



[1] **EC-TYPE EXAMINATION CERTIFICATE**

[2] **Component intended for use on/in equipment or protective system
intended for use in potentially explosive atmospheres
Directive 94/9/EC**

[3] EC-Type Examination Certificate number:

CESI 00 ATEX 048 U

[4] Component: Flexible conduits series SP...

[5] Manufacturer: **EL.FIT S.p.A.**

[6] Address: Via Aquileia n.8, Villesse (Gorizia - Italy)

[7] This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] CESI, notified body n° 0722 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of components intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report n° EX-A0/030758.



[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + A1..A2 EN 50018: 1994

[10] The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

[12] The marking of the component shall include the following:

 II 2 G EEx d IIB or  II 2 G EEx d IIC

This certificate may only be reproduced in its entirety and without any change, schedule included.

date October 10th, 2000 - translation issued on October 10th, 2000

prepared CERT - M. Balaz

CESI

CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Responsabile Area Certificazione

approved CERT - U. Colombo

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[13]

Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE N° CESI 00 ATEX 048 U**

[16] Report N° EX-A0/030758

Routine tests

The manufacturer shall carry out the routine tests prescribed at clause 24 of EN 50014 standard.
The routine overpressure test shall be carried out at 30 bar with the static method (clause 15.1.3.1 of EN 50018 standard).

Descriptive documents (prot. EX-A0/030756)

- Technical note n° A4-769 rev. 0 (2 p.)	dated 15.02.2000
- Annexe A/13 rev. 0 (Instructions for use in ital.) (3 p.)	dated 14.02.2000
- Annexe A/14 rev. 0 (Instructions for use) (3 p.)	dated 14.02.2000
- Drawing n° A4-768 rev. 0	dated 15.02.2000
- Drawing n° A4-770 rev. 0	dated 15.00.2000
- Drawing n° A3-219 rev. 0	dated 11.02.2000
- Drawing n° A3-220 rev. 0	dated 15.02.2000
- Drawing n° A1-012 rev. 0	dated 08.02.2000
- attestation of conformity for components	dated 07.04.2000

One copy of the above mentioned documents is kept in CESI files.

[17] Schedule of limitations

None.

[18] Essential Health and Safety Requirements

Covered by standards.

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EXTENSION n. 01/05

to EC-Type Examination Certificate CESI 00 ATEX 048U

Component: Flexible conduits series SP...
Manufacturer: **EL.FIT S. p. A.**
Address: Via Aquileia 12, Villesse (Gorizia - Italy)


Admitted variation

- new category II 2 GD (added protection against the risk of explosion from combustible dusts in conformity with the standard EN 50281-1-1)

The results of verifications and tests are reported in the confidential report n. EX-A5060439.

Identification and description of the equipment

The marking of the flexible conduits series SP (category 2 GD) shall include the following:

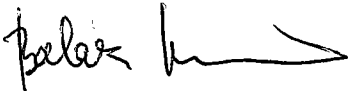
 II 2 GD EEx d IIB IP 66/67 or EEx d IIC IP 66/67

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 00ATEX048U.

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date 22nd December, 2005 - translation issued on 22nd December, 2005

prepared

CERT - M. Balaz 

approved

CERT - U. Colombo

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Business Unit Certificazione
Il Responsabile



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EXTENSION n. 01/05

to EC-Type Examination Certificate CESI 00 ATEX 048U

Descriptive documents (prot. EX-A5060442)

- n. A4-769 Rev. 1 (2 pg.)	dated	16.04.2003
- n. A4-968 Rev. 0	dated	16.04.2003
- n. A3-329 Rev. 0	dated	16.04.2003
- Technical data 3M ad. plate (10 pg.)	dated	16.04.2003
- Safety instructions Annexe A13 Rev. 1 (4 pg.)	dated	16.04.2003
- Attestation of conformity for components APQ-8	dated	16.04.2003

One copy of all documents is kept in CESI files.

Schedule of limitations

The flexible conduits above mentioned, when mounted on the enclosures as indicated in the documents annexed to this certificate, are in compliance with the prescriptions of the standard EN 60529 (1991) for the degree of protection IP 66/67.

