

KR HELLAS LTD.

41, Athinas Av., Vouliagmeni,
GR-16671, Athens, Greece

TEL: +30-210-428-6736

FAX: +30-210-428-6728



KR HELLAS

Certificate No:

KRH 14 ATEX 1018U

This consists of 4 pages.

Page: 1/4

1. **EC-TYPE EXAMINATION CERTIFICATE**

2. Equipment and protective system intended for use in potentially explosive atmospheres:

Directive 94/9/EC

3. EC-Type-examination Certificate Number:

KRH 14 ATEX 1018U

4. Equipment: **Series-resistance Heating Cable type SCW Series**

5. Manufacturer: **Young Chang Silicone Co., Ltd.**

6. Address: **205-16, Gasandigital 1-ro, Geumcheon-gu, Seoul, Korea**

7. This equipment or protective systems and any acceptable variation thereto are specified in the schedule to certificate and the documents therein referred to.

8. The KRH certifies that equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, give in Annex II to the Directive 94/9/EC of 23 March 1994. The examination and test results are recorded in the confidential report number KRH-ATEX-0001-2014

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

EN 60079-0:2009 EN 60079-7:2007 EN 60079-30-1:2007

10. The sign "U" is placed after the certificate number it indicates that this certificate describes components and must not be mistaken for a certificate intended for an equipment or protective system. This EC-Type-Examination Certificate 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 equipment or protective systems in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment or protective systems.

12. The marking of the equipment shall include the following:

 **II 2 G Ex e II**

This certificate is issued at Athens on 27th October 2014, under the authority of the Hellenic Republic of Greece by KR Hellas Ltd., Notified Body No. 2198.



Notified Body No.2198



Kwon Jae-Geun

CEO of KR Hellas Ltd

Any person not a party to the contract pursuant which this document is delivered may not assert a claim against KRH for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgment, fault or negligence committed by personal of KRH in establishment or issuance of this document, and in connection with any activities for which it may provide. In this provision KRH shall mean the KR Hellas Ltd. as well as all its subsidiaries, directors, officers, employees and any other acting on behalf of KR Hellas Ltd.

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Page: 2/4

13.

SCHEDULE

14. **EC-Type-examination Certificate KRH 14 ATEX 1018U**

15. **Description of equipment or protective system**

The Series-resistance Heating Cable type SCW is designed for;

- This product of a 600V extruded perfluoropolymer insulated, metal braided and perfluoropolymer sheathed heating cable used for the heat trace on pipelines, tanks/vessels and pipeline equipment suitable for applications in low risk of mechanical damage explosive area (4J impact resistance; 800N deformation resistance) and without directly exposure to sunlight.
- Rated voltage: Up to 600 Vac
- Operating temperature: - 20 °C to +200 °C
- Single conductor perfluoropolymer insulated heating cable.
- The safety instruction provided by Manufacturer shall be strictly respected.

Test with the products & Co :

- Bartec EKL connection set :
Junction box: Ex300 (PTB 08 ATEX 1064, IBExU00ATEX1081)
Connection system: PLEXO E-KK (KEMA 09 ATEX 0184 U, KEM IECEX 09.0086 U)
- Bartec controller/limiter :
BSTW II Safety temperature monitor and BTB II/BSTB II limiter (EPS 11 ATEX 1356 X)
MTE mini-thermostat (PTB 03 ATEX 1026)
STW capillary tube thermostat (Zone 1 only, PTB 01 ATEX 1114)

Installation instructions :

- The maximum withstand temperature of the Series-resistance Heating Cable type SCW is recommended below 200 °C.
- Connection and termination for installation with the heating connection cable type SCW shall be certified according to the requirements, as well as according to the requirements of EN 60079-30-1 as integral parts of this heating system.
- Used of certified products see **Test with the products & Co.**
- When used in TT and TN systems a residual current device according to EN 60079-30-1 cl. 4.3 shall be installed.
- When used in IT systems an insulation monitoring device according to EN 60079-30-1 cl. 4.3 shall be installed.

