



# 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 )

( अंतर्गत वैज्ञानिक तथा औद्योगिक अनुसंधान विभाग, विज्ञान और प्रौद्योगिकी मंत्रालय, भारत सरकार )

(Under the Department of Scientific & Industrial Research, Ministry of Science & Technology, Govt. of India)

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

(आई एस ओ 9001 प्रमाणित संस्थान / ISO 9001 Certified Institute)



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## SPEED POST/COURIER SERVICE

Test & Assessment Report No.: IN/CIMFR/TR21/R/801

Dated: 21 June, 2021

Equipment ID No.: 913A/20

ULR No.: TC596221000000269F

Code No.: FES/141/20-21

To,  
M/s. Keskamat & Co.,  
9/129, Adarsh Nagar,  
Prabhadevi, Mumbai - 400030.

**Subject:** Type Examination Certificate along with test assessment report of FLP/WP Junction Box, in cast aluminium Alloy LM6 construction designated by Cat. No.: KK/JB 2016/IIC/01, Model No.: JB 2016/IIC as per IS/IEC 60079-1:2014 for use in Gas Group: IIC, EPL Gb/Db atmosphere.

- (Test Report)

Your Ref. Appli. No.: KK/CIMFR/REVALID/2021/13

Dated: 20/10/2020

Dear Sir,

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

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

Charges of Rs. 44,533/- (Rupees Forty Four Thousand Five Hundred Thirty Three Only) including applicable GST involved towards the testing have been adjusted against the advance deposit made by you.

Kindly acknowledge receipt.

Thanking you.

Yours faithfully,

*S. K. Mondal*  
18/06/2021

(S. K. MONDAL)  
HOS  
TESTING CELL

Encl: As above.

1. Test assessment report in *Triplicate*

2. Type Examination Certificate

Copy to: 1. Head, Flameproof & equipment Safety

2. Bill section



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BARWA ROAD, DHANBAD, JHARKHAND-826015, INDIA

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



NABL Certificate No.  
TC-5962

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

Equipment ID No.: 913A/20 ULR No.: TC596221000000269F Code No.: FES/141/20-21

Test & Assessment Report No.: IN/CIMFR/TR21/R/ 801

Dated: 21 June, 2021

Application Ref. No.: KK/CIMFR/REVALID/2021/13

Dated: 20/10/2020

- Applicant : M/s. Keskamat & Co.,  
9/129, Adarsh Nagar,  
Prabhadevi, Mumbai – 400030.
- Manufacturer : Same as Above
- Equipment : Flameproof/Weatherproof Junction Box.
- Designated by : Cat. No.: KK/JB 2016/IIC/01, Model No.: JB 2016/IIC  
Type No: KK/JB 2016-IIC/01
- Type of protection : Ex db for Gas Group: IIC, EPL Gb & Db.
- Electrical ratings : Rated at 110/240V AC/DC. 400W
- Temperature Class : T6 at 40°C amb
- Degree of Ingress Protection : IP-66( with O ring 4mm thickness)
- Material of Construction : Cast Aluminium Alloy LM-6 construction.
- Description of the equipment : Flameproof /Weatherproof Junction Box.

A.

Description/ dimension	Volume (cc).		Min. Wall Thickness (mm)	Dimension (mm)	Nos. & Size of Bolts/Fasteners in (mm)
	Gross	Net			
Single Enclosure	64500	6200	10	530x530x315	16 nos. M8X25mm long

B

Glass details	Max no. of aperture on cover
NIL	NIL

11. Nature of Flameproof Joint: Type of joints and gaps (Spigot joint, Cylindrical, & Threaded Joint)

Sl. No.	Description (Between flamepath and location)	Type of joint	Min. Flamepath (mm)		Gap (mm) and Thread Engaged	
			Req.	Spec.	Req.	Spec.
1.	Enclosure body & cover	Spigot	25	25	0.15	0.10
2.	Body & cable entry	Threaded	8	13	5T(1.5P)	8T(1.5P)

Max. No. & size of cable entries: The maximum eight numbers cable entry in enclosure of following certified and approved FLP/WP double compression type cable gland/blanking plug/breather drainer can be used as following.

Sr. No.	Max. Size of Cable Entries	Nos. of Cable entries provided in test sample			
		Side – A	Side – B	Side – C	Side – D
1	M25X1.5P & M20x1.5P (L = 13mm, T=8T(1.5P))	4	4	NA	NA

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ज्वालासह एवं उपकरण सुरक्षा / FLAMEPROOF EQUIPMENT SAFETY

परीक्षण विभाग / TEST REPORT

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

(Flameproof &amp; Equipment Safety)

Equipment ID No.: 913A/20

ULR No.: TC596221000000269F

Code No.: FES/141/20-21

12. Name plate and warning inscription: The name-cum-warning inscription plate and rating plate made of Brass/SS is permanently fixed on the body of enclosure by hammer driven rivets leaving min. 3mm material thickness below the rivets. The warning inscription shall read as "ISOLATE ELSEWHERE BEFORE OPENING".

