

सीएसआईआर- केन्द्रीय खनन एवं ईंधन अनुसंधान संस्थान

(विज्ञानिक तथा औद्योगिक अनुसंधान परिषद)
बरवा रोड, धुबनबाद - 826015, झारखण्ड, भारत



CSIR-Central Institute of Mining & Fuel Research

(Council of Scientific & Industrial Research)
Barwa Road, Dhanbad - 826015, Jharkhand, India

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SPEED POST/COURIER SERVICE

Test & Assessment Report No.: IN/CIMFR/TR20/172

Dated: 16 January, 2020

ID No. I44/19

ULR No.: TC596220000000190F

TC CODE NO. FES/87 J/19-20

To
M/S. KESHKAMAT & COMPANY
9/129, ADARSH NAGAR, PRABHADEVL
MUMBAI - 400 030

Subject: Type Examination Certificate along with test assessment report of Flameproof cum Weatherproof Junction Box, in cast aluminium Alloy LM-6 construction designated by Model: KKJB/19F as per IS/IEC 60079-1:2014 for use in Gas Group: IIB, EPL Gb atmosphere.

- (Test Report)

Your Ref. Appli. No.: KK/CIMFR/19/11

Dated: 07/07/2019

Dear Sir,

Please find the enclosed Type Examination Certificate along with test assessment report of the above sample submitted by you.

This Institute reserves the right to review, amend or withdraw this 'Revalidation Test Report' at any time, if considered necessary in the interest of safety.

Charges of Rs. 41,194/- (Rupees Forty one Thousand One Hundred Ninety four Only) including applicable service tax involved towards the testing have been adjusted against the advance deposit made by you.

Kindly arrange to collect the sample within 90 days from the date of receipt of this letter failing which CIMFR would dispose of the samples by public auction without any further NOTICE to you.

Kindly acknowledge the receipt.

Thanking you.

Yours faithfully,

S. K. Mondal
14/01/2020

(S. K. MONDAL)
HOS
TESTING CELL

Encl: As above.

1. Test assessment report in Four Copies
 2. Type Examination Certificate
- Copy to: 1. Head, Flameproof & equipment Safety
2. Bill section



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ज्वालासह एवं उपकरण सुरक्षा / FLAMEPROOF & EQUIPMENT SAFETY

परीक्षण प्रमाण पत्र / TEST CERTIFICATE



NABL, Certificate No.: TC-8963

FORMAT NO.: (CIMFR: DQM: FLP02: P-01:REV-01)

(Flameproof & Equipment Safety)

Equipment ID No.: 144/19

ULR No.: TC596220000000190F Code No. PES/87 J/19-20

Test & Assessment Report No.: IN/CIMFR/TR20/172

Dated: 16 January, 2020

Application Ref. No.: KK/CIMFR/19/11

Dated: 07/07/2019

1. Applicant : M/S. KESHKAMAT & COMPANY
9/129, ADARSH NAGAR, PRABHADEVI,
MUMBAI - 400 030
2. Manufacturer : Same as above
3. Equipment : Flameproof cum Weatherproof Junction Box.
4. Designated by : Model: KKJB/19F,
5. Gas Group, EPL : Group : IIB atmosphere, EPL Gb.
6. Electrical ratings : Rated 240V AC/250V DC, 50Watt (max.)
7. Temperature Class : T6
8. Degree of ingress Protection : IP-66
9. Material of Construction : Cast aluminium Alloy LM-6 construction, Refer drawing for material thickness at different locations of the enclosure.

10. Description of the equipment: Flameproof cum Weatherproof Junction Box.

Description	Volume in cc		Min. Wall Thickness (mm)	Nos. & Size of Bolts/Fasteners
	Gross	Net		
Single Enclosure	2000	200	10mm	8 Nos. M6x35mm long Allen cap HD screw,

Glass details		Max no. of aperture on cover
Nil		NIL

11. Nature of Flameproof Joint: Type of joints and gaps (Spigot joint, Threaded joint, Cylindrical joint for Gus Gr. IIB)

Sr. No	Location of flamepath	Type of Joint	Min. length of flamepath (in mm)		Max. gap (in mm)/no. of threads (pitch)	
			Req.	Spec.	Req.	Spec.
1.	Between single enclosure body and cover.	Flange joint	L=12.5	L=15	0.20	0.15

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Equipment ID No.: 144/19

ULR No.: TC596220000000190F Code No. FES/87 J/19-20

Max No. & size of external/exit cable entries: Maximum threaded entry is provided for attachment of certified and approved FLP/WP double compression type cable glands as follows.

Sr. No.	Max. Size of Cable Entries	Nos. of Cable entries provided in test sample			
		Side - A	Side - B	Side - C	Side - D
1	M20X1.5P (L = 14mm, T=8nos.)	01	01	01	01
2	M25X1.5P (L = 14mm, T=8nos.)	01	01	01	01

12. Name plate and warning inscription: The name-cum-warning inscription plate and rating plate made of Brass/SS is permanently fixed on the cover of enclosure by hammer driven rivets. The warning inscription shall read as "ISOLATE SUPPLY BEFORE OPENING".

13. Drawing: The unit is designed and constructed as flameproof and weatherproof in accordance with the requirements of IS/IEC 60079-0:2011, IS/IEC 60079-1: 2014 & IS/IEC 60529: 2001 (Reaffirmed 2014).

