PL3-F25-N4-K、PL2-F25-SN4-K和PL3-F25-SN4-K

类型代号	最高输入电压 Ui (V)	最大输入电流 Ii (mA)	最大输入功率 Pi (mW)
type1	15	25	34
type2	15	25	64
type3	15	52	169

其余内置开关：

类型代号	最高输入电压 Ui (V)	最大输入电流 Ii (mA)	最大输入功率 Pi (mW)
type1	16	25	34
type2	16	25	64
type3	16	52	169
type4	16	76	242

开关型号	最大内部等效电容 Ci(nF)	最大内部等效电感 Li(μH)
SJ3, 5-SN	30	100
SJ3, 5-N	50	250
SJ5-N	50	250
NJ2-11-N-G	30	50
NJ2-11-SN	50	150
NJ2-V3-N	40	50



NJ4-12GK-N	45	50
NJ5-11-N-G	45	50
SC3, 5-G-N0	150	150
PL2-F25-N4-K	100	100
PL3-F25-N4-K	100	100
PL2-F25-SN4-K	100	150
PL3-F25-SN4-K	100	150

1.2 开关盒与关联设备共同构成本安防爆系统时，必须同时满足下列要求：

$$U_o \leq U_i, I_o \leq I_i, P_o \leq P_i, C_o \geq C_i + C_c, L_o \geq L_i + L_c$$

注： $U_o$ 、 $I_o$ 、 $P_o$ 、 $C_o$ 和 $L_o$ 分别代表关联设备的输出参数及外部允许参数；

$C_c$ 和 $L_c$ 分别代表连接电缆的分布电容和电感。

2. 防爆标志为Ex nL II CT4~T6的开关盒必须与经防爆认证的关联限能设备配套共同组成“nL”型防爆系统方可使用于现场存在爆炸性气体混合物的危险场所。其系统接线必须同时遵守开关盒和所配关联限能设备的使用说明书要求，接线端子不得接错。

2.1 限能参数及内部最大等效参数如下：

内置开关型号：V3

最高输入电压 $U_i$ (V)	最大输入电流 $I_i$ (mA)	最大输入功率 $P_i$ (W)	最大内部等效参数	
			$C_i$ (nF)	$L_i$ (mH)
30	300	1.2	0	0

内置开关型号：PL2-F25-N4-K、PL3-F25-N4-K、PL2-F25-SN4-K和PL3-F25-SN4-K

类型代号	最高输入电压 $U_i$ (V)	最大输入电流 $I_i$ (mA)	最大输入功率 $P_i$ (mW)
type1	20	25	34
type2	20	25	64
type3	20	52	169

其余内置开关：

类型代号	最高输入电压 $U_i$ (V)	最大输入电流 $I_i$ (mA)	最大输入功率 $P_i$ (mW)
type1	20	25	34
type2	20	25	64

type3	20	52	169
type4	20	76	242

开关型号	最大内部等效电容 Ci(nF)	最大内部等效电感 Li(μH)
SJ3, 5-SN	30	100
SJ3, 5-N	50	250
SJ5-N	50	250
NJ2-11-N-G	30	50
NJ2-11-SN	50	150
NJ2-V3-N	40	50
NJ4-12GK-N	45	50
NJ5-11-N-G	45	50
SC3, 5-G-N0	150	150
PL2-F25-N4-K	100	100
PL3-F25-N4-K	100	100
PL2-F25-SN4-K	100	150
PL3-F25-SN4-K	100	150

2.2 接近开关与关联限能设备共同构成“nL”型防爆系统时，必须同时满足下列要求：

$$U_o \leq U_i, I_o \leq I_i, P_o \leq P_i, C_o \geq C_i + C_c, L_o \geq L_i + L_c.$$

注：U<sub>o</sub>、I<sub>o</sub>、P<sub>o</sub>、C<sub>o</sub>和L<sub>o</sub>分别代表关联限能设备的输出参数及外部允许参数；

