

- (2) **Equipment and protective systems intended for use in potentially explosive atmospheres  
Directive 94/9/EC**

(1) **EC-TYPE EXAMINATION CERTIFICATE**

- (3) Number of the EC type examination certificate: **INERIS 08ATEX0012X**

- (4) Equipment or protective system:

**Thermal overload Relay Type LRD3, LR3D3**

- (5) Manufacturer: **Schneider Electric / Telemecanique**

- (6) Address: **31, rue Pierre MENDES-FRANCE  
F-38320 EYBENS - FRANCE**

- (7) This equipment or protective system and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

- (8) The INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23<sup>rd</sup> March 1994, certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in annex II of the Directive.


- The examinations and the tests are consigned in confidential INERIS report No 96367 / 08.

- (9) The respect of the Essential Health and Safety Requirements is ensured by conformity with :

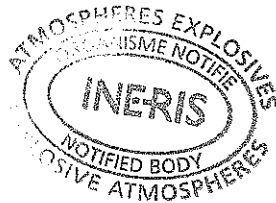
- EN 61508 (parts 1 and 2) of December 2001 : SIL 1
- EN 954-1 (December 1996) and EN ISO 13849-2 of August 2003 : category 2.
- prEN50495 (2006) - Safety devices required for the safe functioning of equipment with respect to explosion risks.
- IEC 60947-4-1 : 2000 ed. 2 + A1:2002 + A2:2005 (addendum 28/06/2005)
- IEC 60947-5.1 - 12/11/2003 ed. 3

- (10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of 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 this certificate.
- (12) The marking of the equipment or the protective system will have to contain:

 II (2) GD

Verneuil-en-Halatte, 2008 09 17



  
Director of the Certifying Body,  
By delegation  
T. HOUPIX  
Certification Officer  
Certification Division

(13)

## **A N N E X**

(14)

**EC TYPE EXAMINATION CERTIFICATE N° INERIS 08ATEX0012X**

(15)

### **DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM**

Thermal overload relays of type **LRD3**, **LR3D3** (type designation for Schneider Electric / Telemecanique) are cabled to be crossed by the current of the engine to protect. These thermal-overloads are to be used in connection with suitable contactors as Telemecanique / Schneider Electric Ref. LC1D models, to protect non-explosion-protected motors and explosion-protected motors. An overload of this current causes a rise in the consumed current which is detected by the device by means of an overload release with current dependent delay on bimetallic basis.

Thermal overload relays of type **LRD3**, **LR3D3** are available for different current setting ranges covering 9 A to 65 A.

The architecture of Thermal overload relays meets the qualitative and quantitative requirements of :

- **Category 2** according to EN 954-1 - and
- **SIL 1** according to EN 61508 parts 1 and 2 (table 2).

The data of the motor manufacturer and/or the data regarding explosion protection given in the Certificate of Conformity or in the EC-type-examination Certificate for explosion protected motors of the "Increased Safety" type of protection must be taken into account.

The Thermal overload relays of type **LRD3**, **LR3D3** may be installed only outside potentially explosive atmospheres for the protection of explosion-protected motors. When the Thermal protection relays of type **LRD3**, **LR3D3** are used in potentially explosive atmospheres, they must be of the type of protection required.

Thermal overload relays of type **LRD3**, **LR3D3** have been tested according to suitable test conditions by LCIE according IEC system for mutual recognition of test certificates for electrical equipment (IECEE) CB scheme with the use of the following standards :

IEC 60947-4-1 version 2000 ed. 2 + A1:2002 + A2:2005 (amendement 28/06/2005)  
IEC 60947-5.1 version 12/11/2003 ed. 3

The certificates references are :

**LCIE No. 562261-00 to 562261-04 2008-01-25**

Additional information can be download from the internet website <http://www.schneider-electric.com>

### **MARKING**

Marking has to be readable and indelible; it has to include the following indications:


**Schneider Electric and / or Telemecanique**

**Type LRD3, LR3D3**

**INERIS 08ATEX0012X**

(Serial number)

(Year of manufacturing)

 II (2) GD

The devices taken into account in this EC type examination certificate comprises 2 kind of products :

Type LRD3 : LRD3 X-Y-Z

and

Type LR3D3 : LR3D3 X-Y-Z

Type LRD3 is Differential Type, and LR3D3 type is Non-differentiel type (and is available only for Class 10A products type).