Sl. No.	Dwg. No.	File	Rev.	Sheet	Date
1.	KK/JB/2019/20/F	FLAMEPROOF CUM WEATHERPROOF JUNCTION BOX	0	1 of 4 To 4 of 4	19/05/2019

14. Any other relevant information:

- As per Clause 4.2 Note - 2 of IS/IEC 60079-0:2011 the equipment mark IIB is suitable for application requiring HA equipment, As per Clause 4.3 Note of IS/IEC 60079-0:2011.
- The material of construction of the enclosure may be CI/MS/SS instead of die cast aluminum alloy LM-6 construction.
- Equal and equivalent medium class fit NPT threads conforming to requirements of ANSI/ASME B1.20.1 may be used instead of metric threads conforming to ISO 965-1 & 965-3 as per Clause No. 5.3 & 13 of IS/IEC 60079-1:2014.

15. Declaration by the Applicant/Manufacturer:

(i) As to standards with which the equipment complies in respect of:

- Electrical equipment for Potentially Explosive atmosphere - General requirements: IS/IEC 60079-0: 2011
- As to flameproof protection IS/IEC 60079-1: 2014
- Ingress protection as per IS/IEC 60529: 2001(Reaffirmed 2014)

(ii) Composition of the cast aluminum alloy LM-6 declared by the manufacturer: Composition of cast aluminum alloy LM-6 purported to be forming the material of construction of the enclosure has been declared by the manufacturer in the drawing having Mg. 0.1%. If constructed of copper or copper alloy should be less than 60% of copper content.

However no sample of the alloy was drawn from the prototype enclosure for verifying its chemical composition declared by the manufacturer.

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KKJR/19F (4)

[Continuation Sheet]

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परीक्षण रिपोर्ट / TEST REPORT



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(Flameproof & Equipment Safety)

Equipment ID No.: 144/19

ULR No.: TC596220000000190F Code No. FES/87 J/19-20

16. Documents Submitted :

- i) Application form
- ii) Drawings
- iii) Prototype/test sample

17. Compliance of prototype or sample with documents: The test sample of electrical equipment submitted for the type tests complies with the manufacturers documents referred above.

18. Condition of sample on receipt: Good

Note: CIMFR has however not checked and tested the compliance of the equipment to any standard other than the above standards.

SCOPE OF THE TEST CERTIFICATE

The Test Certificate issued by CIMFR certifies that the equipment has been found to comply with the definition of flameproof cum weatherproof EQUIPMENT contained in the relevant Standard specifications. They do not vouch for the quality of the equipment in any other respect. The present test report pertains to the sample received only.

This Institute reserves the right to review, amend or withdraw this Test Report at any time if considered necessary in the interest of safety.

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FORMAT NO.: (CIMFR: DQM: PLO2: F-01:REV-01)

(Flameproof & Equipment Safety)

Equipment ID No.: 144/19

ULR No.: TC596220000001907 Code No. FES/87 J/19-20

Test & Assessment Report No.: IN/CIMFR/TR20/172

Date: 16 January, 2020

REPORT OF TEST

Date of Test: 28/08/2019

Test Equipment Used:

(1). Impact test setup, (2). Ingress protection (IP) test setup, (3). Temperature class test setup, (4). Computer, Kistler Piezo Electric Transducer and Charge Amplifier for conducting Explosion Pressure Tests, (5). Overpressure Test Setup, (6). Non-transmission of Internal Ignition test setup.

Result #A: Tests as per IS/IEC 60079-0: 2011:

Type Tests			
Clause	Tests	Remarks	Results (Complies, P- Pass, NA-Not Applicable, F-Fail) References
1	Scope		Complies
2	Normative references		Complies
3	Terms and definitions		Complies
4	Equipment grouping and temperature classification	Gas Group: III, IFL, Gb,	Complies
5	Temperatures		
5.1.1	Ambient temperature	-20°C to 40°C Amb.	Complies
6	Requirements for all electrical Equipment		Complies
6.6	Electromagnetic and ultrasonic energy radiating equipment		NA
7	Non-metallic enclosures and non-metallic parts of enclosures		NA
7.2	Thermal Endurance		NA
8	Metallic Enclosure and metallic part of End	Cast aluminium Alloy LM-6 construction (as declared by applicant)	Complies
9	Fasteners	as declared by applicant	Complies
10	Interlocking devices		NA
11	Bushings		NA
12	Materials used for cementing		NA
13	Ex components	-----	NA
14	Connection facilities and terminal compartments		NA
15	Connection facilities for earthing or bonding conductors		Complies
16	Entries into enclosures		Complies
17	Supplementary requirements for rotating electrical machines		NA
18	Supplementary requirements for switchgear		NA

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Equipment ID No.: 144/19

ULR No.: TC59622000000190F Code No. FES/87 J/19-20

19	Supplementary requirements for fuses		NA
20	Supplementary requirements for plugs and sockets		NA
21	Supplementary requirements for luminaries		NA
22	Supplementary requirements for caplights and handlights		NA
23	Equipment incorporating cells and batteries		NA
24	Documentation		Complies
25	Compliance of prototype or sample with documents		Complies
26	Type tests		Complies
26.3	Tests in explosive mixtures		
26.3	Tests for Flameproof (Ex 'd') protection	Verification for Compliance to Ex 'Gb' requirements as per IS/IEC 60079-1: 2014	P/As per Result #B
26.4	Test of enclosures		
26.4.2	Test for resistance to Impact		P/As per Result #A1
26.4.3/2	Drop test		NA
6.4.4		(Not a handheld equipment or portable device)	
26.4.5	Tests for the Degree of protection IP		
26.4.5	IP of equipment	IP-66 Ability to prevent ingress of dust & water - as per IS/IEC 60529:2001 (Reaffirmed 2014)	P/As per Result #A3
26.5	Thermal tests		
26.5.1	Temperature measurement		P/As per Result #A2
26.5.2	Thermal shock test - for glass parts		NA
26.6	Torque Test for bushings		
26.6	Torque test for bushings		NA
26.7	Tests for non-metallic enclosures or of non-metallic parts of encl.		
26.8	Thermal endurance to heat	-----	NA
26.9	Thermal endurance to cold	-----	
26.10	Resistance to light	-----	NA
26.11	Resistance to chemical agents for Gr.I	-----	NA (Only applicable for Gr. I equipment)
26.12	Earth continuity test via non-metallic enclosure		NA
26.13	Surface resistance test of parts of enclosures of Non metallic materials	-----	NA
26.14	Charging test		NA
26.15	Measurement of Capacitance		NA
27	Routine verification and tests	Manufacturer's responsibility: Compliance to prototype of the product and physical measurement of gap and flamepath and hydraulic test at the pressure given in Result#B2 for every sample.	
28	Manufacturer's responsibility	Conformity of the equipment to the applicable standards	Complies