C<sub>c</sub>和L<sub>c</sub>分别代表连接电缆的分布电容和电感。

3. 开关盒使用时电缆引入装置的安装必须保证外壳防护等级达到IP65（符合GB4208-1993标准要求）以上。

4. 应当保持产品外壳表面清洁，以防粉尘堆积，但严禁用压缩空气吹扫。

5. 用户不得自行更换该产品的零部件，应会同产品制造商共同解决运行中出现的故障，以杜绝损坏现象的发生。

6. 产品的安装、使用和维护应同时遵守产品说明书、GB3836.13-1997“爆炸性气体环境用电气设备 第13部分：爆炸性气体环境用电气设备的检修”、GB3836.15-2000“爆炸性气

体环境用电气设备 第15部分：危险场所电气安装（煤矿除外）”、GB50257-1996“电气装置安装工程爆炸和火灾危险环境 电气装置施工及验收规范”及GB15577-1995“粉尘防爆安全规程”的有关规定。

### 三、制造厂责任

1. 产品制造厂必须将上述使用注意事项纳入该产品使用说明书；
2. 制造厂必须严格按照NEPSI认可的文件资料生产。
3. 产品铭牌中必须补充下列内容：
  - 3.1 NEPSI认可标志
  - 3.2 防爆合格证号





# EXPLOSION PROTECTION CERTIFICATE OF CONFORMITY

Cert No. GYJ071072X

This is to certify that the product

Switch Box

manufactured by Emerson Process Management, Valve Automation Division  
(Address: Asveldweg 11, 7556 BR Hengelo, The Netherlands)

which model is HD - IS□

Ex marking Ex ia II CT4~T6; Ex nL II CT4~T6; DIP A20 T<sub>A</sub>44°C~80°C

product standard

drawing number C0349 - 01、C0349 - 02、C0623 - 01、C0623 - 02

has been inspected and certified by NEPSI, and that it conforms  
to GB3836.1/4 - 2000、GB3836.8 - 2003、GB12476.1 - 2000

This Approval shall remain in force until 2012.03.25

- Remarks:
1. Approved type, temperature classification, and special requirements for safe use are specified in the attachment to this certificate.
  2. Intrinsically safe parameters and energy limited parameters: see attachment to this certificate.

Director

National Supervision and Inspection Centre for  
Explosion Protection and Safety of Instrumentation

Issued Date 2007.03.26



This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

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# EXPLOSION PROTECTION

## CERTIFICATE OF CONFORMITY

Cert No. GYJ071073X

This is to certify that the product

Switch Box

manufactured by Emerson Process Management, Valve Automation Division  
(Address: Asveldweg 11, 7556 BR Hengelo, The Netherlands)

which model is LDNA - IS

Ex marking Ex ia II CT4~T6; Ex nL II CT4~T6; DIP A20/21 T<sub>A</sub>44°C~80°C

product standard —

drawing number C0349 - 01、C0349 - 02、C0623 - 01、C0623 - 02

has been inspected and certified by NEPSI, and that it conforms  
to GB3836.1/4 - 2000、GB3836.8 - 2003、GB12476.1 - 2000

This Approval shall remain in force until 2012.03.25

- Remarks**
1. Approved type, temperature classification and special requirements for safe use are specified in the attachment to this certificate.
  2. Intrinsically safe parameters and energy limited parameters: see attachment to this certificate.

Director

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# EXPLOSION PROTECTION CERTIFICATE OF CONFORMITY

Cert No. GYJ071074X

This is to certify that the product

Switch Box

manufactured by Emerson Process Management, Valve Automation Division  
(Address: Asveldweg 11, 7556 BR Hengelo, The Netherlands)

which model is LDN - IS□

Ex marking Ex ia II CT4~T6; Ex nL II CT4~T6

product standard —

drawing number C0349 - 01、C0349 - 02、C0623 - 01、C0623 - 02

has been inspected and certified by NEPSI, and that it conforms  
to GB3836.1/4 - 2000、GB3836.8 - 2003

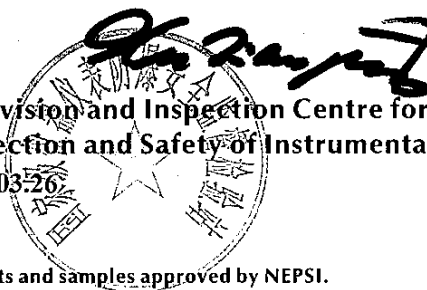
This Approval shall remain in force until 2012.03.25

- Remarks**
1. Approved type, temperature classification and special requirements for safe use are specified in the attachment to this certificate.
  2. Intrinsically safe parameters and energy limited parameters: see attachment to this certificate.