13. Drawings: The unit is designed and constructed as flameproof and weatherproof in accordance with the following drawing conforming to the requirements of IS/IEC 60079-0:2017, IS/IEC 60079-1: 2014 and IS/IEC 60529-2001 (Reaffirmed 2014).

Sl. No.	Drg. No.	Title	Rev.	Sheet	Date
1.	KK/JB2016-IIC/01	Explosion proof Flameproof-Weatherproof Junction Box for Gas Group: IIC, Zone I & II	01	1 of 1	13/09/2020

13. Any other relevant information:

- As per Clause 4.2 Note - 2 of IS/IEC 60079-0:2017 the equipment mark IIC is suitable for application requiring IIA/IIB equipment. As per Clause 4.3 Note of IS/IEC 60079-0:2017 the equipment mark IIIC is suitable for application requiring IIIA /IIIB equipment. The material of construction of the enclosure may be MS/SS/Cast iron instead of aluminum alloy LM6
- Equal and equivalent medium class fit NPT threads of medium class fit 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.
- The above equipment may also be used in Db & Dc area as per IS/IEC 60079-31: 2013.
- The above equipment has been earlier tested and certified by the CIMFR vide prototype test report no.: CIMFR/TC/P/626, Dt. 15/09/2016 as per IS/IEC 60079-0: 2007.

14. 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: 2017
- As to flameproof protection IS/IEC 60079-1: 2014
- Ingress protection as per IS/IEC 60529: 2001(Reaffirmed 2014)
- Dust ignition protection by enclosure 't' IS/IEC60079-31:2013

(ii) Composition of the cast aluminum alloy declared by the manufacturer: Composition of cast aluminum alloy purported to be forming the material of construction of the enclosure has been declared by the manufacturer in the drawing having 7.5% in total of magnesium titanium and zirconium.

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

15. Documents/Samples Submitted: i) Application form ii) Drawings iii) Samples

16. Condition of sample received: Good

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.

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-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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परीक्षण रिपोर्ट / TEST REPORT

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

(Flameproof &amp; Equipment Safety)

Equipment ID No.: 913A/20

ULR No.: TC596221000000269F

Code No.: FES/141/20-21

REPORT OF TEST

Date of Test: 12.05.2021

Test Equipment Used:

Computer, Kistler Piezo Electric Transducer and Charge Amplifier for conducting Explosion Pressure Tests, Overpressure Test Setup.

Result #A: Tests as per IS/IEC 60079-0: 2017:

Clause	Tests	Remarks	Results (Complies, P- Pass, NA- Not Applicable, F-Fail)
1	Scope		Complies
2	Normative references		Complies
3	Terms and definitions		Complies
4	Equipment grouping	Gas Group : IIC, EPL Gb/Db	Complies
5	Temperature		
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	Metallic enclosures and non-metallic parts of enclosures		NA
7.2	Thermal Endurance		NA
8	Metallic Enclosure and metallic parts of Enclosures	Cast aluminium alloy LM 6	Complies
9	Fasteners		Complies
10	Interlocking devices		NA
11	Bushings		NA
12	Materials used for cementing		NA
13	Ex components		Complies
14	Connection facilities		Complies
15	Connection facilities for earthing and bonding conductors		Complies
16	Entries into enclosures		NA
17	Supplementary requirements for electrical machines		NA
18	Supplementary requirements for switchgear		NA
19	Supplementary requirements for fuses		NA
20	Supplementary requirements for external plugs, socket outlets and connectors for wiring connection		NA
21	Supplementary requirements for luminaries		NA
22	Supplementary requirements for cap lights and hand lights		NA
23	Equipment incorporating cells and batteries		Complies
24	Documentation		Complies
25	Compliance of prototype or sample with documents		Complies
26	Type tests		
26.3	Tests in explosive test mixtures		
26.3	Tests for Flameproof (Ex 'd') protection	Verification for Compliance to Ex 'd' requirements as per IS/IEC 60079-1: 2014	Complies Refer Result #B
26.4	Test of enclosures		

  
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 ज्वालासह एवं उपकरण सुरक्षा / FLAMEPROOF & EQUIPMENT SAFETY  
 परीक्षण रिपोर्ट / TESTING REPORT



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FORMAT NO.: (CIMFR: DQM: FLP02: F-01:REV-01)  
 (Flameproof & Equipment Safety)  
 Equipment ID No.: 913A/20 ULR No.: TC596221000000269F Code No.: FES/141/20-21

