



CENTRO DE PESQUISAS DE ENERGIA ELÉTRICA

Organismo de Certificação Acreditado pela Cgcre



Certificado de Conformidade

Certificate of Conformity / Certificado de Conformidad

Número:
Number
Número

CEPEL 08.1718

Emissão:
Issue
Expedición

18/05/2016

Validade:
Validity
Validez

17/05/2019

Produto: **INTRINSIC SAFE COIL WITH CIRCUIT and LOW POWER INTRINSIC SAFE COIL**
Product
Producto

Tipo/Modelo: **62, 66 with all combination & variation – (INTRINSIC SAFE COIL WITH CIRCUIT)**
Type – Model
Tipo – Modelo **67,67L, 65-CR, 71 and 71L with all combination & variation (LOW POWER INTRINSIC SAFE COIL)**

Número de Série: ---
Serial Number
Número de Serie

Solicitante/Endereço: **ROTEX AUTOMATION LIMITED**
Requester – Address
Solicitante – Dirección **987/11, GIDC – Makapura
Vadodora 390010
Índia**

Fabricante/Endereço: **The same.**
Manufacturer – Address
Fabricante – Dirección

Norma(s) Aplicáveis: ABNT NBR IEC 60079-0:2008 Explosive Atmospheres – Part 0: Equipments – General Requirements;
Suitable Standard(s)
Norma(s) de Aplicación ABNT NBR IEC 60079-1:2009 Explosive Atmospheres – Part 1: Equipment protection by flameproof enclosures “d”;
ABNT NBR IEC 60079-11:2009 Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety “i”;
ABNT NBR IEC 60529:2009 Degree of protection for enclosures of electrical equipments (IP code).

Laboratório de Ensaio: **CEPEL – Centro de Pesquisas de Energia Elétrica**
Testing Laboratory
Laboratório de Ensayo **Laboratório de Acionamentos e Segurança em Equipamentos Eletroeletrônicos – AP4**

Número do Relatório: **RAV-CERT-EX-1659/09 and RAV-EX-4605/13.**
Report Number
Número del Informe **RASQ-EX-20663/16**

Marcação:
Marking
Marcação

Complete marking presented in the pages 2 e 3.

Condições de Emissão: According to INMETRO Directive 179 dated May 18th, 2010. Model with Evaluation of the Quality System of the Manufacturer and tests on the product. Process of assessment of the product approved on 128ª Meeting of the Certification CCEX in 21/01/2009. Process of assessment of the Quality System approved on 197ª CCEX in 24/09/2015.
Conditions of Issue
Condiciones de Expedición - The letters “X” or “U” after the conformity certificate's reference, mean that there is a special condition that must be analysed at the momento of installation (see remarks field).

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Número da Emissão: **03** Emissão original: **19/01/2009**
Issue number
Número de la Expedición Original Issue
Expedición Original

Carlos Azevedo Sanguedo
SIGNATÁRIO AUTORIZADO
Authorized Signatory
Persona Autorizada

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The devices solenoids with name: **INTRINSIC SAFE COIL WITH CIRCUIT and LOW POWER INTRINSIC SAFE COIL**, manufactured by **ROTEX AUTOMATION LIMITED**, are bellow qualified in terms of their specifications, analysis and tests performed.

Specifications:

Low Power Intrinsic Safe Coil is used for operating the valve plunger through solenoid and is designed in accordance to type of protection intrinsic safe, category "ia". Low Power Intrinsic Safe Coil Plug in type enclosure.

- Entrance parameter of the Low Power Intrinsic Safe Coil: Type Plug -In (65-CR)

Table 4

Parameter	Value
Open circuit voltage (Ui)	$\leq 32 \text{ V}$
Short circuit current (Ii)	$\leq 75 \text{ mA}$,
Power (Pi)	0,75 W,
Inductance (Li)	0
Capacitance (Ci)	0

Marking for Low Power IS Coil

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Type	Description	Marking
65-CR	Low Power Intrinsic Safe Coil, enclosure Plug in.	Ex ia IIC T6 Gb IP67 $-40^\circ\text{C} \leq T_a \leq 70^\circ\text{C}$ Wiring parameters: See table 4

The Intrinsically Safe Coil with Circuit (Type 66 & Type 62) is designed to lift the plunger and to hold it up with low power, until the coil is de-energised:

The equipment consists of a metallic enclosure with metallic cover secured with socket head screws, within which the coil winding, terminal block and booster electronic circuit are encapsulated in epoxy. Connections are made through the cable entry onto the connector block with screw terminals. The Low Power IS Coil (Type 71, Type 71L, Type 67 and Type 67L) is designed to operate a solenoid, until the coil is deenergised. The equipment consists of a metallic box type enclosure with metallic cover secured with socket head screws, within which the coil winding encapsulated in epoxy and terminal block are located. Connections are made through the cable entry onto the connector block with screw terminals.

The aluminium enclosure version must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact from iron/steel.

Only suitably certified cable glands shall be used with this equipment.

