

[1] EC – TYPE EXAMINATION CERTIFICATE

[2] Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC

[3] EC-Type Examination Certificate Number: **EXA 14 ATEX 0042** Issue: **1**

[4] Equipment or Protective System: **Control unit**

Type: **WA... and WS...**

[5] Manufacturer: **SOLEXY Srl.**

[6] Address: **Via Enrico Fermi 2, 25015 Desenzano del Garda – Brescia, ITALY**

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

[8] Ex-Agencija, Notified Body number 2465 according to 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 the design and construction of equipment or protective system intended for use in potentially explosive atmospheres given in Annex II of the Directive.

The examination and test results are recorded in confidential report number: **EXA 14CR036**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012 **EN 60079-1:2007** **EN 60079-31:2014**

except in respect of those requirements listed at item 18 of the Schedule.

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

[11] This EC-Type Examination Certificate relates only to the design, examination and test of the specified equipment or protective system. 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 protective system shall include the following:



II 2G Ex d IIC T6...T4 Gb
II 2D Ex tb IIIC T110 °C / T110 °C / T140 °C
I M2 Ex d I Mb

Date: 21.07.2014.

PB.13.TC.390/MK

Prepared:


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Ex-Agencija
Department of equipment certification
Approved.


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Page: 1/3

[13]

SCHEDULE[14] **EC - TYPE EXAMINATION CERTIFICATE No.: EXA 14 ATEX 0042**[15] **Description of Equipment or Protective System**

The WA and WS type control units consist of an Ex d / Ex tb enclosure with threaded cover, made of aluminum with internal volume of 1020 cm³ for WA type, or stainless steel and 1167 cm³ for WS type. They can be used to enclose a wide range of electronic devices, such as radio modems, transceivers, repeaters, Ethernet access point, Ethernet switches, terminals, etc...

Enclosures have max 4 cable/conduit entries. To provide IP6X for Ex tb, an elastomeric O-ring is placed between the cover and the body of the enclosure.

Only WS type is suitable for underground mining applications.

Technical data:

Max. Power Dissipation: 24W
Max. voltage: 125 Vdc or 250 Vac

The equipment is intended to be used in an ambient temperature range according to the following table:

Gas	Dust	Ta
T4	140 °C	-60°C ≤ Ta ≤ 105 °C
T5	110 °C	-60°C ≤ Ta ≤ 80 °C
T6	110 °C	-60°C ≤ Ta ≤ 60 °C

[15.1] **Documentation**

Title:	Drawing No.:	Rev. level:	Date:
Technical file (19 pages)	FT210314	02	2014-07-01
Schedule drawing (1 sheet)	MM00853	00	2013-09-20
Schedule drawing (1 sheet)	MM00854	00	2013-09-20
Schedule drawing (1 sheet)	MM00857	00	2013-10-04
Schedule drawing (1 sheet)	MM00858	00	2013-10-07
Schedule drawing (1 sheet)	MM00861	00	2013-11-04
Schedule drawing (1 sheet)	MM00863	00	2013-10-01
Schedule drawing (1 sheet)	MM00864	00	2013-10-01
Marking drawing (1 sheet)	ML00076	00	2013-01-17
Marking drawing (1 sheet)	ML00078	00	2013-01-17
Installation & Operational Manual (3 pages)	IOM00052-00	00	-

Page: 2/3

[16] Confidential Report No. EXA 14CR036

[16.1] Routine testing

None.

[17] Specific Conditions for Safe Use 'X'

None.

[18] Essential Health and Safety Requirements

Covered by the standards listed at item 9.

[1] SUPPLEMENTARY EC – TYPE EXAMINATION CERTIFICATE

[2] Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC

[3] Supplementary EC-Type Examination Certificate Number: **EXA 14 ATEX 0042/1**

[4] Equipment or Protective System: **Control unit**

Type: **WA... and WS...**

[5] Manufacturer: **Solexy Srl**

[6] Address: **Via Enrico Fermi 2, I-25015 Desenzano Del Garda (BS), Italy**

[7] This supplementary certificate extends the certificate to apply to equipment or protective system designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule to this certificate and the documents therein referred to.