की प्रतिलिपि

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(Flameproof & Equipment Safety)

Equipment ID No.: 144/19

ULR No.: TC59622000000190F Code No. FES/87 J/19-20

29	Marking	Ex db IIB T6 Gb
30	Instructions	Instruction related to use, installation, maintenance, adjustment to be provided by the manufacturer along with the equipment.

Result#A1: 1kg hard mass of hardened steel allow to fallen vertically on the surface of the enclosure to create impact energy for Gr. II equipment. No significant damage was observed.

Result#A2: The surface temperature rise classification of the above apparatus has been determined by injecting 90% of rated current supply (240V) in the terminal mounted inside the enclosure and the surface temperature classification is considered as T6 at maximum ambient temperature of 40°C.

Result#A3: IP-Protection: Neoprene 'O' ring gasket (Ø4mm thick) is provided at the end of joint for weatherproof IP-66 degree of protection. Tests have been conducted as per IS/IEC 60529:2001 as tabulated below for IP-66 degree of protection.

Sl. No	Type Tests		Results	
1.	Dust Test (First Numeral 6)	Clause 13.4 & 13.6	No dust had accumulated inside the enclosure in harmful quantity.	Pass
2.	Water Test (Second Numeral 6)	Clause 14.2.6	No significant water had accumulated inside the enclosure in harmful quantity.	Pass

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Result #B: Tests in explosive mixtures: Tests for type of protection Ex db as per IS/IEC 60079-1:2014.

Type Tests			
Class No.	Description and relevant tests	Remarks	Results (Complies, P- Pass, NA-Not Applicable, F-Fail) References
1	Scope		Complies
2	Normative references		Complies
3	Terms and definitions		Complies
4	Level of protection (Equipment Protection Level, EPL)	Gas Group IIB, EPL Gb	Complies
5	Flameproof joints	Flange joint	Complies
6	Sealed joints		NA
6.1	Cemented joints		NA
6.1.2	Mechanical strength:		NA
7	Operating rods		NA
8	Supplementary requirements for shafts and bearings		NA
9	Light transmitting parts		NA
10	Breathing and draining devices which form part of a flameproof enclosure		NA
11	Fasteners and openings	As declared by applicant	Complies
12	Materials	Cast aluminium Alloy LM-6 construction	Complies
13	Entries for flameproof enclosures		Complies
14	Verification and tests		Complies
15	Type Tests		
15.2	Tests of ability of the enclosure to withstand pressure		
15.2.2	Determination of Explosion Pressure (Reference Pressure)		P/As per Result #B1
15.2.3	Overpressure Test		P/As per Result #B2
15.3	Test for non-transmission of an internal ignition		
15.3.1	General		Complies
15.3.2	Electrical equipment of Groups IIB		P/As per Result #B3
15.3.3	Electrical equipment of Group IIC		NA
15.4	Tests of flameproof enclosures with breathing and draining devices		
15.4.1	General		NA
16	Routine tests	To be conducted by the manufacturer As per Result #B2	Complies
17	Switchgear for Group I		NA
18	Lamp holders and lamp cups		NA
19	Non-metallic enclosures and non-metallic parts of enclosures		
19.1	General		NA

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Equipment ID No.: 144/19

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19.2	Resistance to tracking and creepage distances on internal surfaces of the enclosure walls		NA
19.3	Requirements for type test		NA
19.4	Test of erosion by flame		NA
20	Marking		Ex db IIB T6 Gb
20.2	Caution and warning markings		"ISOLATE SUPPLY BEFORE OPENING"
21	Instruction	The manufacturer shall supply instruction manual regarding the equipment	Complies

Result # B1: Determination of Explosion pressure (Reference Pressure Test) *:

Gas mixture: Test with 8% Ethylene in air.

No. of Tests: 3 nos. test with single enclosure.

Test Condition: Enclosure fitted with component and tested as per clause 15.2.2.2

Type of Test	Gas Group	Gas Mixture % in Air		No. of Tests	
Preliminary Test (reference pressure)	IIB	8% Ethylene in air		Three	
Test Ref. No.	Ignition	Gauge Position	Max. Pressure in Bar	Time of Pressure rise in millisecond	Remark
Single Enclosure					
PPM/1441901	Body	Body	5.68	11.52	No evidence of distress
PPM/1441902	Body	Body	5.5	11.34	-do-
PPM/1441903	Body	Body	5.53	11.58	-do-

*Results shown for the pressure time curve (enclosed) are the highest recorded value obtained in the test.

Result #B2: Overpressure Test (Static Method): Hydraulic pressure test is conducted as per Cl. 15.2.3.2 of IS/IEC 60079-1: 2014.

Enclosure	Test reference nos.	Over pressure (kg/cm ²) maintained for 10 sec.	Remark
Single Enclosure	OPM/1441904	9.0 kg/cm ²	No damage or deformation

Result #B3: Test for Non transmission of internal ignition:

Gas Mixture: Test with 37% Hydrogen in air for Gas Gr. IIB

No. of Tests: 5 nos. tests with Single enclosure.

