

Surrey, KT22 7SA United Kingdom

IECEx Certificate of Conformity

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	INTERNATIONAL EL IEC Certification S for rules and details	LECTROTECHNICAL COMMIS ystem for Explosive Atmosph s of the IECEx Scheme visit www.iecex.com	SSION neres
Certificate No.:	IECEx ITS 15.0041X	Page 1 of 4	Certificate history:
Status:	Current	Issue No: 3	lssue 2 (2017-04-13) Issue 1 (2016-05-10)
Date of Issue:	2021-03-19		Issue 0 (2015-12-08)
Applicant:	Rose Systemtechnik GmbH Erbeweg 13 – 15 32457 Porta Westfalica Germany		
Equipment:	Power Distribution, Switchgear and	d Control Assembly - EFJB series	
Optional accessory:			
Type of Protection:	Ex db and Ex tb		
Marking:	Ex db IIB or IIB+H ₂ [1] Gb		
	Ex tb IIIC [2] Db IP66		
	-20ºC ≤ Ta ≤ +[3] See General Pro	oduct Description	
	IECEx ITS 15.0041X		
Approved for issue of Certification Body:	on behalf of the IECEx	P Moss	
Position:		Certification Officer	
Signature: (for printed version)			
Date:			
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Certificate issue	d by:		
Intertek Testing ITS House, Clea Leatherhead	& Certification Limited	i	ntertek



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Date of issue:	2021-03-19	Issue No: 3
Manufacturer:	Rose Systemtechnik GmbH Erbeweg 13 – 15 32457 Porta Westfalica Germany	
Additional manufacturing locations:	Additional Manufacturing Locations are included in Annex 2	

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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" Edition:7.0

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:

GB/ITS/ExTR15.0034/03

Quality Assessment Report:

DE/EPS/QAR17.0003/31



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The apparatus consists of a range of Six Power Distribution, Switchgear and Control Assembly referred to as the EFJB Series.

The configuration shall be in accordance with the manufacturer work instruction entitled 'Work Instruction for Configuration of Products from EFJB Series Enclosures'

See Annex 1 for the full product description

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 1. Only suitably rated and certified bushings shall be selected referring to the equipment marking.
- 2. When connecting to other certified enclosures a minimum distance of 40mm to be maintained from the flange joint
- 3. Each entry shall have no more than one thread adapter. A blanking element shall not be used with thread adapter.
- 4. Enclosures are to be installed in vertical position only.
- 5. No modifications must be made to the flame paths without consultation of the drawings listed on the ExTR.
- 6. Use cables suitable for operating temperature referring to marking as per recommendation of IEC 60079-14.
- 7. In the Ex enclosure, equipment may be placed in any arrangement provided that an area of at least 20% for Group IIB or 40% for Group IIB+H₂ of each cross-sectional area remains free to permit unimpeded gas flow and, therefore, unrestricted development of an explosion. 8. Yield strength of cover fixing fasteners shall be ≥450 MPa with the tolerance limit 6g.
- 9. The LED Indicating lamps assembled on EFJB are suitable for low risk of mechanical danger i.e. 2 Joules.
- 10. When EFJB enclosures are assembled with Control Accessories i.e. Indicating lamps, Push button and Rotary actuators; may pose risk of electrostatic discharge for Group III applications, hence clean with damp cloth only.
- 11. The Control accessories LED Indicating lamp service temperature is -60°C to +100°C, Hence Indicating lamps can be used for T Class T5 and T6; and shall not be used on EFJB enclosures with T Class T4.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This variation comprises the following changes to the Equipment:

- 1. Revision as per IEC 60079-0:2017.
- 2. Re-designation of the Power Distribution, Switchgear and Control Assembly as EFJB Series instead of EJB series.
- 3. No. of glass windows on each enclosure have been reduced.
- 4. Added the following in the Condition of safe use.
 - In the Ex enclosure, equipment may be placed in any arrangement provided that an area of at least 20% for Group IIB or 40% for Group IIB+H₂ of each cross-sectional area remains free to permit unimpeded gas flow and, therefore, unrestricted development of an explosion.
 - Yield strength of cover fixing fasteners shall be ≥450 MPa with the tolerance limit 6g.
 - The LED Indicating lamps assembled on EFJB enclosures are suitable for low risk of mechanical danger i.e. 2 Joules.
 - When EFJB enclosures are assembled with Control Accessories i.e. Indicating lamps, Push button and Rotary actuators; may pose risk of electrostatic discharge for Group III applications, hence clean with damp cloth only.
 - The Control accessories LED Indicating lamp service temperature is -60°C to +100°C, Hence Indicating lamps can be used for T Class T5 and T6; and shall not be used on EFJB enclosures with T Class T4.
- 5. Update of the drawings to reflect above changes since previously certified drawings were having manufacturing (Related) details in schedule drawing.