[8] The examination and test results are recorded in confidential report number: **EXA 15CR074**

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



(control unit version without antenna coupler)

II 2G Ex db IIC T6-T5-T4 Gb

II 2D Ex tb IIIC T110°C/T110°C/T140°C Db

I M2 Ex db I Mb

(control unit version with antenna coupler AX series)

II 2(1)G Ex db mb [ia Ga] IIA/IIB/IIC T6 Gb

II 2(1)D Ex mb tb [ia Da] IIIC T85°C Db

I M2(M1) Ex db mb [ia Ma] I Mb

[10] Description of the supplement

This supplement covers optional assembly consisting of WA or WS enclosure with certified Antenna Coupler AXabcdefX series (DNV 06 ATEX 0183U) attached to its cable entries. Evaluation in accordance with requirements of current generation of standards for all versions of equipment.

Applied standards by this supplement:

EN 60079-0:2012 + A11:2013

EN 60079-1:2014

EN 60079-11:2012

EN 60079-18:2015

EN 60079-31:2014

Antenna couplers act as a capacitive coupling between an RF transmitter installed in an enclosure and a passive antenna installed outside the enclosure. It is designed to be mounted to the cable entry of a flameproof enclosure engaged in a threaded flameproof joint. The antenna coupler blocks DC signals and provides very high impedance to low frequency AC signals.

Ambient temperature range depends on type of radio transmitting device installed inside control unit housing. Refer to Table 1 where complete list of optional types of installed radio transmitting devices is given together with ambient temperature range for each device. Table 2, Table 3 and Table 4 contain cross reference showing relation between applicable combination of gas group, maximum allowable antenna gain and type of antenna coupler for type of installed device.

Page: 1/6

Type designation coding

X	WA	xxx	xx	-	xx	x	xx	-	xxxxx
1	2	3	4		5	6	7		8

1 – Family

H -> Empty enclosure

S -> Enclosure supply with electronic device

2 – Housing (2 digits)

WA ⇒ WA series made in aluminum

WS ⇒ WS series made in stainless steel

3 – Device code (3 digits)

Identify the device installed (type, model and manufacturer)

4 – Antenna coupler (2 digits)

Identify the series and quantity of Solexy Antenna Coupler assembled on enclosure (optional accessories, 00 identify an enclosure without Solexy Antenna Coupler)

5 – Cable Entries (2 digits)

Identify the cable entries combination

6 – Colour - Brand (1 digit)

Identify the colour of housing and/or brand

7 – Marking (2 digits)

Identify the Ex marking

8 – Special Execution (5 digits)

Identify special execution

Table 1

Device code	Ambient temperature range (°C)			
	WA		WS	
	max	min	max	min
310	72	-30	70	-30
320	74	-30	73	-30
340	74	-30	72	-30
341	70	-30	65	-30
370	75	-40	70	-40
510	70	-30	65	-30
540	70	-30	65	-30
570	75	-40	70	-40
110	69	-20	62	-20
111	62	-20	49	-20
160	62	-20	49	-20
16A	66	-20	57	-20
16B	69	-20	62	-20
161	69	-20	62	-20
162	62	-20	49	-20
16C	66	-20	57	-20
16D	69	-20	62	-20
163	62	-20	49	-20
16E	66	-20	57	-20
16F	69	-20	62	-20
167	62	-20	49	-20
16G	66	-20	57	-20
16H	68	-20	61	-20
Ux0	68	-20	61	-20
Ux1	68	-20	61	-20
Ux2	68	-20	61	-20
Ux3	68	-20	61	-20
Ux4	68	-20	61	-20
Ux5	68	-20	61	-20
Vx0	68	-20	61	-20
Vx1	68	-20	61	-20
Vx2	68	-20	61	-20
Vx3	68	-20	61	-20