Test Condition: Table 12 and 15.3.2.1 (No precompression required)

Name of Enclosure	Test Ref. Nos.	Gas Group	Gas Mixture % in Air	No. of Test	Result
Single Enclosure	EIT/1441905 to EIT/1441909	III	37 % Hydrogen	Five	Pass

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ID Number: 144/19 Code Number: FES/87J/19
ज्वालासह एवं उपकरण सुरक्षा / FLAMEPROOF & EQUIPMENT SAFETY

Test Date: 28/08/2018
परीक्षण प्रमाण पत्र / TEST CERTIFICATE

Manufacturer Details: M/S KESHKAMAT & COMPANY

Manufacturer Address: MUMBAI - 400 30

Model / Type: MODEL NO. : KKJB/19F

Category No. : CAT. NO. : KKJB/60/F

Gas: ETHYLENE

Gas Group: IIB

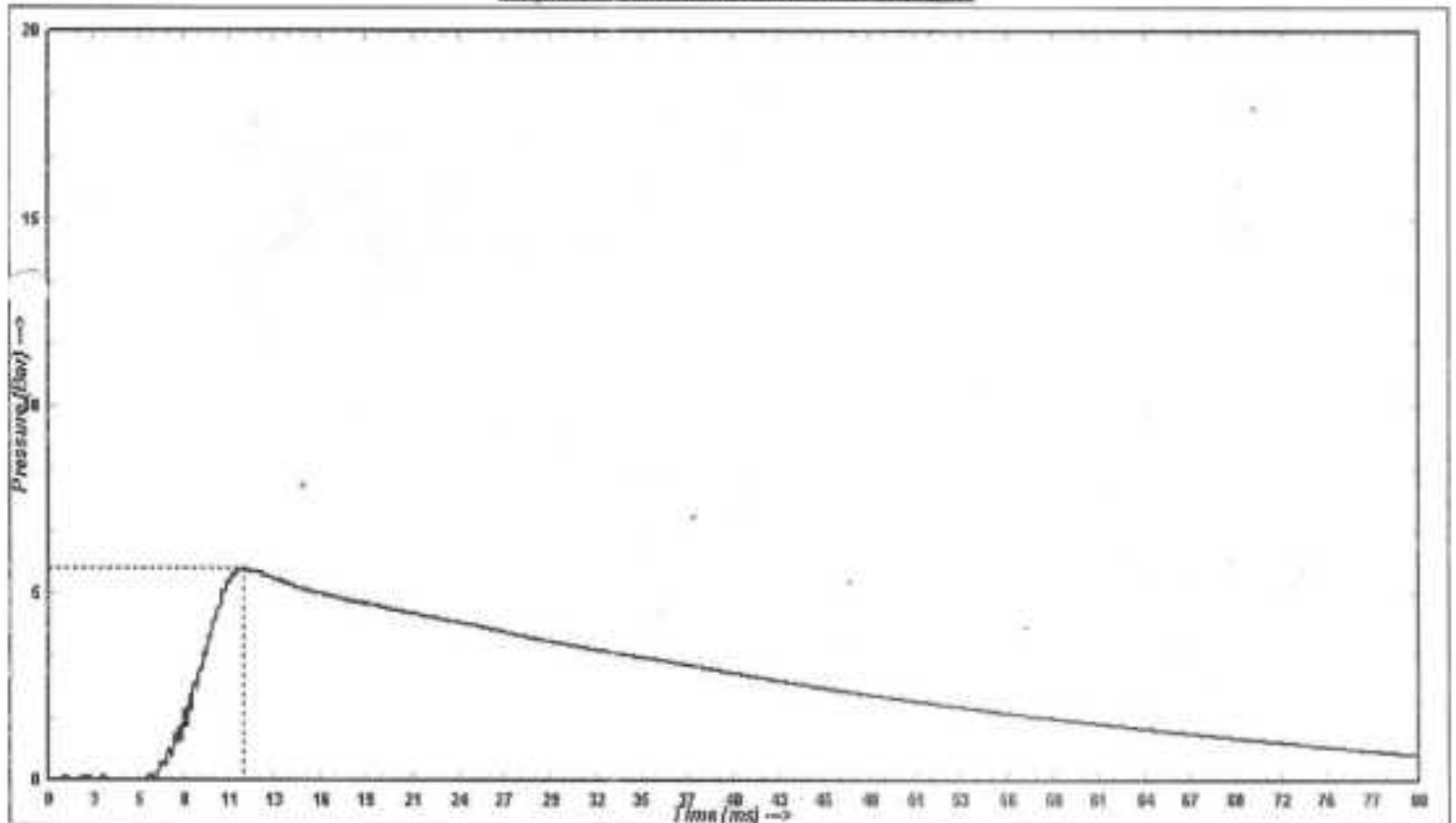
Equipment Details: FLP/WP JUNCTION BOX

Enclosure Details: SINGLE ENCLOSURE

Serial / Badge No. : NA

Peak Pressure: 5.68 Bar at 11.52 ms

Explosion Pressure vs Time Graph



बी.प्रसन्न

(Testing Officer)

(Discipline Head)

15/01/2020

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FORMAT NO.: (CIMFR: DQM: FLP02: F-01:REV-01)

(Flameproof & Equipment Safety)

Equipment ID No.: 144/19

ULR No.: TC:596220000000190F Code No. FES/87 J/19-20

CONCLUSION: The Flameproof cum Weatherproof Junction Box, in cast aluminium Alloy LM-6 construction designated by Model: KKJB/19F, meets the test requirements for flameproofness as per IS/IEC 60079-1: 2014, general requirements as per IS/IEC 60079-0: 2011, weatherproof (IP-66 degree) as per IS/IEC 60529:2001 (Reaffirmed 2014). Hence, the above mentioned equipment may be used in Gas Group: IIB Category EPL Gb atmosphere.