On the flexible conduits with revolving fittings the IP 66/67 mechanical protection is obtained by inserting an O-ring or plain gasket made of NBR, in-between the body and the ring of fittings as shown into the safety instruction..

The coupling of the flexible conduits with the enclosures shall be made as indicated by the manufacturer in the documents annexed to this certificate, in order not to jeopardise the type of protection of the electrical apparatus on which they are mounted.

Essential Health and Safety Requirements

Compliance with the Health and Safety Requirements has been assured by compliance with the following standards:

EN 50014: 1997 + A1..A2 – General requirements

EN 50018: 2000 + A1 - Flameproof enclosures "d"

EN50281-1-1: 1998 + A1 – Electrical apparatus for use in the presence of combustible dust. Part 1-1: Electrical apparatus protected by enclosures – Construction and testing.

EXTENSION n. 02/08



to EC-Type Examination Certificate CESI 00ATEX 048U


Component: Flexible conduits type SP...
Manufacturer: **EL.FIT S.p.A.**
Address: Via Aquileia 12, Villesse (GO)

Admitted variation


- Updating to new standards EN 60079-0, EN 60079-1, EN 61241-0, EN 61241-1, EN ISO 10807
- Upgrade of nameplate
- Constructional modifications
- New size 9 with threads 3 1/2 "
- New ambient temperature range Ta da -55 °C a +150 °C

Components identification


The marking of the flexible conduits with fixed fittings type SPH-SPG-SPZ shall include the following:

 **II 2GD** **Ex d II C , Ex tD A21 IP66/67 Ta -20° +150°**


The marking of the flexible conduits with fixed fittings type SPHt-SPGt-SPZt shall include the following:

 **II 2GD** **Ex d II C , Ex tD A21 IP66/67 Ta -55° +150°**

The marking of the flexible conduits with revolving fittings type SPN-SPI-SPY-SPD-SPP-SPE-SPT shall include the following:

 **II 2GD** **Ex d II B , Ex tD A21 IP66/67 Ta -20° +60°**

The marking of the flexible conduits with revolving fittings type SPNt-SPIt-SPYt-SPDt-SPPt-SPEt-SPTt shall include the following:

 **II 2GD** **Ex d II B , Ex tD A21 IP66/67 Ta -55° +60°**

(continues)

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 00ATEX048U.

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date 12 June 2008 - Translation issued 12 June 2008

prepared Giorgio Chinnici

verified Mirko Balaz

approved Fiorenzo Bregani

CESI S.p.A.
Divisione Energia
"Area Tecnica Certificazione"
Il Responsabile


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EXTENSION n. 02/08


to EC-Type Examination Certificate CESI 00ATEX 048U

Components identification (continues)


The marking of the flexible conduits with revolving fittings type SPRN-SPRI-SPRY-SPRD-SPRP-SPRE-SPRT shall include the following:

 II 2GD Ex d II C , Ex tD A21 IP66/67 Ta -20° +60°

The marking of the flexible conduits with revolving fittings type SPRNt-SPRI-SPRYt-SPRDt-SPRPt-SPREt-SPRTt shall include the following for the execution IIC:

 II 2GD Ex d II C , Ex tD A21 IP66/67 Ta -55° +60°

The marking of the flexible conduits with revolving fittings type SPRNt-SPRI-SPRYt-SPRDt-SPRPt-SPREt-SPRTt shall include the following for the execution IIB:

 II 2GD Ex d II B , Ex tD A21 IP66/67 Ta -55° +150°

Report no. EX-A8017100

Type tests

The flexible conduits type SP... have passed the type tests according to the Standard EN ISO 10807 (1996).

Routine tests

The manufacturer shall carry out the routine tests prescribed at par. 27 of the EN 60079-0 (2006) and at par. 24 of the EN 61241-0 (2006) Standards.

The overpressure routine tests shall be carried out using the static method (paragraph 15.1.3.1 of the Standard EN 60079-1) at a pressure of 40 bar.

