Certificate of Compliance

Certificate: 1547965 (LR 98979-12) **Master Contract:** 177805

Project: 2700688 **Date Issued:** February 14, 2014

Issued to: **ABTECH Ltd.**
Sanderson Street
Lower Don Valley
Sheffield, South Yorkshire S9 2UA
United Kingdom

Attention: Steve Hartley

The products listed below are eligible to bear the CSA Mark shown

Gino Surace

Issued by: Gino Surace

PRODUCTS

CLASS 3218 06 - INDUSTRIAL CONTROL EQUIPMENT - Miscellaneous Apparatus - For Hazardous Locations

Ex e IIC, Type 4X

SX range of empty stainless steel enclosures in the following sizes:

SX Model	Length (mm)	Width (mm)	Depth (mm)	
			Min.	Max.
0	229	152	140	2000
0.5	274	184	140	2000
1	324	234	140	2000
1.5	306	306	140	2000
2	324	372	140	2000

3	448	372	140	2000
4	510	372	140	2000
5	510	510	140	2000
6	780	510	140	2000
7	950	650	140	2000
8	1250	800	140	2000
225	2000	2000	140	2000
45	114	114	51 (Nominal)	
64	152	102	63 (Nominal)	
66	152	152	102 (Nominal)	

BPG range of empty polymeric enclosures in the following sizes:

BPG Model	Length (mm)	Width (mm)	Height (mm)
1	80	75	55
2	110	75	55
3	160	75	55
4	190	75	55
5	230	75	55
6	122	120	90
7	220	120	90
8	160	160	90
9	260	160	90
10	360	160	90
11	560	160	90
12	255	250	120
13	400	250	120
13.5	400	250	160
14	600	250	120
15	400	405	120

ZAG range of empty aluminum enclosures in the following sizes:

ZAG Model	Length (mm)	Width (mm)	Height (mm)
2	58	64	36
3	98	64	36
4	150	64	36
5	75	80	57
6	125	80	57
7	175	80	57
9	122	120	80
10	220	120	80
10/9	220	120	90
11	160	160	90
12	260	160	90

13	360	160	90
15	202	232	114
16	332	232	113

Notes:

1) For the ground kit used with BPG enclosure, a ground symbol 5017 or 5019 or GR shall be install close to the ground stud inside the enclosure.
2) The enclosures may also be manufactured in sizes not specified in the table. This assumes that any given dimension is not larger than the respective dimension of the largest enclosure or smaller than the respective dimension of the smallest enclosure

Ex e IIC, T*
Class I, Division 2, Groups A, B, C & D, T*

SX range of stainless steel junction boxes fitted with one or more terminal blocks, rated -50°C≤T_{amb}≤ *°C, T3/T6, Type 4X. Maximum ambient = 80°C when fitted with optional viewing window.

SX Model	Length (mm)	Width (mm)	Depth (mm)		Maximum Power Dissipation (W) from I^2R losses of the wiring						
			Min	Max	+40°C T6	+55°C T6	+60°C T6	+65°C T6	+80°C T3+	+80°C T3x	+175°C T3#
0	229	152	140	2000	19	3.34	2.23	1.84	2.23	3.34	1.84
0.5	274	184	140	2000	22	3.9	2.8	2.1	2.8	3.9	2.1
1	324	234	140	2000	29	4.97	3.86	2.7	3.86	4.97	2.7
1.5	306	306	140	2000	32	5	4	2.8	4	5	2.8
2	324	372	140	2000	36	5.64	4.23	2.88	4.23	5.64	2.88
3	448	372	140	2000	42	5.9	4.1	3	4.1	5.9	3
4	510	372	140	2000	44	6.1	4.36	3.19	4.36	6.1	3.19
5	510	510	140	2000	50	9.35	6.19	4.2	6.19	9.35	4.2
6	780	510	140	2000	57	10.1	7.97	5.6	7.97	10.1	5.6
7	950	650	140	2000	68	17.14	9.36	6.67	9.36	17.14	6.67
8	1250	800	140	2000	119	15.95	15.17	10.74	15.17	15.95	10.74
225	2000	2000	140	2000	359	NA	103	NA	103	NA	NA
45	114	114	51 (Nominal)		8	1.65	1.28	1.57	1.28	1.65	1.57
64	152	102	63 (Nominal)		10	0.7	0.5	0.3	0.5	0.7	0.3
66	152	152	102 (Nominal)		14	2	1.9	1.5	1.9	2	1.5