Reported By

वी-प्रसाद

(PRASAD BHUKYA)

Scientist

Dated: 13 January, 2020

Flameproof & Equipment Safety

CSIR - Central Institute of Mining & Fuel Research,

Barwa Road, Dhanbad - 826 015,

(Jharkhand) India

Checked & Approved By

(Signature)
13/01/2020
(A. K. SINGH)

Chief Scientist & HOS
Flameproof & Equipment Safety

सीएसआईआर-केन्द्रीय खनन एवं ईंधन अनुसंधान संस्थान CSIR-Central Institute of Mining and Fuel Research

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद) / (Council of Scientific & Industrial Research)

बरवा रोड, धनबाद - 826015, झारखण्ड, भारत / Barwa Road, Dhanbad - 826015, Jharkhand, India

ज्वालासह एवं उपकरण सुरक्षा / FLAMEPROOF & EQUIPMENT SAFETY

परीक्षण रिपोर्ट / TEST REPORT



TYPE EXAMINATION CERTIFICATE

FORMAT NO.: (CIMFR: DQM: FLP02: P-01: REV-01)
(Flameproof & Equipment Safety)

Certificate No.: CMF 20 INEx 0073

Dated: 07/01/2020

ULR No.: TC59622000000190F

(Issue No. 0)

- | | | |
|-----------------------------|---|---|
| 1. Applicant | : | M/S. KESHKAMAT & COMPANY
#129, ADARSH NAGAR, PRABHADEVI,
MUMBAI-400 030 |
| 2. Manufacturer | : | Same as above |
| 3. Equipment | : | Flameproof cum Weatherproof Junction Box |
| 4. Designated by | : | Model: KKJB/19F, |
| 5. Type of protection | : | Ex d for Gas Group IIB EPL Gb, |
| 6. Marking | : | Ex d IIC T6 Gb |
| 7. Material of construction | : | Cast aluminium Alloy LM-6 construction |

This certificate is issued as verification that a sample/documentation was assessed and found to comply with the Standard listed below. This certificate relates to only design and construction of the equipment. It does not cover requirement related to manufacturing process and usage.

8. Standard: 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:

- | | |
|---------------------|--|
| IS/IEC 60079-0:2011 | Explosive atmospheres - Part 0: General requirements. |
| IS/IEC 60079-1:2014 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d". |

This type test certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the standards listed above.

9. Degree of ingress protection: IP-66 as per IS IEC 60529:2001

10. Test & Assessment Reports: A sample(s)/documents of the equipment listed have successfully met the examination and test requirements as recorded in IN/CIMFR/TR20/172 dated 16 January, 2020.



सीएसआईआर-केन्द्रीय खनन एवं ईंधन अनुसंधान संस्थान
CSIR-Central Institute of Mining and Fuel Research
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)
(Council of Scientific & Industrial Research)
बरवा रोड, धनबाद-826015, झारखण्ड, भारत
Barwa Road, Dhanbad - 826015, Jharkhand, India



NABL Certificate No.: TC-5962

ज्वालासह एवं उपकरण सुरक्षा / FLAMEPROOF & EQUIPMENT SAFETY
परीक्षण प्रमाण पत्र / TEST CERTIFICATE

TYPE EXAMINATION CERTIFICATE

Certificate No.: CMF 20 INEx 0073

Dated: 07/01/2020

SCHEDULE

11. **Description of equipment:** Flameproof cum Weatherproof Junction Box, in cast aluminium Alloy LM-6 construction designated by Model: KKJB/19F, Rated 240V AC/250V DC, 50Watt (max.).

Enclosure Type	Volume (in cc).		Dimension (mm) LxBxH	Temp. Class
	Gross/	Nett.		
Single Enclosure	2000	200	150x150x100	T6

12. **Drawing and documents:**

Sl. No.	Dwg. No.	Title	Rev.	Sheet No.	Date
1.	KK/JB/2019/20/F	FLAMEPROOF CUM WEATHERPROOF JUNCTION BOX	0	1 of 4 To 4 of 4	19/05/2019

13. **Routine Testing:** A routine overpressure test in accordance with IS IEC 60079-1:2014 clause 16 shall be carried out at a pressure of 9 Kg/cm² for a period of at least 10 seconds and test results must be recorded. The overpressure test shall be considered satisfactory, if no permanent deformation or damage invalidating type of protection is observed, the joints shall in no place have been permanently enlarged and no leakage through the walls of the enclosure is observed.

14. **Specific conditions of use:** Nil.

15. **Details of certificate changes (for issue 1 and above):** Not Applicable.