Descriptive documents (prot. EX-A8017106)

- Technical Note A4-769 (4 pg.)	Rev. 02	dated	19/06/2007
- Drawing n° TMF CE	Rev. 14	dated	27/03/2008
- Drawing n° A4-770	Rev. 01	dated	19/06/2007
- Drawing n° A3-220	Rev. 01	dated	19/06/2007
- Drawing n° A1-012	Rev. 01	dated	19/06/2007
- Safety Instructions (5 pg.)	Rev. 02	dated	19/06/2007
- EC Declaration of Conformity (5 pg.)		dated	19/06/2007

One copy of all documents is kept in CESI files.

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EXTENSION n. 02/08

to EC-Type Examination Certificate CESI 00ATEX 048U

Schedule of limitations

The flexible conduits series SP... above mentioned, when mounted on the enclosures as indicated in the documents annexed to this certificate, are in compliance with the prescriptions of the standard EN 60529 (1991) for the degree of protection IP 66/67.

On the flexible conduits with revolving fittings the IP 66/67 mechanical protection is obtained by inserting an O-ring or plain gasket made of EPDM or SI/50, in-between the body and the ring as shown in the safety instructions. The chosen gaskets shall be able to work properly with the maximum operating temperature.

The maximum operating temperature can go up to +80 °C taking into account the condition that the maximum ambient temperature is limited to +60 °C; it can reach +150 °C for an ambient temperature up to +150 °C.

Essential Health and Safety Requirements

The Health and Safety Requirements are assured by compliance with the following Standards:

- EN 60079-0 : 2006: Electrical apparatus for explosive gas atmospheres.
General requirements
- EN 60079-1 : 2004 Flamoproof enclosures "d".
- EN 61241-0 : 2006 Electrical apparatus for use in the presence of combustible dust.
General requirements
- EN 61241-1 : 2004 Protection by enclosures "tD"
- EN ISO 10807 : 1996 Corrugated flexible metallic hose assemblies for the protection of electrical cables in explosive atmospheres.

EXTENSION n. 03/14

to EC-Type Examination Certificate CESI 00 ATEX 048U

Component: Flexible conduits series SP..

Manufacturer: EL.FIT S.p.A.

Address: Via Aquileia, 12 – 34070 Villesse (GO) – Italy.

Admitted variation



- Update to new edition of EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-31: 2009.
- Update of marking.

Conformity to new edition of the harmonized European standard

The component subject of the certificate CESI 00 ATEX 048U and annexed extension are conform to the standards:

EN 60079-0: 2012 EN 60079-1: 2007 EN 60079-31: 2009

The components shall be marked as follows:

	<p>II2GD</p> <p>Ex d IIB Gb Ex tb IIIC Db IP66/67 Ta min. max.</p>	<p><i>for models: SPN., SPL., SPY., SPD., SPP., SPE., SPT. and</i> <i>SPRN., SPRI., SPRY., SPRD., SPRP., SPRE., SPRT..</i></p>
<i>or</i>		
	<p>II2GD</p> <p>Ex d IIC Gb Ex tb IIIC Db IP66/67 Ta min. max.</p>	<p><i>for models: SPH., SPG., SPZ. and</i> <i>SPRN., SPRI., SPRY., SPRD., SPRP., SPRE., SPRT..</i></p>

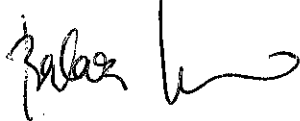
(Example of Ta marking: Ta -20°C + 60°C)

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 00 ATEX 048U.

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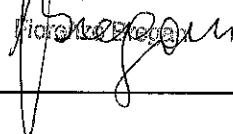
Date 24th March 2014 - translation issued the 24th March 2014

Prepared
Mirko Balaz



Approved
Fiorenzo Bregani

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Testing & Certification Division
Business Area Certification
Responsabile



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EXTENSION n. 03/14

to EC-Type Examination Certificate CESI 00 ATEX 048U

Description of component

The flexible conduits series **SP..** are used to connect equipments that are offset, Ex-d housing or equipments subject to vibrations such as electrical motors. The flexible conduits series **SP..** are manufactured in agreement to standard EN ISO 10807:1996 "Corrugated flexible metallic hose assemblies for the protection of electrical cables in explosive atmospheres". The flexible conduits can be also installed with ambient temperature from -55°C to +150°C. For temperature -55°C, the fittings must be manufacturing only in stainless steel.