Director

National Supervision and Inspection Centre for  
Explosion Protection and Safety of Instrumentation

Issued Date 2007.03-26



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# 国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for  
Explosion Protection and Safety of Instrumentation

(GYJ071072X~GYJ071074X)

(Attachment I)

## Attachment I (Translation)

Switch Box types HD - IS□, LDNA - IS□ and LDN - IS□ series, manufactured by Emerson Process Management, Valve Automation Division, have been approved by National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI) in accordance with the following standards:

- GB3836.1-2000 Electrical apparatus for explosive gas atmospheres  
Part 1: General requirements
- GB3836.4-2000 Electrical apparatus for explosive gas atmospheres  
Part 4: Intrinsic safety "i"
- GB3836.8-2003 Electrical apparatus for explosive gas atmospheres  
Part 8: Type of protection "n"
- GB12476.1 - 2000 Electrical apparatus for use in the presence of combustible dust  
Part 1-1: Electrical apparatus protected by enclosures and surface temperature limitation - Specification for apparatus

The switch box satisfies at least degree of protection IP65 according GB4208-1993.

Type	Cert. No.	Ex Marking
HD - IS□	GYJ071072X	Ex ia II CT4~T6 Ex nL II CT4~T6 DIP A20 T <sub>a</sub> 44°C~80°C
LDNA - IS□	GYJ071073X	Ex ia II CT4~T6 Ex nL II CT4~T6 DIP A20/21 T <sub>a</sub> 44°C~80°C
LDN - IS□	GYJ071074X	Ex ia II CT4~T6 Ex nL II CT4~T6

The relation between the switch type, the switch box type and the permissible hazardous area are as below:

Switch type	HD series		LDNA series		LDN series	
	Type	Hazardous area	Type	Hazardous area	Type	Hazardous area
SJ3, 5-SN	HD-IS1	Zone 0 Zone 20	LDNA-IS1	Zone 0 Zone 20	LDN-IS1	Zone 0 Zone 20
SJ3, 5-N	HD-IS2	Zone 0 Zone 20	LDNA-IS2	Zone 0 Zone 20	LDN-IS2	Zone 0 Zone 20
SJ5-N	HD-IS3	Zone 0 Zone 20	LDNA-IS3	Zone 0 Zone 20	LDN-IS3	Zone 0 Zone 20
NJ2-11-N-G	—		LDNA-IS4	Zone 0 Zone 20	LDN-IS4	Zone 0 Zone 20
NJ2-11-SN	—		LDNA-IS5	Zone 0 Zone 20	LDN-IS5	Zone 0 Zone 20
NJ2-V3-N	HD-IS6	Zone 0 Zone 20	LDNA-IS6	Zone 0 Zone 20	LDN-IS6	Zone 0 Zone 20
V3	HD-IS7	Zone 0 Zone 20	LDNA-IS7	Zone 0 Zone 20	LDN-IS7	Zone 0 Zone 20
PL2-F25-N4-K	—	—	LDNA-IS8	Zone 1 Zone 21	LDN-IS8	Zone 1 Zone 21
PL3-F25-N4-K	—	—	LDNA-IS9	Zone 1 Zone 21	LDN-IS9	Zone 1 Zone 21
SC3, 5-G-N0	HD-IS10	Zone 0 Zone 20	LDNA-IS10	Zone 0 Zone 20	LDN-IS10	Zone 0 Zone 20
PL2-F25-SN4-K	—	—	LDNA-IS11	Zone 1 Zone 21	LDN-IS11	Zone 1 Zone 21
PL3-F25-SN4-K	—	—	LDNA-IS12	Zone 1 Zone 21	LDN-IS12	Zone 1 Zone 21
NJ4-12GK-N	—	—	LDNA-IS13	Zone 1 Zone 21	LDN-IS13	Zone 1 Zone 21
NJ5-11-N-G	—	—	LDNA-IS14	Zone 1 Zone 21	LDN-IS14	Zone 1 Zone 21

Note: 1. Switch box with Ex Marking of Ex ia II CT4~T6 which is permitted to use in Zone 0 for explosive gas atmospheres, can also be installed in Zone 1 or Zone 2. The box which is permitted to use in Zone 1 for explosive gas atmospheres, can also be installed in Zone 2.

