IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx IMQ 14.0010X**

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Certificate history:
Issue 1 (2016-07-08)
Issue 0 (2014-11-25)

Status: **Current**

Issue No: 2

Date of Issue: 2023-10-02

Applicant: **SUPERMEC Private Limited**
17, Tuas Ave 20
Singapore
638 828
Singapore

Equipment: **Enclosures with operators and control station serie EJB *** ***

Optional accessory:

Type of Protection: **Ex db; Ex db [ia]; Ex db [ib]; Ex tb**

Marking: Ex db IIB+H2 T4/T5/T6 Gb;
Ex db [ia Ga] IIB+H2 T4/T5/T6 Gb;
Ex db [ib Gb] IIB+H2 T4/T5/T6 Gb;
Ex tb III C T135/T100/T85 °C Db

Approved for issue on behalf of the IECEx Certification Body: **Mr. Mauro CASARI**

Position: **IMQ ExCB Manager**

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

Istituto Italiano del Marchio di Qualità S.p.A
Via Quintiliano 43
20138 Milano
Italy

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Certificate No.: **IECEx IMQ 14.0010X** Page 2 of 4

Date of issue: 2023-10-02 Issue No: 2

Manufacturer: **SUPERMEC Private Limited**
17, Tuas Ave 20
Singapore
638 828
Singapore

Manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

IT/IMQ/ExTR14.0010/01

Quality Assessment Report:

IT/CES/QAR23.0004/00

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Enclosures with flanged joint, used to contain electrical equipment (terminals, bus bars, transformers, resistors, breakers, analogic and digital instruments, fuses, relays, ballast, PLC, electronic equipments, etc).

They are provided with threaded entries in order to install operators and commands, evaluated as part of equipment UH.. and UP.. series (push-buttons, pilot lights, handles, etc.) and valves UV serie. The cover can be provided with round or square glass window.

IP6x if enclosure is fitted with ventilation/condensate drainage UV series.

Enclosures are made in stainless steel or in aluminium alloy.

Enclosures have a temperature class of T4, T5, T6 depending on maximum power installable inside.

Further details in Annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:
For enclosures EJB..A and EJB..S: the length L of flanged joints is greater than dimensions listed in IEC 60079-1:2014 standard: 32,20/42,20/52,20 mm versus 25 mm.

For operators the length L of joints is greater than dimensions listed in IEC 60079-1:2014 standard, as follows:
- UPB2 actual 25,5 mm vs 25 mm
- UPBL actual 29 mm vs 25 mm
- UHLB and UHB: actual 35 mm vs 25 mm
- UHS actual 32 mm vs 25 mm
- UVD actual 27 mm vs 25 mm
- UVB actual 28 mm vs 25 mm

When used in explosive dust atmosphere, adequate measures shall be taken to prevent dust from setting on the heated parts, this applies, in particular, on glass window. The equipment shall never be installed close to the processes able to generate hazardous voltage level due to effective charging mechanism.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1
• updating to standards: IEC 60079-1:2014, 7th Edition; IEC 60079-31:2013, 2nd edition
• IIB+H2 gas group introduced
• serie EJB...A (aluminium made):
- minimum ambient temperature extended to -40°C for all sizes;
- minimum ambient temperature extended to -60°C for sizes EJB1A, EJB2A, EJB3A, EJB3LA, EJB4A, EJB4LA, EJB45A, EJB45LA, EJB5A, EJB5LA, EJB55A, EJB55LA

Issue 2
Change QAR from IT/IMQ/QAR14.0002 (valid until 2023-06-19) to IT/CES/QAR23.0004 (audit and issue date: 2023-06-19; valid until 2026-06-19).

Annex:

IECEx IMQ 14.0010X issue No. 2 Annex.pdf

General description

Enclosures with flanged joint, used to contain electrical equipment (terminals, bus bars, transformers, resistors, breakers, analogic and digital instruments, fuses, relays, ballast, PLC, electronic equipments, etc).
They are provided with threaded entries in order to install operators and commands, evaluated as part of equipment UH.. and UP.. series (push-buttons, pilot lights, handles, etc.) and valves UV serie. The cover can be provided with round or square glass window.
IP6x if enclosure is fitted with ventilation/condensate drainage UV series.
Enclosures are made in stainless steel or in aluminium alloy.
Ambient temperature range (°C):

	-60 ÷ 60 °C -60 ÷ 40 °C	-40 ÷ 60 °C -40 ÷ 40 °C	-20 ÷ 60 °C -20 ÷ 40 °C
EJB...A	EJB1A, EJB2A, EJB3A, EJB3LA, EJB4A, EJB4LA, EJB45A, EJB45LA, EJB5A, EJB5LA, EJB55A, EJB55LA	*All models*	*All models*
EJB...S	*All models*	*All models*	*All models*
EJB...AS	-	*All models*	*All models*

Enclosures with plastic command are suitable for T≥-40°C.