The flexible conduits series **SP..** are composed of:

- Continuous wall conduit ribbed with parallel spirals made of stainless steel AISI 321 or AISI 316L.
- Stainless steel AISI 304 plait sheath.
- Revolving or fixed fittings made of UNI 10233, Fe36, Fe37, ASTM A105 steel or stainless steel AISI 303, AISI 304 or AISI 316.

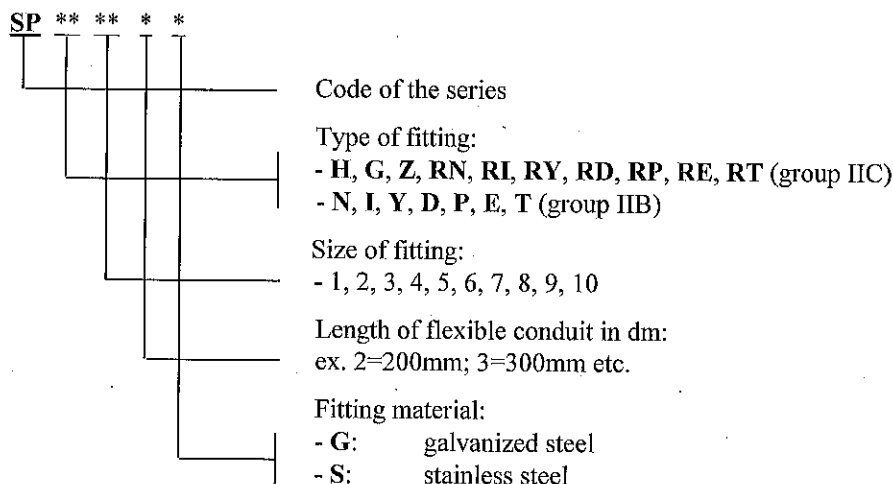
The male and female fittings standard threads types are NPT ANSI/ASME B1.20.1 from 1/2" up to 4" and cylindrical ISO Metric 965/1 and ISO 965/3 from M20x1.5 up to M100x1.5. Alternative available tapered threads are ISO 7/1 while for cylindrical threads are ISO 228/1.

Revolving fittings are covered by the CESI 99 ATEX 034U certificate.

- Type **B..**: for ambient temperature -20°C +60°C for group **IIB** (or -55°C +60°C only for stainless steel material).
- Type **R..**: for ambient temperature -20°C +60°C for group **IIC** (or -55°C +60°C only for stainless steel material).
- Type **RB..**: for ambient temperature -20°C +150°C (or -55°C +150°C only for stainless steel material). These types are suitable for group **IIB** only.

To guarantee the IP 66/67 degree of protection the flexible conduit series **SP..** have an IP 66/67 mechanical protection in-between the body and the ring obtained by inserting an O-ring or plain gasket made of silicon rubber, while for external male cylindrical threads have a sealing edge machined for fitting a silicon O-ring and for all other threads the IP 66/67 degree of protection is achieved with sealant put at least on two complete threads engaged of the threaded coupling.

Identification of flexible conduit series **SP..**:



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EXTENSION n. 03/14

to EC-Type Examination Certificate CESI 00 ATEX 048U

Ambient temperature

The ambient temperature limits are listed in the following Table 1.

Table 1:

	Flexible conduit type	Exec.	Manufacturing materials		Size	Ambient Temperature
			Fixed fitting	Revolving fitting (gasket)		
Fixed fittings	SPH – SPG SPZ	Ex-d IIC	Stainless steel	/	1/2" ÷ 1"	-20°C +150°C
			Galvanised steel	/	1/4" ÷ 4"	
	SPH – SPG SPZ	Ex-d IIC	Stainless steel only	/	1/2" ÷ 4"	-55°C +150°C
Revolving fittings type	B..	Ex-d IIB	Stainless steel	Galvanised steel	1/2" ÷ 1"	-20°C +60°C
			Galvanised steel	Galvanised steel	1/4" ÷ 4"	
	B..	Ex-d IIB	Stainless steel only	Stainless steel	1/2" ÷ 4"	-55°C +60°C
			R..	Ex-d IIC	Stainless steel	
	R..	Ex-d IIC	Galvanised steel		Galvanised steel	1/4" ÷ 4"
			R..	Ex-d IIC	Stainless steel only	Stainless steel
RB..	Ex-d IIB	Stainless steel only			Stainless steel	1/2" ÷ 4"

Report n. EX- B4008001

Routine tests

The routine overpressure test shall be carried out using the static method (paragraph 15.1.3.1 of EN 60079-1 standard) at a pressure of 40 bars.