2. Switch box with Ex Marking of Ex nL II CT4~T6 can only be used in Zone 2 for explosive gas atmospheres.

3. Switch box with Ex Marking of DIP A20 T<sub>A</sub>44°C~80°C which is permitted to use in Zone 20 for combustible dust atmospheres, can also be installed in Zone 21 or Zone 22. The box with Ex Marking of DIP A21 T<sub>A</sub>44°C~80°C which is permitted to use in Zone 21 for combustible dust atmospheres, can also be installed in Zone 22.



## 1. SPECIAL CONDITIONS FOR SAFE USE

When the sign "X" is placed after the certificate number, it indicates that the switch box is subject to special conditions for safe use.

1.1 The minimum ambient temperature of the Switch Box is  $-25^{\circ}\text{C}$ .

1.2 The temperature class T and the maximum surface temperature  $T_A$  for the switch box using the switch type V3, is determined by the ambient temperature in all cases.

1.3 The permissible maximum ambient temperature for the other switch boxes are as below:

1.3.1 The maximum ambient temperature in relation to the switch type and the temperature class for the switch boxes types LDNA-IS□ and HD-IS□ for Zone 0 is as below. For type LDN-IS□ the values of the maximum ambient temperature shall be reduced by  $10^{\circ}\text{C}$ .

Switch type	Maximum ambient temperatures ( $^{\circ}\text{C}$ )											
	type1			type2			type3			type4		
	T4	T5	T6	T4	T5	T6	T4	T5	T6	T4	T5	T6
SJ3, 5-SN	80	68	56	80	61	49	68	40	28	53	25	13
SJ3, 5-N	80	68	56	80	61	49	68	40	28	53	25	13
SJ5-N	80	68	56	80	61	49	68	40	28	53	25	13
NJ2-11-N-G	80	71	59	80	68	56	68	57	45	63	49	37
NJ2-11-SN	80	68	56	80	61	49	68	40	28	53	25	13
NJ2-V3-N	80	68	56	80	61	49	68	40	28	53	25	13
SC3, 5-G-N0	80	68	56	80	61	49	68	40	28	53	25	13

1.3.2 The maximum ambient temperature in relation to the switch type and the maximum surface temperature  $T_A$  for the switch boxes types LDNA-IS□ and HD-IS□ for Zone 20 is as below:

Switch type	Maximum ambient temperatures ( $^{\circ}\text{C}$ )								
	type1			type2			type3		
	40	70	77	40	70	74	40	60	80
Surface temperature $T_A$ ( $^{\circ}\text{C}$ )									
SJ3, 5-SN	44	73	80	48	76	80	60	80	-
SJ3, 5-N	44	73	80	48	76	80	60	80	-
SJ5-N	44	73	80	48	76	80	60	80	-

NJ2-11-N-G	44	73	80	48	76	80	60	80	-
NJ2-11-SN	44	73	80	48	76	80	60	80	-
NJ2-V3-N	44	73	80	48	76	80	60	80	-
SC3, 5-G-N0	44	73	80	48	76	80	60	80	-

1.3.3 The maximum ambient temperature in relation to the switch type and the temperature class for the switch boxes types LDNA-IS□ and HD-IS□ for Zone 1 is as below. For type LDN-IS□ the values of the maximum ambient temperature shall be reduced by 10°C.