X - Y - and Z letters indicates :

Calibre Designation (7 calibre)	Class Designation (2 classes)	Connection Type Designation (3 types)
<b>X</b>	<b>Y</b>	<b>Z</b>
13 - 18 - 25 - 32 - 40 - 50 or 65	No marking or L	No marking or 3 or 6

#### **Designation of the 7 calibre / product range for "thermal trip setting range"**

13 - 9-13A  
18 - 12-18A  
25 - 17-25A  
32 - 23-32A  
40 - 30-40A  
50 - 37-50A  
65 - 48-65A

#### **Designation for the "Overload Relay Class"**

None - Class 10A  
L - Class 20

#### **Designation of connection Type**

None - Power / Control - "Everlink" connector / screw  
3 - Power / Control - "Everlink" connector / spring connectors.  
6 - Power / Control - ring lug connector / ring lug connector.

**+ WARNINGS**

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

**ROUTINE EXAMINATIONS AND TESTS**

None.

**(16) DESCRIPTIVE DOCUMENTS**

The descriptive documents quoted hereafter constitute the technical documentation of the equipment, subject of this certificate.

- Descriptive notice signed September 2008
- Instruction notice signed September 2008
- INERIS safety analysis « *Etude de sécurité de gammes de composants de sécurité - Relais-thermiques LRD3, LR3D3 utilisables en ATEX* » report n° 96367 / 08 signed September 2008

**(17) SPECIAL CONDITIONS FOR SAFE USE**

The special conditions for safe use are mentioned in the instruction notice of the safety device.

The apparatus must be located out of explosive atmospheres or be protected by a standardised mode of protection.

**(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS**

The respect of the Essential Health and Safety Requirements is ensured by:

- The tests carried out and their positive results mentioned in LCIE certificates mentioned in (15).
- Suitably selected and adjusted safety devices of this type are necessary for the safe operation of motors of the type of protection "increased safety".
- The devices themselves are installed outside potentially explosive atmospheres (article 1, section 1 of ATEX directive 94/9/CE).

## ADDITION

(3) **INERIS 08ATEX0012X/01**

(4) **Thermal overload Relay TYPE LRD3, LR3D3 and LRD 33 - LRD 43**

(5) **Made by Schneider Electric / Telemecanique**

(15) **PURPOSE OF THE ADDITION**

- Extension of the range of certified products LRD3, LR3D3 by the introduction product range LRD 33- LRD 43.
- Update of the list of references of the certified products.
- Taking into account of the normative evolution and addition of new standards.
- Extension of marking to mining industries.

The paragraph 9 of the of EC type Examination certificate INERIS 08ATEX0012X is modified as follows:

(9) The respect of the Essential Health and Safety Requirements is guaranted by the conformity to :

EN 61508 (parts 1, 2 and 3) (2010) : SIL 1

EN 954-1 (1996) : category 2

EN ISO 13849-1 (2008) : category 2 PL c

EN50495 (2010) - Safety devices required for the safe functioning of equipment with respect to explosion risks.

And :

For **LRD3, LR3D3** products

IEC 60947-4-1 version 2000 ed. 2 + A1:2002 + A2:2005 (amendement 28/06/2005)

IEC 60947-5.1 version 12/11/2003 ed. 3


For **LRD 33 - LRD 43** products

CEI/IEC 60947-4-1 (2009-09) - Sequence 1


CEI/IEC 60947-5-1 edition 3.0 (2003-11) + Amendment 1 (2009-09) - Sequences 1, 2, 3, 4, 5, 6

The paragraph 12 of the of EC type Examination certificate INERIS 08ATEX0012X is modified as follows:



(12) The marking of the apparatus or protective system shall contain:

 II (2) GD

OR

 I (M2)

OR

 II (2) GD -  I (M2)

The paragraphs 15 and 16 of the of EC type Examination certificate INERIS 08ATEX0012X are modified as follows

**(15) DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM**

Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** (type designation for Schneider Electric / Telemecanique) are cabled to be crossed by the current of the engine to protect. These thermal-overloads are to be used in connection with suitable contactors as Schneider Electric / Telemecanique / Ref. LC1D models, to protect non-explosion-protected motors and explosion-protected motors. An overload of this current causes a rise in the consumed current which is detected by the device by means of an overload release with current dependent delay on bimetallic basis.

Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** are available for different current setting ranges covering 9 A to 140 A.