+ Terminal blocks must be rated a minimum of 100°C
x Terminal blocks must be rated a minimum of 110°C
Not suitable for use with optional viewing window

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BPG range of polymeric junction boxes fitted with one or more terminal blocks, rated -60°C≤T_{amb}≤ *°C, T4/T6, Type 4X

BPG Model	Length (mm)	Width (mm)	Height (mm)	Maximum Power Dissipation (W) from I^2R losses of the wiring				
				*+40°C T6	*+55°C T6	*+60°C T6	*+65°C T6	*+90°C T4
1	80	75	55	8.390	2.23	1.73	1.45	8.390
2	110	75	55	8.551	2.00	1.70	1.45	8.551
3	160	75	55	8.833	2.00	1.70	1.45	8.833
4	190	75	55	9.012	2.07	1.80	1.29	9.012
5	230	75	55	9.260	2.00	1.70	1.10	9.260
6	122	120	90	9.378	2.00	1.70	1.45	9.378
7	220	120	90	10.500	2.30	1.70	1.10	10.500
8	160	160	90	10.348	2.00	1.70	1.10	10.348
9	260	160	90	11.933	2.30	1.70	1.10	11.933
10	360	160	90	13.793	4.50	3.29	2.10	13.793
11	560	160	90	18.338	6.68	5.20	4.00	18.338
12	255	250	120	15.474	2.30	1.70	1.10	15.474
13	400	250	120	20.867	5.20	4.00	3.00	20.867
13.5	400	250	160	20.867	5.20	4.00	3.00	20.867
14	600	250	120	30.384	7.97	6.59	4.79	30.384
15	400	405	120	31.350	8.26	6.00	4.40	31.350

ZAG range of aluminum junction boxes fitted with one or more terminal blocks, rated -20°C≤T_{amb}≤ *°C, T3/T4/T5/T6, Type 4X

ZAG Model	Table 1 - Maximum Power Dissipation (W) from I^2R losses of the wiring							
	*+40°C T6	* +55°C T6	* +55°C T5	* +70°C T5	* +90°C T4	* +105°C T4	* +135°C T3	* +150°C T3
2	0.9	0.45	0.9	0.45	0.9	0.45	0.9	0.45
3	1.2	0.6	1.2	0.6	1.2	0.6	1.2	0.6
4	1.7	0.85	1.7	0.85	1.7	0.85	1.7	0.85
5	1.5	0.75	1.5	0.75	1.5	0.75	1.5	0.75
6	2.2	1.1	2.2	1.1	2.2	1.1	2.2	1.1
7	2.9	1.45	2.9	1.45	2.9	1.45	2.9	1.45
9	3.4	1.7	3.4	1.7	3.4	1.7	3.4	1.7
10	5.4	2.7	5.4	2.7	5.4	2.7	5.4	2.7
10/9	5.4	2.7	5.4	2.7	5.4	2.7	5.4	2.7
11	5.4	2.7	5.4	2.7	5.4	2.7	5.4	2.7
12	8.0	4.0	8.0	4.0	8.0	4.0	8.0	4.0
13	10.4	5.2	10.4	5.2	10.4	5.2	10.4	5.2
15	9.5	4.75	9.5	4.75	9.5	4.75	9.5	4.75
16	14.0	7.0	14.0	7.0	14.0	7.0	14.0	7.0

ZAG range of junction boxes with optional viewing window, rated -*C°≤T_{amb}≤ *°C, T3/T4/T5/T6, Type 4X :

Table 2			
'O' ring material	Use of optional viewing window	Applicable markings depending upon the power dissipation	
		T class	Ambient temp. range
Closed cell silicone rubber	With	T6	-60°C to +40°C
			-60°C to +55°C
Closed cell silicone rubber	Without	T6	-60°C to +40°C
			-60°C to +55°C
		T5	-60°C to +55°C
			-60°C to +70°C
		T4	-60°C to +90°C
			-60°C to +105°C
		T3	-60°C to +135°C
			-60°C to +150°C

Notes:

1) Wiring to or from these enclosures (SX, BPG and ZAG), must utilize wiring methods suitable for Class I, Division 2 Hazardous Locations, as appropriate for the installation.