16. **Additional Information:** Not Applicable

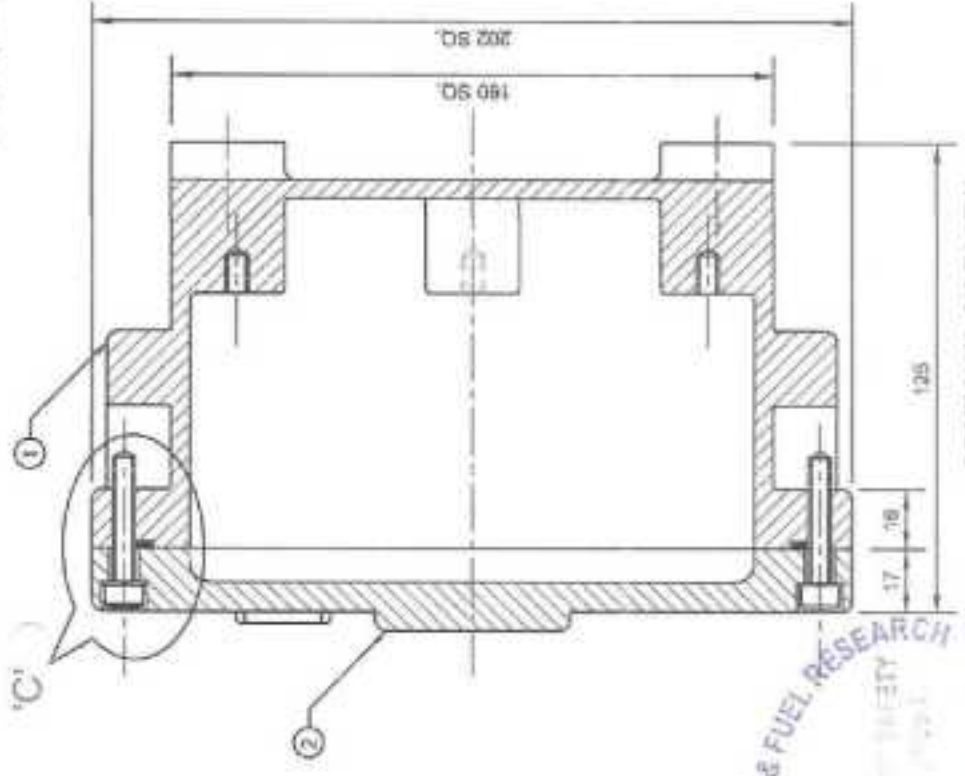
17. **History:** Not Applicable

Approved & issued on behalf of CSIR-CIMFR

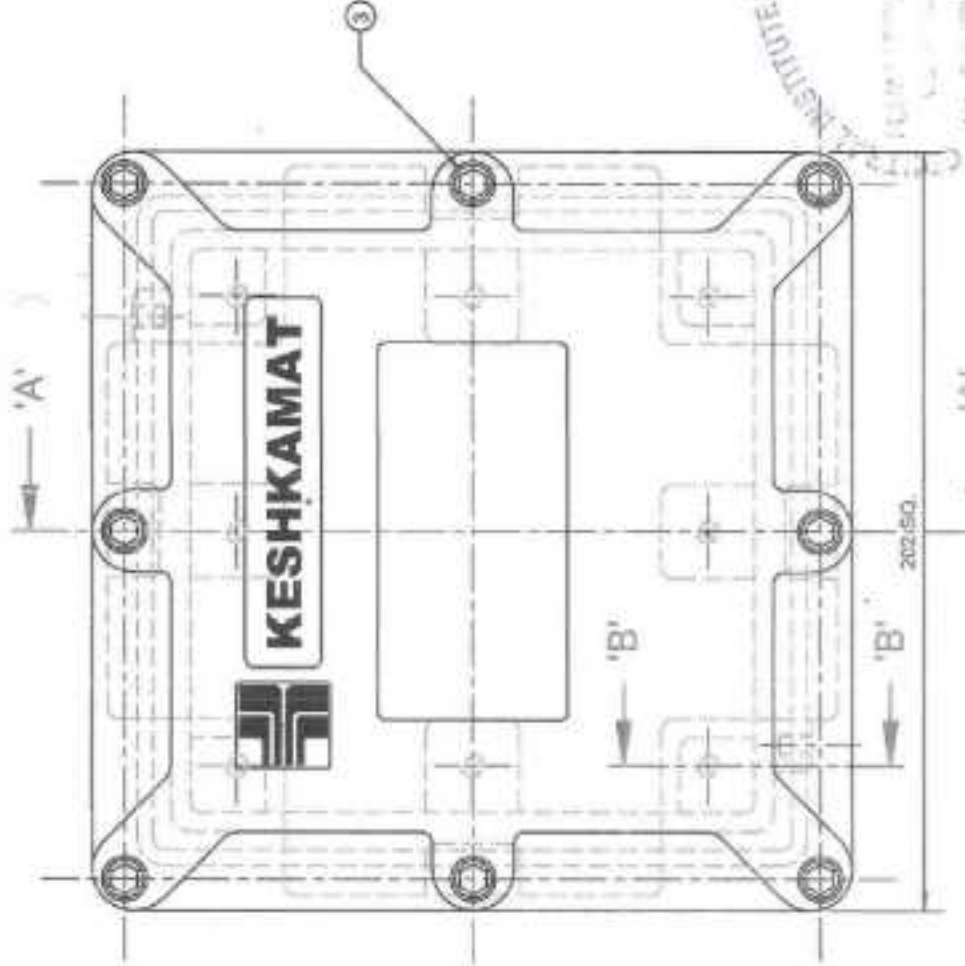

(Dr. A. K. Singh)
Chief Scientist & HOS

This Institute reserves the right to review, amend or withdraw this Type Examination certificate at any time if considered necessary in the interest of safety.

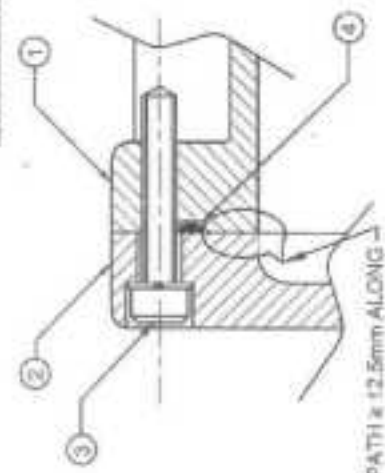
KKJB/19F (A)



SECTIONAL SIDE VIEW
SECTION A - A

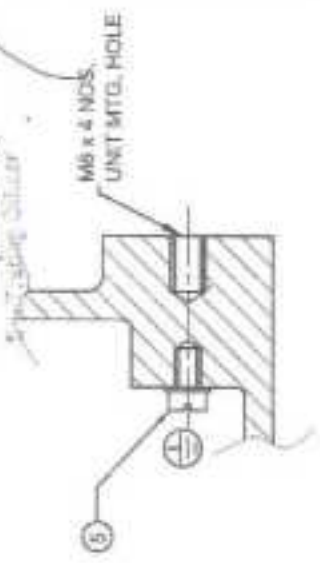


FRONT VIEW



DETAIL 'C'