The architecture of Thermal overload relays meets the qualitative and quantitative requirements of :

- **Category 2** according to EN 954-1 - and
- **Category 2« PL c »** according to EN 13849-1
- **SIL 1** according to EN 61508 parts 1 and 2 (table 2).
- **SIL 1** according to EN 50495.

The data of the motor manufacturer and/or the data regarding explosion protection given in the Certificate of Conformity or in the EC-type-examination Certificate for explosion protected motors of the "Increased Safety" type of protection must be taken into account.

The Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** may be installed only outside potentially explosive atmospheres for the protection of explosion-protected motors. When the Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** are used in potentially explosive atmospheres, they must be of the type of protection required.

Thermal overload relays of type **LRD3**, **LR3D3** have been tested according to suitable test conditions by LCIE according IEC system for mutual recognition of tests certificate for electrical equipment (IECEE) CB SCHEME) according the test conditions mentioned the following standards :

IEC 60947-4-1 version 2000 ed. 2 + A1:2002 + A2:2005 (amendement 28/06/2005)

IEC 60947-5.1 version 12/11/2003 ed. 3

The certificates references are : LCIE No. 562261-00 to 562261-04 2008-01-25

Thermal overload relays of type **LRD 33**, **LRD 43** have been tested according to suitable test conditions by ASEFA according the test conditions mentioned the following standards :

CEI/IEC 60947-4-1 (2009-09) - Sequence 1

CEI/IEC 60947-5-1 edition 3.0 (2003-11) + Amendment 1 (2009-09) - Sequences 1, 2, 3, 4, 5, 6

The certificates references are N° 116-10BT and N° 117-10BT, both dated August 31th 2010

Additional information can be download from the internet website <http://www.schneider-electric.com>

# PARAMETERS RELATED TO SAFETY

The parameters related to safety are modified as follows :

After all parameter setting, it is necessary to check locally the parameters seized in the controller, and to take again the parameter setting if necessary.

## MARKING

The marking is modified as follow :

### SCHNEIDER ELECTRIC

INERIS 08ATEX0012X (\*)

(Batch number including manufacturing date)

⊕ II (2) GD

OR

⊕ I (M2)

OR

⊕ II (2) GD - ⊕ I (M2)

(\*) The information " Batch number including manufacturing date " are not clearly mentioned on the product, because they are available through the specific marking " DATAMATRIX ZONE".

The different products covered by the present certificate are listed below :

The devices taken into account in this EC type examination certificate comprises the following products :

Type LRD3 : LRD3 X-Y-Z

and

Type LR3D3 : LR3D3 X-Y-Z

Type LRD3 is Differential Type, and LR3D3 type is Non-differentiel type (and is available only for Class 10A products type).

X - Y - and Z letters indicates :

Calibre Designation (7 calibres)	Class Designation (2 classes)	Connection Type Designation (3 types)
X	Y	Z
13 - 18 - 25 - 32 - 40 - 50 or 65	No marking or L	No marking or 3 or 6

Designation of the 7 calibre / product range for "thermal trip setting range"

13 - 9-13A  
18 - 12-18A  
25 - 17-25A  
32 - 23-32A  
40 - 30-40A  
50 - 37-50A  
65 - 48-65A

**Designation for the "Overload Relay Class"**

None - Class 10A  
L - Class 20

**Designation of connection Type**

None - Power / Control - "Everlink" connector / screw  
3 - Power / Control - "Everlink" connector / spring connectors.  
6 - Power / Control - ring lug connector / ring lug connector.

**Type LRD33 - LRD 43 :**

LRD	3	3	22	6
I	II	III	IV	V

I - Series designation.

II - Size: 3 or 4

III - Tripping Class (3 → Class 10A)

IV - Setting range (see table)

V - Terminal covers:

Blank: provided (intended for plug in mounting with LC1D contactors)

6: not provided (independent mounting with LA7D3064 terminal block (for LRD3365, LRD3367 and LRD3369 only)

A66: for LRD33 only : ring lung connector version for power terminals

**Further informations are listed below:**

- Relays of the different tripping ranges are similar constructed. Only the bimetallic thermal sensitive part differs.
- "A66" Ring lung connector versions (LRD33 only) : they only differ from others by using specifics power connection in/outlets with suitable holes
- All models have a compensation system against ambient temperature variation (max 40°C inside enclosure)
- The main difference between LRD33 & LRD43 series : a connection part is added at LRD43 to allow plug in assembly with LC1D115-150 contactors.
- Wiring capacity of connecting terminals:
  - largest cross-section : 35 mm<sup>2</sup> for LRD33, 50 mm<sup>2</sup> for LRD43, maximum number of conductors: 1
  - smallest cross-section: 4 mm<sup>2</sup>, maximum number of conductors: 1
  - tightening torque: 9 Nm
- Auxiliary contacts:
  - Type and number of pairs 1 NO+1 NC,
  - Conventional thermal current: 5A
  - Rated insulation voltage: 690V

Detailed electrical ratings of auxiliary contacts and other detailed information are available on Schneider Electric Website.