Type designation : see table next page



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Page: 3/4

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14. **EC-Type-examination Certificate KRH 14 ATEX 1018U**

15. **Description of equipment or protective system**

Type designation table :

Designation SCW-	Conductor Resistance ($\Omega/m \pm 10\%$) at 20°C	Outer diameter (Nominal, mm)	Minimum installation length (m)			Current at minimum installation length (A)	Max. Wattage (W/m)
			110V	220V	600V		
0.524 Ω /km	0.000524	12.30	590	1174	3203	354.9	66
0.610 Ω /km	0.000610	11.64	550	1094	2986	328.9	66
0.727 Ω /km	0.000727	10.93	500	995	2715	301.3	66
0.832 Ω /km	0.000832	10.37	470	935	2552	281.7	66
0.903 Ω /km	0.000903	10.09	450	895	2443	270.4	66
1.21 Ω /km	0.00121	9.09	390	776	2117	233.5	66
1.31 Ω /km	0.00131	8.87	375	746	2036	224.5	66
1.75 Ω /km	0.00175	8.22	325	646	1764	194.2	66
2.0 Ω /km	0.00200	7.67	303	602	1645	181.7	66
3.33 Ω /km	0.00330	6.05	235	467	1276	140.8	66
5.4 Ω /km	0.00540	5.75	185	368	1004	110.6	66
6.8 Ω /km	0.00680	5.24	164	326	890	98.5	66
8.0 Ω /km	0.00800	5.09	151	300	819	90.8	66
0.009 Ω /m	0.00900	4.64	143	284	776	85.6	66
0.01 Ω /m	0.01000	5.05	135	268	733	81.2	66
0.0117 Ω /m	0.01170	4.40	125	248	678	75.1	66
0.020 Ω /m	0.02000	4.04	96	191	521	57.4	66
0.0263 Ω /m	0.02630	4.61	83.5	166	453	50.1	66
0.034 Ω /m	0.03400	4.40	73.5	146	399	44.1	66
0.05 Ω /m	0.05000	4.13	60.5	120	328	36.3	66
0.065 Ω /m	0.06500	4.43	53.0	105	287	31.9	66
0.08 Ω /m	0.08000	4.28	48.0	95.5	260	28.7	66
0.10 Ω /m	0.10000	4.13	43.0	85.6	233	25.7	66
0.14 Ω /m	0.14000	4.16	36.3	72.2	197	21.7	66
0.16 Ω /m	0.16000	4.10	34.0	67.7	184	20.3	66
0.20 Ω /m	0.20000	4.40	30.4	60.5	165	18.2	66
0.26 Ω /m	0.26000	4.22	26.5	52.7	143	15.9	66
0.34 Ω /m	0.34000	4.04	23.2	46.2	125	13.9	66
0.43 Ω /m	0.43000	4.22	20.7	41.2	112	12.4	66
0.51 Ω /m	0.51000	4.10	19.0	37.8	103	11.4	66
0.53 Ω /m	0.53000	4.07	18.6	37.0	100	11.2	66
0.68 Ω /m	0.68000	4.49	16.4	32.6	89.1	9.9	66
0.80 Ω /m	0.80000	4.37	15.2	30.2	82.5	9.1	66
1.00 Ω /m	1.00000	4.22	13.5	26.9	73.3	8.1	66
1.25 Ω /m	1.25000	4.04	12.1	24.1	65.7	7.3	66
1.44 Ω /m	1.44000	3.98	11.3	22.4	61.3	6.8	66
1.75 Ω /m	1.75000	3.86	10.2	20.3	55.3	6.1	66
2.06 Ω /m	2.06000	3.77	9.4	18.7	51.0	5.7	66
2.50 Ω /m	2.50000	3.68	8.6	17.1	46.6	5.1	66
3.10 Ω /m	3.10000	3.59	7.7	15.6	41.8	4.6	66
3.40 Ω /m	3.40000	3.56	7.4	14.6	39.9	4.4	66
4.00 Ω /m	4.00000	3.50	6.8	13.5	36.9	4.1	66
4.70 Ω /m	4.70000	3.47	6.3	12.4	33.9	3.7	66
5.70 Ω /m	5.70000	3.41	5.7	11.2	30.6	3.4	66
7.0 Ω /m	7.00000	3.36	5.1	10.2	27.9	3.1	66

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Page: 4/4

16. Descriptive documents

Certification file No.: KRH-ATEX-0001-2014

This Certification file includes 6 items (126 pages)

17. Special conditions for safe use

None

18. Essential Health and Safety Requirements

Refer to covered by standards list at 9.

19. Routine Verifications and Tests

Each apparatus shall be submitted to a dielectric test & Verification of rated output in accordance with clause 5.2 of standard EN 60079-30-1.

End of Certificate