Switch type	Maximum ambient temperatures (°C)											
	type1			type2			type3			type4		
	T4	T5	T6	T4	T5	T6	T4	T5	T6	T4	T5	T6
SJ3, 5-SN	80	80	73	80	80	66	80	60	45	74	45	30
SJ3, 5-N	80	80	73	80	80	66	80	60	45	74	45	30
SJ5-N	80	80	73	80	80	66	80	60	45	74	45	30
NJ2-11-N-G	80	80	76	80	80	73	80	77	62	63	63	54
NJ2-11-SN	80	80	73	80	80	66	80	60	45	74	45	30
NJ2-V3-N	80	80	73	80	80	66	80	60	45	74	45	30
NJ4-12GK-N	80	80	73	80	80	69	80	66	51	61	54	39
NJ5-11-N-G	80	80	72	80	80	65	80	57	42	63	41	26
SC3, 5-G-N0	80	80	73	80	80	66	80	60	45	74	45	30
PL2-F25-N4-K	80	77	62	80	77	62	80	66	51	-	-	-
PL3-F25-N4-K	80	77	62	80	77	62	80	66	51	-	-	-
PL2-F25-SN4-K	80	77	62	80	77	62	80	66	51	-	-	-
PL3-F25-SN4-K	80	77	62	80	77	62	80	66	51	-	-	-

1.3.4 The maximum ambient temperature in relation to the switch type and the maximum surface temperature  $T_A$  for the switch boxes types LDNA-IS□ and HD-IS□ for Zone 21 is as below:

Switch type	Maximum ambient temperatures (°C)											
	type1			type2			type3			type4		
	40	60	70	40	50	66	40	50	60	40	-	-
Surface temperature $T_A$ (°C)												
SJ3, 5-SN	44	63	73	48	58	72	60	70	80	80	-	-

SJ3, 5-N	44	63	73	48	58	72	60	70	80	80	-	-
SJ5-N	44	63	73	48	58	72	60	70	80	80	-	-
NJ2-11-N-G	44	63	73	48	58	72	60	70	80	80	-	-
NJ2-11-SN	44	63	73	48	58	72	60	70	80	80	-	-
NJ2-V3-N	44	63	73	48	58	72	60	70	80	80	-	-
NJ4-12GK-N	48	68	80	51	61	80	64	80	-	80	-	-
NJ5-11-N-G	49	69	80	54	64	80	70	80	-	80	-	-
SC3, 5-G-N0	44	64	73	48	58	74	60	70	80	80	-	-

Switch type	Maximum ambient temperatures (°C)								
	type1			type2			type3		
	40	50	64	40	50	64	40	50	-
	Surface temperature TA(°C)								
PL2-F25-N4-K	56	66	80	56	66	80	64	80	-
PL3-F25-N4-K	56	66	80	56	66	80	64	80	-
PL2-F25-SN4-K	56	66	80	56	66	80	64	80	-
PL3-F25-SN4-K	56	66	80	56	66	80	64	80	-

## 2. SPECIAL REQUIREMENTS

2.1 Only be connected to the certified associated apparatus, the switch box with Ex Marking of Ex ia II CT4~T6 could be used in the explosive atmosphere. The connection should be complied with the requirements of the manual of the associated apparatus and the switch box.

2.1.1 The maximum values for connection to a certified associated apparatus are shown in the table below:

Switch type: V3

Max. input voltage Ui (V)	Max. input current Ii (mA)	Max. input power Pi (W)	Max. internal parameter	
			Ci(nF)	Li(mH)
30	300	1.2	0	0

Switch type: PL2-F25-N4-K,PL3-F25-N4-K,PL2-F25-SN4-K and PL3-F25-SN4-K

Switch Type	Max. input voltage Ui (V)	Max. input current Ii (mA)	Max. input power Pi (mW)
type1	15	25	34
type2	15	25	64
type3	15	52	169

The other switches:

Switch Type	Max. input voltage Ui (V)	Max. input current Ii (mA)	Max. input power Pi (mW)
type1	16	25	34
type2	16	25	64
type3	16	52	169
type4	16	76	242

Switch Type	Max. internal parameter capacitance Ci(nF)	Max. internal parameter inductance Li(μH)
SJ3, 5-SN	30	100
SJ3, 5-N	50	250
SJ5-N	50	250
NJ2-11-N-G	30	50
NJ2-11-SN	50	150
NJ2-V3-N	40	50
NJ4-12GK-N	45	50
NJ5-11-N-G	45	50
SC3, 5-G-N0	150	150
PL2-F25-N4-K	100	100
PL3-F25-N4-K	100	100
PL2-F25-SN4-K	100	150
PL3-F25-SN4-K	100	150