FLAME PATH & 12.5mm ALONG
ENTIRE FLANGE JOINT.
MAXIMUM GAP ≤ 0.15mm
(REFER NOTE-2)

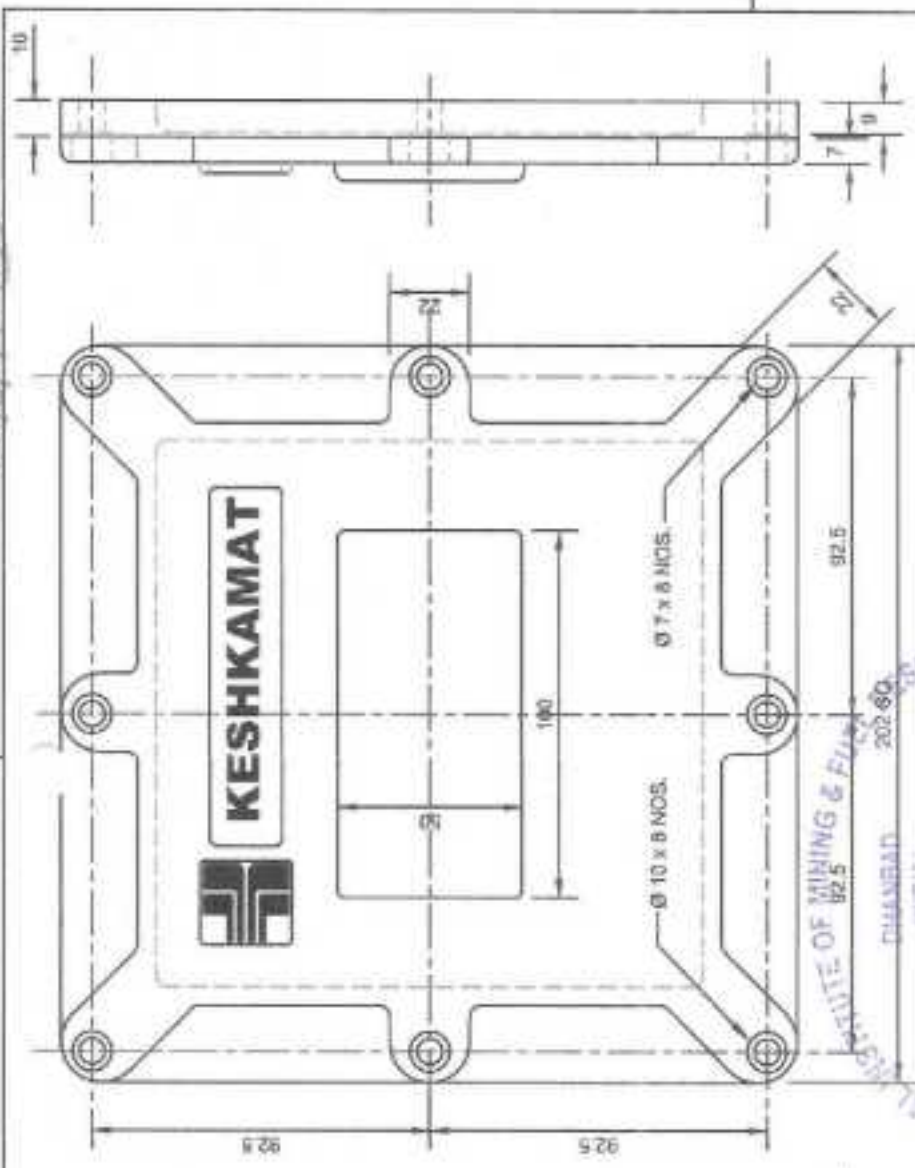


SECTION B - B

INSTITUTE OF MINING & FUEL RESEARCH
DHANBAD
(BIRLA)
NO. 26/172
LATE 16.01.2020
Dr. S. K. Saha
Dr. M. B. Saha

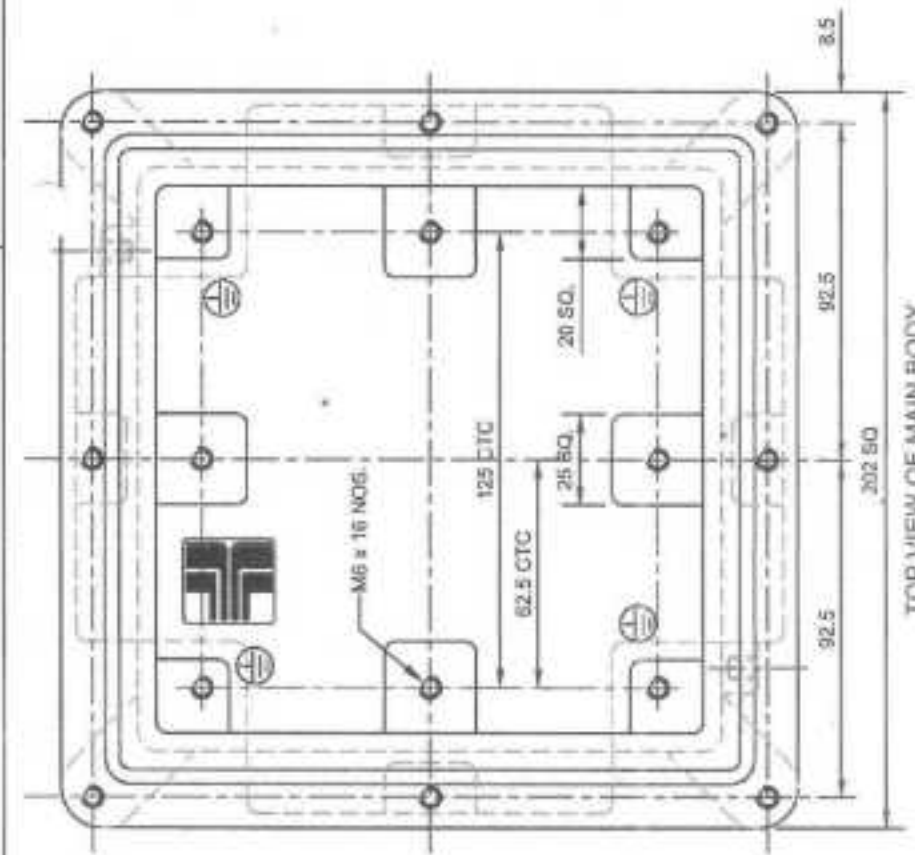
ALL DIMENSIONS ARE IN MM. TOLERANCES IN OVERALL DIMENSIONS ± 0.15mm EXCEPT FOR FLAME PATH & GAP	TITLE: FLAMEPROOF CUM WEATHERPROOF JUNCTION BOX (FOR GAS GROUP - II B ZONE - I)	MODEL: KKJB/19F	IS/IEC: 60079-1 (2014)	IS/IEC: 60079-0 (2011)	IS/IEC: 60529 (2001)	CAT.NO. KKJB/60VF	SHEET 1 OF 4	
REV. NO.	DATE	DESCRIPTION	BY	CHKD.	APPD.	SCALE		
1		ORIGINAL				N.T.S.		
		CHANGE						
		DISPOSED						
		DRAWN						
		DESIGNED						
		CHKD.						
		APPD.						
Keshkammat & Company MUMBAI - 400 033							DRG. NO. KKJB/2019/20VF	SITE B

KKJB/19F (15)



TOP VIEW OF COVER

SIDE VIEW OF COVER



TOP VIEW OF MAIN BODY

SIDE VIEW OF MAIN BODY

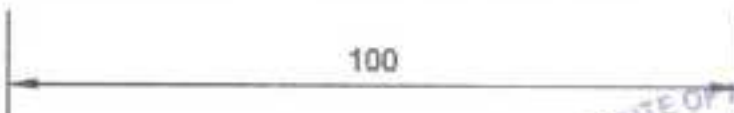
INSTITUTE OF MINING & FUEL TECHNOLOGY
DHANBAD (JHARKHAND)
PLANNED BY: ...
DESIGNED BY: ...
No. 024-1870/172
DATE: 16.01.2020
E. Jaisankar
NOS

ALL DIMENSIONS ARE IN MM. TOLERANCE IN OVERALL DIMENSIONS ±0.10mm. EXCEPT FOR FLANGE PATTERN & GAP	
TITLE: FLAMPROOF CLIM WEAT-ERPROOF JUNCTION BOX (FOR GAS GROUP - I B ZONE - I)	
MODEL: KKJB/19F	AS PER
IS/IEC: 60079-1 (2014)	IS/IEC: 60079-0 (2011)
IS/IEC: 60529 (2001)	IS/IEC: 60529 (2001)