Design options and sizes

Enclosures: body/cover made of stainless steel or aluminium alloy. Gasket made of silicon rubber.
Operators: made of stainless steel and plastic.
Enclosures have a temperature class of T4, T5, T6 depending on maximum power installable inside and specific temperature rise (K/W).

EJB…A with full metal cover		EJB…A with cover with glass window		EJB…S with cover with or without glass window		EJB…AS with cover with or without glass window	
Size	**K/W**	**Size**	**K/W**	**Size**	**K/W**	**Size**	**K/W**
EJB 1A	0,227	EJB 1A	0,274	EJB 1S	0,321	-	-
EJB 2A	0,190	EJB 2A	0,205	EJB 2S	0,267	-	-
EJB 3LA	0,172	EJB 3LA	0,176	EJB 3S	0,199	-	-
EJB 3A	0,152	EJB 3A	0,144	EJB 3LS	0,237	-	-
EJB 4LA	0,147	EJB 4LA	0,133	EJB 4S	0,156	-	-
EJB 4A	0,131	EJB 4A	0,111	EJB 4LS	0,182	-	-
EJB 45LA	0,116	EJB 45LA	0,091	EJB 45S	0,119	-	-
EJB 45A	0,105	EJB 45A	0,077	EJB 45LS	0,138	-	-
EJB 5LA	0,106	EJB 5LA	0,076	EJB 5S	0,098	-	-
EJB 5A	0,094	EJB 5A	0,063	EJB 5LS	0,116	-	-
EJB 55LA	0,086	EJB 55LA	0,054	EJB 55S	0,075	EJB 55AS	0,075
EJB 55A	0,076	EJB 55A	0,044	EJB 55LS	0,090	EJB 55LAS	0,090
EJB 6LA	0,076	EJB 6LA	0,043	EJB 6S	0,065	EJB 6AS	0,065
EJB 6A	0,068	EJB 6A	0,036	EJB 6LS	0,076	EJB 6LAS	0,076
EJB 7LA	0,065	EJB 7LA	0,033	EJB 7S	0,051	EJB 7AS	0,051
EJB 7A	0,059	EJB 7A	0,028	EJB 7LS	0,060	EJB 7LAS	0,060

		Maximum power (W) which can be possible to install inside each enclosure					
		EJB…A with full metal cover			EJB…A with cover with glass window		
		T6	T5	T4	T6	T5	T4
EJB 1A	$T_{amb\ max}$ = 40/60 °C	176 / 88	242 / 154	396 / 308	146 / 73	201 / 128	328 / 255
EJB 2A	$T_{amb\ max}$ = 40/60 °C	211 / 106	290 / 185	475 / 369	195 / 97	268 / 171	439 / 341
EJB 3LA	$T_{amb\ max}$ = 40/60 °C	232 / 116	319 / 203	522 / 406	227 / 113	312 / 198	510 / 397
EJB 3A	$T_{amb\ max}$ = 40/60 °C	263 / 132	362 / 230	592 / 461	278 / 139	382 / 243	625 / 486
EJB 4LA	$T_{amb\ max}$ = 40/60 °C	272 / 136	374 / 238	612 / 476	301 / 151	415 / 264	678 / 528
EJB 4A	$T_{amb\ max}$ = 40/60 °C	304 / 152	419 / 266	685 / 533	362 / 181	497 / 316	813 / 633
EJB 45LA	$T_{amb\ max}$ = 40/60 °C	344 / 172	473 / 301	774 / 602	440 / 220	605 / 385	990 / 770
EJB 45A	$T_{amb\ max}$ = 40/60 °C	381 / 191	525 / 334	858 / 668	519 / 260	714 / 455	1169 / 909
EJB 5LA	$T_{amb\ max}$ = 40/60 °C	377 / 188	518 / 329	847 / 659	523 / 262	720 / 458	1177 / 916
EJB 5A	$T_{amb\ max}$ = 40/60 °C	426 / 213	586 / 373	959 / 746	638 / 319	877 / 558	1436 / 1117
EJB 55LA	$T_{amb\ max}$ = 40/60 °C	467 / 234	642 / 409	1051 / 817	740 / 370	1017 / 647	1664 / 1294
EJB 55A	$T_{amb\ max}$ = 40/60 °C	528 / 264	727 / 462	1189 / 925	902 / 451	1240 / 789	2029 / 1578
EJB 6LA	$T_{amb\ max}$ = 40/60 °C	528 / 264	725 / 462	1187 / 923	924 / 462	1270 / 808	2079 / 1617
EJB 6A	$T_{amb\ max}$ = 40/60 °C	591 / 295	812 / 517	1329 / 1034	1107 / 554	1523 / 969	2491 / 1938
EJB 7LA	$T_{amb\ max}$ = 40/60 °C	614 / 307	844 / 537	1382 / 1075	1210 / 605	1664 / 1059	2722 / 2117
EJB 7A	$T_{amb\ max}$ = 40/60 °C	683 / 341	939 / 597	1536 / 1195	1434 / 717	1972 / 1255	3226 / 2509