The product range for LDR 33 and LDR 43 is listed in the following table :

TeSys	Ir (A)	class	type	Bilame	Wire Diameter	Terminal support
LRD3322 (A66)	17...25	10A	differential	Bilame SP23C		Cu-Zn15 H12 sans TS
LRD3353 (A66)	23...32	10A	differential			
LRD3355 (A66)	30...40	10A	differential			
LRD3357 (A66)	37...50	10A	differential			
LRD3359 (A66)	48...65	10A	differential			
LRD3361 (A66)	55...70	10A	differential			
LRD3363 (A66)	63...80	10A	differential			
LRD3365 (A66)	80...104	10A	differential		Ø : 6mm	Cu-ETP + TS Ag
LRD4365	80...104	10A	differential			
LRD4367	95...120	10A	differential			
LRD4369	110...140	10A	differential			
LRD33656	80...104	10A	differential	Refer resp. To LRD3365, LRD 4367, LRD 4369		Cu-ETP + TS Ag
LRD33676	95...120	10A	differential			
LRD33696	110...140	10A	differential			

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

#### ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are unchanged.

(16) **DESCRIPTIVE DOCUMENTS**

The descriptive documents quoted hereafter constitute the technical documentation describing the modification of the equipment, subject of this present addition.

- Descriptive file signed on 2010-09-14
- Instructions notice signed on 2010-09-14

(17) **SPECIAL CONDITIONS FOR SAFE USE**

The special conditions for safe use are unchanged.

(18) **ESSENTIAL SAFETY AND HEALTH REQUIREMENTS**

The respect of the Essential Health and Safety Requirements is unchanged.

Verneuil-en-Halatte, 2010 09 15



Director of the Certifying Body,  
By delegation  
D. CHARPENTIER  
Deputy Manager of Certification

## ADDITION

(3) **INERIS 08ATEX0012X/02**

(4) **THERMAL OVERLOAD RELAY TYPE LRD3, LR3D3 and LRD 33 - LRD 43**

(5) **Made by Schneider Electric / Telemecanique**

(15) **PURPOSE OF THE ADDITION**

- The evolutions are identified in INERIS certification report DSC-16-138721-02728A.
- Extension of references
- New version of standards

The paragraph 9 of the of EC type Examination certificate INERIS 08ATEX0012X is changed by :

EN 50495 July 2010 : SIL 1

EN 61508 (parts 1 and 2) December 2001 : SIL 1

EN 60947-4-1 :2010+A1:2012,

EN 60947-5-1 :2004+A1:2009,

EN 60947-1 :2007+A1:2011

The different types of devices taken into account in this certificate are:

LRD 3312, LRD 3314, LRD 3316, LRD 3321, LRD 3322, LRD 3353, LRD 3355, LRD 3357, LRD 3359, LRD 3361, LRD 3363, LRD 3365, LRD 33656, LRD 33676, LRD 33696, LRD 4365, LRD 4367, LRD 4369 for class 10A.

And

**Type LRD3:** LRD3 X-Y-Z

and

**Type LR3D3:** LR3D3 X-Y-Z

Type LRD3 is Differential Type, and LR3D3 type is Non-differentiel type (and is available only for Class 10A products type).

X - Y - and Z letters indicates:

Calibre Designation (7 calibres)	Class Designation (2 classes)	Connection Type Designation (3 types)
X	Y	Z
13 - 18 - 25 - 32 - 40 - 50 or 65	No marking or L	No marking or 3 or 6

Designation of the 7 calibres / product range for "thermal trip setting range"

13	-	9-13A
18	-	12-18A
25	-	17-25A
32	-	23-32A
40	-	30-40A
50	-	37-50A
65	-	48-65A

(\*) The information " Batch number including manufacturing date " are not clearly mentioned on the product, because they are available through the specific marking " DATAMATRIX ZONE".

Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** (type designation for Schneider Electric / Telemecanique) are cabled to be crossed by the current of the engine to protect. These thermal-overloads are to be used in connection with suitable contactors as Telemecanique / Schneider Electric Ref. LC1D models, to protect non-explosion-protected motors and explosion-protected motors. An overload of this current causes a rise in the consumed current which is detected by the device by means of an overload release with current dependent delay on bimetallic basis.

Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** are available for different current setting ranges covering 9 A to 140 A.

The architecture of Thermal overload relays meets the qualitative and quantitative requirements of :

- **Annex II § 1.5 according to ATEX Directive 94/9/EC - safety device.**
- **SIL 1** according to EN 61508 parts 1 and 2 (table 2).
- **SIL 1** according to EN 50495:2010.

The data of the motor manufacturer and/or the data regarding explosion protection given in the Certificate of Conformity or in the EC-type-examination Certificate for explosion protected motors of the "Increased Safety" type of protection must be taken into account.

The Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** may be installed only outside potentially explosive atmospheres for the protection of explosion-protected motors. When the Thermal overload relays of type **LRD3**, **LR3D3**, **LRD 33**, and **LRD 43** are used in potentially explosive atmospheres, they must be of the type of protection required.

Thermal overload relays of type **LRD3**, **LR3D3** have been tested according to suitable test conditions by LCIE according IEC system for mutual recognition of tests certificate for electrical equipment (IECEE) CB SCHEME) according the test conditions mentioned by the following equivalent IEC standards as documented in certificates FR 665184C and FR 665184D :

EN 60947-4-1	:2010+A1:2012,
EN 60947-5-1	:2004+A1:2009,
EN 60947-1	:2007+A1:2011

Thermal overload relays of type **LRD 33**, **LRD 43** have been tested according to suitable test conditions by ASEFA mentioned in the certificates references:

116-10BT dated 2010-08-31 using the following standards:

IEC 60947-4-1 ed.3.0 (2009-09) sequence 1 and results are mentioned in test report 200903922\_001dated 2010-08-23

117-10BT dated 2010-08-31 using the following standards:

IEC 60947-5-1 ed.3.0 (2003-11) + A1 (2009-04) test sequence II, III, IV, V, VI and results are mentioned in test reports 20090303922\_007, 20090303922\_008, 20090303922\_009, 20090303922\_010, 20090303922\_011 dated 2010-08-30.

for the following products references : LRD 3312, LRD 3314, LRD 3316, LRD 3321, LRD 3322, LRD 3353, LRD 3355, LRD 3357, LRD 3359, LRD 3361, LRD 3363, LRD 3365, LRD 33656, LRD 33676, LRD 33696, LRD 4365, LRD 4367, LRD 4369

These standards are equivalent to EN 60947-4-1:2010 and EN 60947-5-1:2004. Because Thermal overload relays of type LRD33 and LRD43 don't have electronics incorporated they are not impacted by the requirements of EN 60947-4-1/A1:2012 and EN 60947-1/A1:2011, therefore can be considered as compliant to those Amendments without the need to perform supplementary tests.

Additional information can be download from the internet website <http://www.schneider-electric.com>

#### **PARAMETERS RELATING TO THE SAFETY**


The parameters relating to the safety are unchanged.

#### **MARKING**


The marking is modified as follows:

SCHNEIDER ELECTRIC and / or TELEMECANIQUE  
INERIS 08ATEX0012X



(Batch number including manufacturing date)

 II (2) GD  
[Ex e]

OR

 I (M2)  
[Ex e]

OR

 II (2) GD -  I (M2)  
[Ex e]

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

#### **ROUTINE EXAMINATIONS AND TESTS**

The routine examinations and tests are unchanged.

**(16) DESCRIPTIVE DOCUMENTS**

Following descriptive documents hereafter contains the information and technical information related to LRD/ LR3D products lines are:

- |  |                |
|--|----------------|
| - Descriptive notice                         | signed on 2015 |
| - Instruction notice                         | signed on 2015 |
| - INERIS certification report of LRD33/LRD43 | signed on 2016 |

**(17) SPECIAL CONDITIONS FOR SAFE USE**

The special conditions for safe use are unchanged.

**(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS**

The respect of the Essential Health and Safety Requirements is modified as follows:

- Conformity to the standards quoted in clause (15).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2016.03.15



  
The Chief Executive Officer of INERIS  
By delegation

**Dominique CHARPENTIER**  
Responsable Pôle Certification  
Certification Division, Manager