Annexes:

SFT-IECEx-OP-19f - Annex 1 for IECEx Certificate of Conformity EFJB_1.pdf SFT-IECEx-OP-19f - Annex 2 for IECEx Certificate of Conformity Add. Manufacturing location.pdf





Annex No. 1

IECEx ITS 15.0041X

Issue No. 1

DESCRIPTION OF EQUIPMENT

The apparatus is a series of six enclosures for Power Distribution and Control Assembly - EFJB Series

(EFJB 01, EFJB 02, EFJB 03, EFJB 06, EFJB 09 & EFJB 10). The material of construction of enclosure assembly is EN AC-AlSi12 (a) (EN AC 44200) for EFJB 01, EFJB 02, EFJB 03 and EN AC-AlSi7Mg (EN AC 42000) heat treated for EFJB 06, EFJB 09, EFJB 10 Al alloy as per EN 1706 or equivalent Al alloy having same or more proof stress, alternate suitable material of SS 304 or 316L or Cast Iron. The enclosure is provided with flange bolted lid. Silicone grease Anabond 662 or equivalent has been provided in flange joint to achieve ingress protection of IPX6 in accordance with IEC 60529 and IP6X in accordance with IEC 60079-31. O ring of Silicon may be provided between base & lid as an option for ingress protection of IPX6 in accordance with IEC 60529 and IP6X in accordance with IEC 60079-31. However, in case of Ex tb enclosures Ingress protection IP66 with silicone grease is not allowed and Silicone O ring to achieve the same will be provided by default.

Cable/conduit entries are provided for the accommodation of suitable cable/conduit entry devices.

Type No.	Dimensions	(mm)		Max Rated	Max Conductor	
	w	н	D	Current (A)	Size (mm²)	
EFJB 01	170	220	152	76	16	
EFJB 02	220	270	158	125	35	
EFJB 03	270	320	166	232	95	
EFJB 06	440	490	250	415	240	
EFJB 09	580	780	440	935	630	
EFJB 10	680	980	485	1055	1000	

Permissible entries from each side		EFJB 01	EFJB 02	EFJB 03	EFJB 06	EFJB 09	EFJB 10
M20 or ½"	Short Side	04	06	08	21	54	55
NPT	Long Side	06	08	10	24	84	90
M25 or ¾"	Short Side	02	04	06	17	33	45
NPT	Long Side	04	05	08	20	54	75
M32 or 1"	Short Side	01	03	04	11	28	30
NPT	Long Side	02	04	05	12	43	50
M40 or 1 ¼"	Short Side	-	02	03	08	18	21
NPT	Long Side	-	03	03	10	28	33
M50 or 1 ½"	Short Side	-	-	02	04	12	18
NPT	Long Side	-	-	03	05	21	27
M63 or 2"	Short Side	-	-	-	03	11	12
NPT	Long Side	-	-	-	04	17	20
M75 or 2 ½"	Short Side	-	-	-	03	06	08
NPT	Long Side	-	-	-	03	09	14
M90 or 3" or 3 ½" NPT	Short Side	-	-	-	-	05	07
	Long Side	-	-	-	-	08	11
M100 or 4"	Short Side	-	-	-	-	05	06
NPT	Long Side	-	-	-	-	07	08



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These enclosures can be used as control panel or terminal box for power, control, instrumentation, heat trace, battery charger and UPS etc. All type of electrical/electronic power components (e.g. Switch, MCB, MPCB, MCCB, Contactors, transformers, rectifiers, invertors, relays, transducers, isolators, barriers, power supply, PLC, IO's, PCB etc.) and or terminals of size and combination as required. The rating of components and terminals will generally be up to 1.1KV AC/DC subject to max permissible watt dissipation as shown hereunder. However, declared voltage rating is nominal and items having higher voltage rating as required may be populated inside enclosure subject to required creepage and clearance and within permitted watt dissipation.

	[1] T Class		Т6			T5			T4	
[4] Type No	[2] Dust Temp. Marking		T80°C			T95°C			T130°C	
NO.	[3] Max. Ambient Temp.	+40°C	+50°C	+60°C	+40°C	+50°C	+60°C	+40°C	+50°C	+60°C
EFJB 01		60 W	-	36W	-	-	-	-	-	-
EFJB 02		76W	-	42W	-	-	-	-	-	-
EFJB 03	[5]	87W	-	60W	-	-	-	-	-	-
EFJB 06	Dissination	209W	166W	114W	338W	260W	206W	584W	514W	436W
EFJB 09	2.00.pution	467W	319W	236W	728W	555W	353W	1238W	1145W	956W
EFJB 10		726W	568W	400W	1085W	864W	712W	2038W	1709W	1454W

Note: The watt dissipation values for T6 at 40°C, 50°C and 60°C can be used by extrapolation for marking T5 at higher ambient of 55°C, 65°C and 75°C and similarly watt dissipation values for T5 at 40°C can be used by extrapolation for marking T4 at higher ambient of 75°C.