		Maximum power (W) which can be possible to install inside each enclosure		
		EJB…S with cover with or without glass window		
		T6	T5	T4
EJB 1S	$T_{amb\ max}$ = 40/60 °C	125 / 62	172 / 109	281 / 218
EJB 2S	$T_{amb\ max}$ = 40/60 °C	150 / 75	206 / 131	338 / 263
EJB 3S	$T_{amb\ max}$ = 40/60 °C	201 / 101	277 / 176	453 / 352
EJB 3LS	$T_{amb\ max}$ = 40/60 °C	169 / 85	232 / 148	380 / 296
EJB 4S	$T_{amb\ max}$ = 40/60 °C	256 / 128	353 / 224	577 / 449
EJB 4LS	$T_{amb\ max}$ = 40/60 °C	219 / 110	301 / 192	493 / 384
EJB 45S	$T_{amb\ max}$ = 40/60 °C	335 / 167	460 / 293	753 / 586
EJB 45LS	$T_{amb\ max}$ = 40/60 °C	289 / 145	398 / 253	651 / 506
EJB 5S	$T_{amb\ max}$ = 40/60 °C	409 / 205	563 / 358	921 / 716
EJB 5LS	$T_{amb\ max}$ = 40/60 °C	344 / 172	473 / 301	774 / 602
EJB 55S	$T_{amb\ max}$ = 40/60 °C	530 / 265	729 / 464	1192 / 927
EJB 55LS	$T_{amb\ max}$ = 40/60 °C	444 / 222	611 / 389	1000 / 778
EJB 6S	$T_{amb\ max}$ = 40/60 °C	620 / 310	853 / 543	1395 / 1085
EJB 6LS	$T_{amb\ max}$ = 40/60 °C	524 / 262	720 / 458	1179 / 917
EJB 7S	$T_{amb\ max}$ = 40/60 °C	786 / 393	1081 / 688	1769 / 1376
EJB 7LS	$T_{amb\ max}$ = 40/60 °C	672 / 336	923 / 588	1511 / 1175

		Maximum power (W) which can be possible to install inside each enclosure		
		EJB…AS with cover with or without glass window		
		T6	T5	T4
EJB 55AS	$T_{amb\ max}$ = 40/60 °C	530 / 265	729 / 464	1192 / 927
EJB 55LAS	$T_{amb\ max}$ = 40/60 °C	444 / 222	611 / 389	1000 / 778
EJB 6AS	$T_{amb\ max}$ = 40/60 °C	620 / 310	853 / 543	1395 / 1085
EJB 6LAS	$T_{amb\ max}$ = 40/60 °C	524 / 262	720 / 458	1179 / 917
EJB 7AS	$T_{amb\ max}$ = 40/60 °C	786 / 393	1081 / 688	1769 / 1376
EJB 7LAS	$T_{amb\ max}$ = 40/60 °C	672 / 336	923 / 588	1511 / 1175

Key code:

EJB (1) (2) (3) (4)	(1) (2) (3) : dimensions according to related table (4): material: "A" – aluminium alloy "S" – stainless steel "AS" – aluminium body stainless steel cover

Conditions of use

For enclosures EJB..A and EJB..S: the length L of flanged joints is greater than dimensions listed in IEC 60079-1:2014 standard: 32,20/42,20/52,20 mm versus 25 mm.

For operators the length L of joints is greater than dimensions listed in IEC 60079-1:2014 standard, as follows:

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Installation conditions

- Maximum number of apertures, their maximum sizes and their positions are described in drawings: MP-0085-1 rev. 0 dated 2012-06-30 and MP-0185-1 rev. 0 dated 2012-06-30
- The content of the enclosures may be placed in any arrangement, provided that an area ≥ 30% of each cross-sectional area remains free.
- UV valves series have to be installed in a manner to prevent water penetration inside enclosure.
- Accessories used for cable entries and for unused holes shall be certified as 2GD category (EPLs Gb/Db), with type of protection Ex db and tb, and have IP66 at least.
- Minimum quality fasteners, for EJB enclosures, shall be A2-70 at least.
- IP6x if enclosure is fitted with ventilation/condensate drainage UV series.
- In case of ambient temperatures below -40°C and -50°C, austenitic steels (1.4305, 1.4301, 1.4401 or 1.4436 according to EN 10088-1), or aluminium alloy (EN AB 43300 according to EN 1676) shall be used.
- Use suitable cables, in relation to class temperature, when under rated conditions the temperature at the entry point can be higher than 70 °C, or the temperature at the branching point of conductors can be higher than 80 °C.
- Installation shall be carried out taking into account precautions to guard against any effect due to the presence of circulating currents caused by stray magnetic fields, and the arcs or sparks that may occur as a result of interrupting such currents, or excessive temperatures caused by such currents.
- Installation of equipment has to proceed according to IEC 60079-14.