Device code	Ambient temperature range (°C)			
	WA		WS	
	max	min	max	min
Lx0	68	-20	61	-20
Lx1	68	-20	61	-20
Lx2	68	-20	61	-20
Lx3	68	-20	61	-20
Lx4	68	-20	61	-20
Lx5	68	-20	61	-20
Mx0	68	-20	61	-20
Mx1	68	-20	61	-20
Mx2	68	-20	61	-20
Mx3	68	-20	61	-20
Hx0	68	-20	61	-20
Hx1	68	-20	61	-20
Hx2	68	-20	61	-20
Hx3	68	-20	61	-20
Hx4	68	-20	61	-20
Hx5	68	-20	61	-20
Gx0	68	-20	61	-20
Gx1	68	-20	61	-20
Gx2	68	-20	61	-20
Gx3	68	-20	61	-20
870	65	-20	55	-20
B10	79	-40	77	-40
B11	79	-40	77	-40
C10	79	-30	78	-30
C11	79	-30	78	-30
C12	79	-30	78	-30
C13	79	-30	78	-30
D10	37	-10	34	-10

Table 2

Equipment for	Max Threshold power
Group I	6W (37,78 dBm)
Group IIA	6W (37,78 dBm)
Group IIB	3,5W (35,44 dBm)
Group IIC	2W (33,01 dBm)
Group III	6W (37,78 dBm)

The maximum allowable antenna gain shall be calculated using following formula:

$$\text{Antenna gain (dBi)} = \text{Max threshold power (dBm)} - \text{RF radio output power (dBm)} + \text{Coax cable loss (dB)}^*$$

*when used for antenna connection to Solexy Antenna Coupler

In case of device with multiple antennas, each antenna gain shall be calculated according to above formula.

For antenna gain calculation and installation group following tables shall be considered:

Table 3

Device code	RF Power Output		Group
	(mW)	(dBm)	
310	200	23,01	I, IIA, IIB, IIC, III
320	10	10	I, IIA, IIB, IIC, III
340	25	13,98	I, IIA, IIB, IIC, III
341	500	26,99	I, IIA, IIB, IIC, III
370	100	20	I, IIA, IIB, IIC, III
510	500	26,99	I, IIA, IIB, IIC, III
540	500	26,99	I, IIA, IIB, IIC, III
570	100	20	I, IIA, IIB, IIC, III
110	500	26,99	I, IIA, IIB, IIC, III
111	2000	33,01	I, IIA, IIB, III
160	2000	33,01	I, IIA, IIB, III
16A	1200	30,79	I, IIA, IIB, IIC, III
16B	350	25,44	I, IIA, IIB, IIC, III
161	500	26,99	I, IIA, IIB, IIC, III
162	2000	33,01	I, IIA, IIB, III
16C	1200	30,79	I, IIA, IIB, IIC, III
16D	350	25,44	I, IIA, IIB, IIC, III
163	2000	33,01	I, IIA, IIB, III
16E	1200	30,79	I, IIA, IIB, IIC, III
16F	350	25,44	I, IIA, IIB, IIC, III
167	2000	33,01	I, IIA, IIB, III
16G	1200	30,79	I, IIA, IIB, IIC, III
16H	350	25,44	I, IIA, IIB, IIC, III
Ux0	2000	33,01	I, IIA, IIB, III
Ux1	2000 (GSM)	33,01	I, IIA, IIB, III
	50 (WiFi)	16,99	
Ux2	2000 (GSM)	33,01	I, IIA, IIB, III
	0 (GPS)	0	
Ux3	2000 (GSM)	33,01	I, IIA, IIB, III
	50 (WiFi)	16,99	
	0 (GPS)	0	
Ux4	50 (WiFi)	16,99	I, IIA, IIB, IIC, III