Lid may be populated with Ex certified IECEx ITS 16.0002U control accessories (combination of various types of PB actuators, rotary actuator for Switch, MCB, MPCB, MCCB, LED indicating lamp etc.) in required number & combination in permissible numbers as shown hereunder. LID may also be populated with display window for indicating or control instruments with display in required number & size within permissible limit as shown. Smaller size display window can be provided e.g. 120x90 mm instead of 140x140 mm without altering glass thickness.

Type No.	Max Number				Display Wi	indow (mm)		
	of control	44 x 44	92 x 92	140 x 140	186 x 186	234 x 234	280 x 280	328 x 376	376 x 376
	components								
EFJB 01	04	01	-	-	-	-	-	-	-
EFJB 02	09	01	01	-	-	-	-	-	-
EFJB 03	16	01	01	01	-	-	-	-	-
EFJB 06	49	01	02	01	01	01	-	-	-
EFJB 09	88	01	03	01	01	01	01	01	-
EFJB 10	150	01	04	01	01	01	01	01	01

Power distribution, switchgear and control assembly may be formed consisting of one or more enclosure of this EFJB series and other certified enclosures. The electrical connection shall be made by direct entry or by using terminal boxes or control and distribution boxes in type of protection increased safety. These shall be joined together through certified bushing keeping a minimum distance of 40mm from flange joint.



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Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
* POWER DISTRIBUTION, SWITCHGEAR AND CONTROL ASSEMBLY - EFJB SERIES SHEET 1 of 4	EX.PMI.EFJB.201	3	01.12.2020
*POWER DISTRIBUTION, SWITCHGEAR AND CONTROL ASSEMBLY - EFJB SERIES SHEET 2 of 4	EX.PMI.EFJB.201	3	01.12.2020
*POWER DISTRIBUTION, SWITCHGEAR AND CONTROL ASSEMBLY - EFJB SERIES SHEET 3 of 4	EX.PMI.EFJB.201	3	01.12.2020
*POWER DISTRIBUTION, SWITCHGEAR AND CONTROL ASSEMBLY - EFJB SERIES SHEET 4 of 4	EX.PMI.EFJB.201	1	01.12.2020
*Instruction Manual for Power Distribution, Switchgear and Control Assembly - EFJB Series	Ex.PMI.EFJB.IM	-	12.2020

Req	Required Manufacturer Routine Testing					
Test	Title/Description of Test	Standard and Clause				
1	A routine overpressure test shall be carried out by the manufacturer on EFJB Series enclosures at a pressure of 11.5 bar / 166.8 PSI for a period of at least 10 seconds and test results recorded. The overpressure test shall be considered satisfactory if no permanent deformation or damage invalidating the type of protection observed, the joints shall in no place have been permanently enlarged and no leakage through the walls of the enclosure shall be observed.	IEC 60079-1:2014 Clause 16				





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Issue No. 1

Additional Manufacturing Locations

Phoenix Mecano Kecsemet KFT Szent Istaván krt. 24 6000 Hungary

PM Komponenten N.V. Karrewegstraat 124 9800 Deinze Belgium

Phoenix Mecano B.V. Havenstraat 100 7005 AG Doetinchem The Netherlands

Phoenix Mecano S.E. Asia Pte. Ltd. 53 Ubi Ave 3 #04-01 Colourscan Building Singapore 408863

Phoenix Mecano (India) Private Limited Pirangut Industrial Area, Post Ghotawade Plot 388, Village Bhare, Taluka Mulshi Dist. Pune - 412115 India

Phoenix Mecano India Pvt. Ltd Plant III, Gat No 408, 410 & 412, Village – Urse, Taluka – Maval, Talegaon Urse Road, Dist. Pune – 410506, India

Mecano Components Co., Ltd/012 No.1001, Jiaqian Road, Nanxiang, Jiading District Shanghai P.R.C. 201802 China

Phoenix Mecano Inc. 7330 Executive Way Frederick MD 21704 USA

Phoenix Mecano Saudi Arabia LLC, Building no 3267, king Abdul Aziz Road Unit No1, Dharan 3451, Dammam, Kingdom of Saudi Arabia



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Rose Systemtechnik Middle East, P.O. Box 8993, Sharjah, U.A.E



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