2) Junction boxes of size not specified in the tables may be manufactured subject to the maximum dissipated power being based on a smaller enclosure.

APPLICABLE REQUIREMENTS

CSA C22.2 No. 14-95	Industrial Control Equipment
CAN/CSA C22.2 No. 94-M91	Special Purpose Enclosures
CSA C22.2 No. 158-87 (R1995)	Terminal Blocks
CSA C22.2 No. 213-M1987 *(Reaffirmed 2008)*	Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
CAN/CSA-C22.2 No. 60079-0:11 *(December 2011)*	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA-C22.2 No. 60079-7:12 *(February 2012)*	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

MARKINGS

The following markings shall be etched or engraved on a 316 Stainless Steel plate at least 0.5 mm thick:

ALL PRODUCTS:

- Manufacturer's name: "AB Tech", or CSA Master Contract Number "177805", adjacent to the CSA Mark in lieu of manufacturer's name.
- Model number: As specified in the PRODUCTS section, above.
- The CSA Mark, as shown on the Certificate of Conformity.
- Enclosure ratings: As specified in the PRODUCTS section, above.
- Hazardous Location designation: As specified in the PRODUCTS section, above (may be abbreviated).
- Method of Protection markings *(as applicable)*
- Manufacturing date in MMYY format, or serial number, traceable to year and month of manufacture.
- The designation "GND" or "GR" adjacent to the equipment ground terminal or ISO 60417, Symbol 5019 ⏚ adjacent to the equipment ground (protective conductor) terminal. *(BPG models with option ground kit only).*
- The following words *(BPG models with optional ground kit only):*
  - "WARNING – Make all ground connections inside the enclosure.
- The following words *(BPG models only):*
  - "Static Hazard – To only be cleaned with damp cloth"

JUNCTION BOXES ONLY:

- Maximum Power Dissipation: As specified in the PRODUCTS section, above.
- Ambient temperature rating: As specified in the PRODUCTS section, above.
- Temperature code: As specified in the PRODUCTS section, above.
- The following optional markings may be used: Class I, Zone 1, IIC, T3/T4/T5/T6 as applicable.

DIVISION 2 JUNCTION BOXES SHALL ALSO INCLUDE:

- Voltage and Current ratings of the installed terminal block.
- Terminal block manufacturer and manufacturer part number

- The following words:
  - "WARNING – EXPLOSION HAZARD - Substitution of components may impair suitability for Class I, Division 2."
  - "WARNING – EXPLOSION HAZARD – Do not connect while circuit is live unless area is known to be nonhazardous."

An installation manual or data sheet shall be supplied with each unit, containing the following minimum marking information as applicable:

- Manufacturer's name and address
- Electrical ratings
- Specification for ambient temperature rating
- Mounting and installation instructions, including dimensions, and the following words, or equivalent:
  - Wiring to or from this device, which enters or leaves the system enclosure, must utilize wiring methods suitable for Class I, Division 2 Hazardous Locations, as appropriate for the installation.
- The following words, or suitable equivalent:

- This equipment is suitable for installation in Class I, Zone 1 or Class I, Division 2, Group A, B, C, D hazardous locations or nonhazardous locations only.
- WARNING - Explosion Hazard. Do not connect or disconnect this equipment unless power has been removed or the area is known to be nonhazardous.
- WARNING - Explosion Hazard. Substitution of components may impair suitability for Class I, Division 2.

- Marking required for Polymeric enclosure consists of the following or equivalent wording
  - CAUTION: BONDING BETWEEN CONDUITS MUST BE PROVIDED

An enclosure is marked with an enclosure type number, for example, "Type 4X" or equivalent indicating the external conditions for which it is acceptable. An enclosure that complies with the requirements for more than one type of enclosure may have multiple designations, the lower number(s) being marked first.

For the ground kit used with BPG enclosure, marking shall be added external to the enclosure close to the ground stud, **Warning: Make all ground connection inside the enclosure.**

If the enclosure is not marked with the 4X rating, brass can be used for the ground kit.

If the enclosure is marked with 4X rating, A4 (316 or EN 1.4404) stainless steel shall be used for the ground kit.

Note - Jurisdictions in Canada may require these markings to also be provided in French language. It is the responsibility of the manufacturer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the manufacturer to determine this requirement and have bilingual wording added to the "Markings".