CAT NO. KKJB/60/F	SHEET 2 OF 4
DRS NO. KKJB/2019/20/F	SIZE B

DESIGNED BY: <i>[Signature]</i>	CHECKED BY: <i>[Signature]</i>	SCALE: N.T.S.
DATE: 16.01.2020	NO. OF SHEETS: 4	
Keshkamat & Company MUMBAI - 400 003		

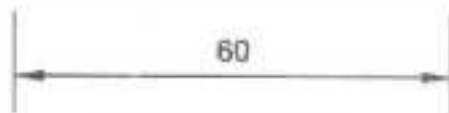
KKJB/19F 17

 KESHKAMAT & COMPANY <small>3128, ADANGH NAGAR, PRAHARDEVI, MUMBAI-400 030, INDIA</small>	
TYPE : FLAMEPROOF CUM WEATHERPROOF JUNCTION BOX EX "II" II B TB (+20" C TO +40" C) IP-65, T6	
MODEL : KKJB/19F	
CAT NO. : KKJB/60/F	SR. NO. :
DRG. NO. : KKJB/2019/20/F	AS PER : IS/IEC: 60079-1 (2014) IS/IEC: 60079-0 (2011) IS/IEC: 60529 (2001)
CIMFR CERT. NO. :	
ISOLATE SUPPLY BEFORE OPENING	



NAME PLATE
(ITEM NO. 6)

CENTRAL INSTITUTE OF MINING & FUEL RESEARCH
 DHANBAD (INDIA)
 FLAME PROOF EQUIPMENT SAFETY CERTIFICATE TEST REPORT
 No. CIMFR/TC/172
 DATED 16.01.2020
[Signature]
 Testing Officer



WARNING PLATE
(ITEM NO. 7)

ALL DIMENSIONS ARE IN mm.
TOLERANCE IN OVERALL DIMENSIONS +/-10mm.
EXCEPT FOR FLAME PATH & GAP

0	19.05.2019	ORIGINAL	
REV. NO.	REV. DATE	CHANGE	APPD.
	DOC. GA	DIM mm	SCALE N.T.S.
DRAWN <i>Beemson</i>	CHECKED <i>[Signature]</i>	ENGINEER <i>[Signature]</i>	

TITLE : FLAMEPROOF CUM WEATHERPROOF JUNCTION BOX (FOR GAS GROUP - II B ZONE - 1)	
MODEL : KKJB/19F	
AS PER : IS/IEC: 60079-1 (2014) IS/IEC: 60079-0 (2011) IS/IEC: 60529 (2001)	
CAT NO. : KKJB/60/F	SHEET 4 OF 4
DRG. NO. : KKJB/2019/20/F	SIZE B