Descriptive documents (prot. EX- B4008002)

- Technical note A4-769 (pg. 6)	rev.3	dated	2013.07.19
- Mounting Instruction A13 (pg. 6)	rev.3	dated	2013.07.19
- Attestation of Conformity no. 0163 (pg. 1)		dated	2013.07.19
- Drawing A1-012 (1 sheet)	rev.2	dated	2013.08.05
- Drawing A4-4952 (1 sheet)	rev.2	dated	2013.01.29
- Drawing A4-5404 (1 sheet)	rev.1	dated	2013.01.29
- Drawing A4-6172 (sheet 1)	rev.0	dated	2013.01.29

One copy of all documents is kept in CESI files.

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EXTENSION n. 03/14

to EC-Type Examination Certificate CESI 00 ATEX 048U

Schedule of limitations

- The coupling of the Flexible conduit series **SP..** with the enclosures shall be made as indicated by the manufacturer in the documents annexed to this certificate in order to respect the type of protection of the electrical apparatus on which Flexible conduit are mounted.
- The Flexible conduit series **SP..** shall be mounted at the electrical apparatus in such a way that accidental rotation and loosening will be prevented.
- The Flexible conduit series **SP..** shall be installed in such a way that the temperature at the mounting point will remain within the following ambient temperature ranges:
 - from **-20** up to **+150 °C** for types **SPH, SPG** and **SPZ** made of Galvanized steel and/or Stainless Steel.
 - from **-55** up to **+150 °C** for types **SPH, SPG** and **SPZ** made of Stainless Steel only.
 - from **-20** up to **+60 °C** for types **SPN, SPI, SPY, SPD, SPP, SPE** and **SPT** with revolving fitting type **B..** made of Galvanized steel and/or Stainless Steel.
 - from **-55** up to **+60 °C** for types **SPN, SPI, SPY, SPD, SPP, SPE** and **SPT** with revolving fitting type **B..** made of Stainless Steel only.
 - from **-20** up to **+60 °C** for types **SPRN, SPRI, SPRY, SPRD, SPRP, SPRE** and **SPRT** with revolving fitting type **R..** made of Galvanized steel and/or Stainless Steel.
 - from **-55** up to **+60 °C** for types **SPRN, SPRI, SPRY, SPRD, SPRP, SPRE** and **SPRT** with revolving fitting type **R..** made of Stainless Steel only.
 - from **-55** up to **+150 °C** for types **SPRN, SPRI, SPRY, SPRD, SPRP, SPRE** and **SPRT** with revolving fitting type **RB..** made of Stainless Steel only.
- The IP 66/67 mechanical protection of the Flexible conduit series **SP..** with revolving fittings type **B.., R..** or **RB..** is obtained by inserting an O-ring or plain gasket made of silicon rubber, in-between the body and the ring as shown into the safety instruction, depending on the maximum service temperature.
- If the Flexible conduit series **SP..** are intended for use with dust protection “Ex tb” the holes into Flexible conduit are mounted shall maintain the ingress protection rating of the enclosure. To this scope the correct positioning of the gaskets (for cylindrical threads) or the application of sealant on the threads (for tapered threads), shall be done as indicated in the manufacturer instruction.
- It is the final assemblers/users responsibility to ensure the threaded joint between the flexible conduit series **SP..** and the associated enclosure meet all the requirements of the applicable standards for the assembly.

Essential Health and Safety Requirements

The Essential Health and Safety Requirements are assured by compliance to the following standards:

EN 60079-0: 2012	Explosive atmospheres – Part 0: Equipment - General requirements;
EN 60079-1: 2007	Explosive atmospheres – Part 1: Equipment protection by flameproof enclosure “d”;
EN 60079-31: 2009	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure “t”;
EN ISO 10807:1996	Corrugated flexible metallic hose assemblies for the protection of electrical cables in explosive atmospheres.