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User Terminals for Type 62 (Size-IV), 66 (Size- III), 67 (Size- III), 67L(Size- IV), 71(Size- III) & 71L(Size- IV).
Basic Type Cable Entry – M25 x 1.5
NS = M25 x 1.5 (M) to ½ " NPT
MS = M25 x 1.5 (M) to M20 x 1.5 NPT
ML = M25 x 1.5 (M) to ¾ " NPT

Ui =32Vdc
Ii =230mA
Pi =2.3W
Ci =0
Li =0

Marking:

The marking of the **INTRINSICALLY SAFE COIL WITH CIRCUIT & LOW POWER INTRINSIC SAFE COIL**, shall contain the followings information:

Segurança  	
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Type	Marking
62, 66, 67, 67L, 71 and 71L with Aluminium Enclosure	Ex ia IIC T5 Ga (-60°C ≤ Ta ≤ +75°C) Ex ia IIC T6 Ga (-60°C ≤ Ta ≤ +60°C) Ex ia IIIC T ₂₀₀ 125°C IP67 Da (-60°C ≤ Ta ≤ +75°C)
62, 66, 67, 67L, 71 and 71L with SS Enclosure	Ex ia IIC T5 Ga (-60°C ≤ Ta ≤ +75°C) Ex ia IIC T6 Ga (-60°C ≤ Ta ≤ +60°C) Ex ia IIIC T ₂₀₀ 125°C IP67 Da (-60°C ≤ Ta ≤ +75°C) Ex ia I Ma (-60°C ≤ Ta ≤ +75°C)

Analysis and tests performed:

Product assessment following the requirements of the Standards IEC 60079-0:00, IEC 60079-1:01, IEC 60079-11:99 IEC 60529:01. Results recorded in Report RAV-CERT-EX-1659/09, RAV-EX-4605/13 and Test Report GS/SAS/ExTR 12.0308/00

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Descriptive documentation of the equipment (filed together to the equipment process - confidential):

Code	Description	Rev.	Date
11-INMETRO-10403	Name Plate for IS coil with Circuit & Low Power IS Coil	00	30/05/2015
11-INMETRO-30504	Name Plate for LOW POWER IS Coil – Plug In	01	30/05/2015
11-DNV-30701	Low Power IS Coil Enclosure: Plug In	00	27/03/2005
II-BASEEFA-I0401	IS coil with circuit - Size-III Type-66 Size IV, Type-62	02	04/12/2012
II-BASEEFA-30501-1	Low Power IS Coil (Bottom Cable Entry) Type-71 (IECEx ia)	04	04/12/2012
GS/SAS/ExTR 12.0308/00	Low Power IS Coil (Horizontal Cable Entry) Type-67 (IEC Ex ia)	02	04.12.2012
II-BASEEFA-I0403/AL	Name plate for IS Solenoid (AI enclosure)	04	04/12/2012
11 -BASEEFA-I0403/SS	Name plate for IS Solenoid (SS enclosure)	04	04/12/2012
II -BASEEFA-I0406	Intrinsically Safe Solenoid Coil Driver Circuit	01	04/12/2012
11-BASEEFA-I0406	Intrinsically Safe Solenoid Coil Driver Circuit (Parts List)	01	04/12/2012
II-BASEEFA-I0406	AB-PCB-322 ComponentSide	00	04/12/2012
II -BASEEF A-I 0406	AB-PCB-322 Solder Side	00	04/12/2012
II-BASEEFA-I0406	AB-PCB-322 Solder Side Screen	00	04/12/2012
I1 -BASEEF A-I 0406	AB-PCB-322 Component Side Screen	00	04/12/2012
I1-BASEEF A-I 0407	Low Power IS PCB	00	04/12/2012
II-BASEEF A-30503	Low Power IS Coil (Circuit Diagram)	00	04/12/2012

Remarks:

1. This Certificate is only valid to the Coils effectively tested. Any modification in the design or using of the different material those defined by descriptive documentation of the equipment without CEPEL's authorization, will invalid this Certificate;
2. The activity of installation, inspection, maintenance, repair, revision and, recovery of the solenoids are responsibility of the users and shall be performed in accordance with the requirements of valid technical Standards and in accordance with the manufacturer recommendation;
3. The marking shall be done in accordance with the Standard ABNT NBR IEC 60079-0:2008 and with the Requirement for assessment of the conformity for electrical equipment for Explosive Atmospheres compound by gas and flammable steams and shall be fixed in the external surface of the equipment in a visible local. This marking shall be clear and durable considering possible chemical corrosion.

Nova Iguaçu RJ, June 6th, 2016

Carlos Azevedo Sanguedo
Responsable of Certification

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Validity of the Certificate: 17/05/2019

Control of issue:

Date	Issue	Description
18/05/2012	01	First issue in accordance with Directive 179 issued in 18/05/2010.
18/05/2015	02	Second issue of the certificate in accordance with Directive Inmetro 179 issued in May, 18 th 2010. Issue with extending of the validity for conclusion of the renewal process including audit at the costumer facilities.
18/06/2016	03	Third issue in accordance with Directive Inmetro 179, issued in 18/05/2010, conforming RASQ-EX-20663/16.

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