2.1.2 The criteria for interconnection between the switch box and the associated apparatus is as below:

$$U_o \leq U_i, I_o \leq I_i, P_o \leq P_i, C_o \geq C_i + C_c, L_o \geq L_i + L_c.$$

Note:  $U_o, I_o, P_o, C_o$  and  $L_o$  stand for output parameters of the associated apparatus;

$C_c$  and  $L_c$  stand for distributed capacitance and distributed inductance of cable.

2.2 Only be connected to the certified associated energy-limited apparatus, the switch box with Ex Marking of Ex nL II CT4~T6 could be used in the explosive atmosphere. The connection should be complied with the requirements of the manual of the associated apparatus and the switch box.

2.2.1 The maximum values for connection to a certified associated energy-limited apparatus are shown in the table below:

Switch type: V3

Max. input voltage $U_i$ (V)	Max. input current $I_i$ (mA)	Max. input power $P_i$ (W)	Max. internal parameter	
			$C_i$ (nF)	$L_i$ (mH)
30	300	1.2	0	0

Switch type: PL2-F25-N4-K, PL3-F25-N4-K, PL2-F25-SN4-K and PL3-F25-SN4-K

Switch Type	Max. input voltage $U_i$ (V)	Max. input current $I_i$ (mA)	Max. input power $P_i$ (mW)
type1	20	25	34
type2	20	25	64
type3	20	52	169

The other switches:

Switch Type	Max. input voltage $U_i$ (V)	Max. input current $I_i$ (mA)	Max. input power $P_i$ (mW)
type1	20	25	34
type2	20	25	64
type3	20	52	169
type4	20	76	242

Switch Type	Max. internal parameter capacitance $C_i$ (nF)	Max. internal parameter inductance $L_i$ ( $\mu$ H)
SJ3, 5-SN	30	100

SJ3, 5-N	50	250
SJ5-N	50	250
NJ2-11-N-G	30	50
NJ2-11-SN	50	150
NJ2-V3-N	40	50
NJ4-12GK-N	45	50
NJ5-11-N-G	45	50
SC3, 5-G-N0	150	150
PL2-F25-N4-K	100	100
PL3-F25-N4-K	100	100
PL2-F25-SN4-K	100	150
PL3-F25-SN4-K	100	150

2.2.2 The criteria for interconnection between the switch box and the associated energy-limited apparatus is as below:

$$U_o \leq U_i, I_o \leq I_i, P_o \leq P_i, C_o \geq C_i + C_c, L_o \geq L_i + L_c.$$

Note:  $U_o$ ,  $I_o$ ,  $P_o$ ,  $C_o$  and  $L_o$  stand for output parameters of the associated energy-limited apparatus;

$C_c$  and  $L_c$  stand for distributed capacitance and distributed inductance of cable.

2.3 The cable entry holes have to be connected by means of suitable cable entry device, the way of being installed shall be ensure that the switch box satisfies degree of protection IP65 according to GB4208-1993.

2.4 The enclosure of the switch box shall be kept from the dust, but the dust shall be not blown by compressed air.

2.5 Forbid user to change the configuration to ensure the equipment's explosion protection performance. Whatever should be done only by experts from the manufacturer.

2.6 When installation, operation and maintenance the switch box, users should comply with the relevant requirements of the product instruction manual, GB3836.13-1997 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres", GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)", GB50257-1996 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering" and GB15577-1995 "Safety regulations for the protection of dust explosion".

### 3. MANUFACTURER'S RESPONSIBILITY

3.1 The instruction manual should include all the items mentioned above.

3.2 The manufacturer must strictly produce according to the documents approved by NEPSI.

3.3 The following contents are included to the nameplate of the switch box:

3.3.1 Identification of NEPSI.

3.3.2 Marking and Certificate No.

National Supervision and Inspection Center  
For Explosion Protection and Safety of Instrumentation



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