Device code	RF Power Output		Group
	(mW)	(dBm)	
Ux5	50 (WiFi)	16,99	I, IIA, IIB, IIC, III
	0 (GPS)	0	
Vx0	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
Vx1	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	50 (WiFi)	16,99	
Vx2	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	0 (GPS)	0	
Vx3	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	50 (WiFi)	16,99	
	0 (GPS)	0	
Lx1	2000 (GSM)	33,01	I, IIA, IIB, III
	50 (WiFi)	16,99	
Lx2	2000 (GSM)	33,01	I, IIA, IIB, III
	0 (GPS)	0	
Lx3	2000 (GSM)	33,01	I, IIA, IIB, III
	50 (WiFi)	16,99	
	0 (GPS)	0	
Lx4	50 (WiFi)	16,99	I, IIA, IIB, IIC, III
Lx5	50 (WiFi)	16,99	I, IIA, IIB, IIC, III
	0 (GPS)	0	
Mx0	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
Mx1	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	50 (WiFi)	16,99	
Mx2	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	0 (GPS)	0	
Mx3	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	50 (WiFi)	16,99	
	0 (GPS)	0	
Hx1	2000 (GSM)	33,01	I, IIA, IIB, III
	50 (WiFi)	16,99	
Hx2	2000 (GSM)	33,01	I, IIA, IIB, III
	0 (GPS)	0	

Device code	RF Power Output		Group
	(mW)	(dBm)	
Hx3	2000 (GSM)	33,01	I, IIA, IIB, III
	50 (WiFi)	16,99	
	0 (GPS)	0	
Hx4	50 (WiFi)	16,99	I, IIA, IIB, IIC, III
Hx5	50 (WiFi)	16,99	I, IIA, IIB, IIC, III
	0 (GPS)	0	
Gx0	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
Gx1	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	50 (WiFi)	16,99	
Gx2	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	0 (GPS)	0	

Device code	RF Power Output		Group
	(mW)	(dBm)	
Gx3	1250 (GSM)	30,97	I, IIA, IIB, IIC, III
	50 (WiFi)	16,99	
	0 (GPS)	0	
870	50	16,99	I, IIA, IIB, IIC, III
B10	63	17,99	I, IIA, IIB, IIC, III
B11	63	17,99	I, IIA, IIB, IIC, III
C10	63	17,99	I, IIA, IIB, IIC, III
C11	63	17,99	I, IIA, IIB, IIC, III
C12	63	17,99	I, IIA, IIB, IIC, III
C13	63	17,99	I, IIA, IIB, IIC, III
D10	251	24	I, IIA, IIB, IIC, III

Note: x = numerical value according to device installed, see Installation & Operation Manual for more details.

The values in Table 3 refer to WA and WS enclosure with Solexy Antenna coupler. Type of Antenna coupler allowed for particular group is written in Table 4:

Table 4

Antenna coupler type	Group
AX H	I, IIA, IIB, III
AX J	I, IIA, IIB, IIC, III
AX K	I, IIA, IIB, IIC, III
AX L	I, IIA, IIB, IIC, III
AX M	I, IIA, IIB, IIC, III
AX N	I, IIA, IIB, IIC, III
AX O	I, IIA, IIB, IIC, III
AX P	I, IIA, IIB, IIC, III
AX Q	I, IIA, IIB, IIC, III
AX R	I, IIA, IIB, IIC, III
AX S	I, IIA, IIB, IIC, III
AX T	I, IIA, IIB, IIC, III

51

[10.1] Documentation

Title:	Drawing No.:	Rev. level:	Date:
Addendum to Technical file (14 pages)	FT170215	13	2015-08-05
Schedule drawing (1 sheet)	MM00858	01	2015-31-03
Marking drawing (1 sheet)	ML00097	00	2015-06-08
Marking drawing (1 sheet)	ML00098	00	2015-06-08
Installation & Operational Manual (3 pages)	IOM00052-01	00	-
Installation & Operational Manual (3 pages)	IOM00056-00	00	-

[11] Specific Conditions for Safe Use 'X'

None

Date: 20.10.2015

PB.15.TC.256

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