26.4.2	Resistance to Impact	(not a handheld equipment or portable device)	Complies
26.4.3/26.4.4	Drop test	NA	
26.4.5	Degree of protection (IP) by Enclosures	IP-66 ( O ring 4mm gasket)	Complies
26.4.5	Test of IP of equipment		
26.5	Thermal tests	T6 @at 40°C amb.	Complies
26.5.1	Temperature measurement		NA
26.5.2	Thermal shock test		NA
26.6	Torque test for bushings		
26.7	Non- metallic enclosures or non-metallic parts of enclosures		NA
26.8	Thermal endurance to heat		NA
26.9	Thermal endurance to cold		NA
26.10	Resistance to UV light		NA
26.11	Resistance to chemical agents for Group I Electrical Equipment		NA
26.12	Earth continuity test in non-metallic enclosure		NA
26.13	Surface resistance test of parts of enclosures of Non metallic materials		NA
26.14	Measurement of capacitance		NA
26.15	Verification of ratings of ventilating fans		NA
26.16	Alternative qualification of elastomeric sealing O-rings		
27	Routine tests	Manufacturer's responsibility: Compliance to prototype of the product and physical measurement of gap and flamepath and overpressure at the pressure 7.5kg/cm <sup>2</sup> for every sample.	
28	Manufacturer's responsibility	Conformity of the equipment to the applicable standards (Ex db IIC T6 Gb) (Ex tb IIIC T 85°C Db)	Complies
29	Marking	Instruction related to use, installation, maintenance, adjustment to be provided by the manufacturer along with the equipment.	
30	Instructions		

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

Type Tests		Remarks	Results (Complies, P- Pass, NA-Not Applicable, F-Fail) References
Clause No.	Description and relevant tests		
1	Scope		Complies
2	Normative references		Complies
3	Terms and definitions		Complies
4	Level of protection (Equipment Protection Level, EPL)	Gas Group: IIC, EPL Gb/Db	Complies
5	Flameproof joints	Spigot & Threaded joint	Complies
6	Sealed joints		NA
6.1	Cemented joints		Complies
6.1.2	Mechanical strength:		NA
7	Operating rods		

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परीक्षण रिपोर्ट / TEST REPORT

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(Flameproof & Equipment Safety)

Equipment ID No.: 913A/20

ULR No.: TC596221000000269F

Code No.: FES/141/20-21

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		NA
12	Materials	Cast aluminium alloy LM- 6	Complies
13	Entries for flameproof enclosures		Complies
14	Verification and tests		Complies
15	Type Tests		Complies
15.1	General		
15.2	Tests of ability of the enclosure to withstand pressure		P/Refer Result#B1
15.2.2	Determination of Explosion Pressure (Reference Pressure)		P/Refer Result#B2
15.2.3	Overpressure Test		
15.3	Test for non-transmission of an internal ignition		Complies
15.3.1	General		NA
15.3.2	Electrical equipment of Groups I, IIA & IIB		P/Refer Result#B3
15.3.3	Electrical equipment of Group IIC		NA
15.4	Tests of flameproof enclosures with breathing and draining devices		NA
15.4.1	General		NA
16	Routine tests	To be conducted by the manufacturer at pressure 7.5kg/cm <sup>2</sup> on each sample.	
17	Switchgear for Group I		NA
18	Lamp holders and lamp caps		NA
19	Non-metallic enclosures and non-metallic parts of enclosures		NA
19.1	General		NA
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		(Ex db IIC T6 Gb) (Ex tb IIIC T 85° C Db)
20	Marking		"DO NOT OPEN WHEN ENERGISED"
20.2	Caution and warning markings		
21	Instruction	The manufacturer shall supply instruction regarding flamepath etc. As per required by IS/IEC 60079-0:2017	

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

Gas mixture: Test with 31% Hydrogen in air and 14% Acetylene in air. No. of tests: 5 nos. test with Single enclosure for each gas.  
Test Condition: Enclosure fitted with component and clause 15.2.2.2

Test Condition: Enclosure fitted with component and clause 15.2.2.2						
Explosion/Reference Pressure Test						
Ignition – spark position	Gauge - sensor Position	Test with 31% Hydrogen in air		Test with 14% Acetylene in air		R e m a r k
		Test Ref. No.	Max. Pressure in Bar	Test Ref. No.	Max. Pressure in Bar	
Single Enclosure						
Body	Body	PPM/913A2001	3.4	PPM/913A2006	5.0	Satisfactory
Body	Body	PPM/913A2002	3.7	PPM/913A2007	4.6	Satisfactory
Body	Body	PPM/913A2003	3.4	PPM/913A2008	4.5	Satisfactory
Body	Body	PPM/913A2004	4.1	PPM/913A2009	4.5	Satisfactory
Body	Body	PPM/913A2005	4.3	PPM/913A2010	4.6	Satisfactory

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

  
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(Flameproof &amp; Equipment Safety)

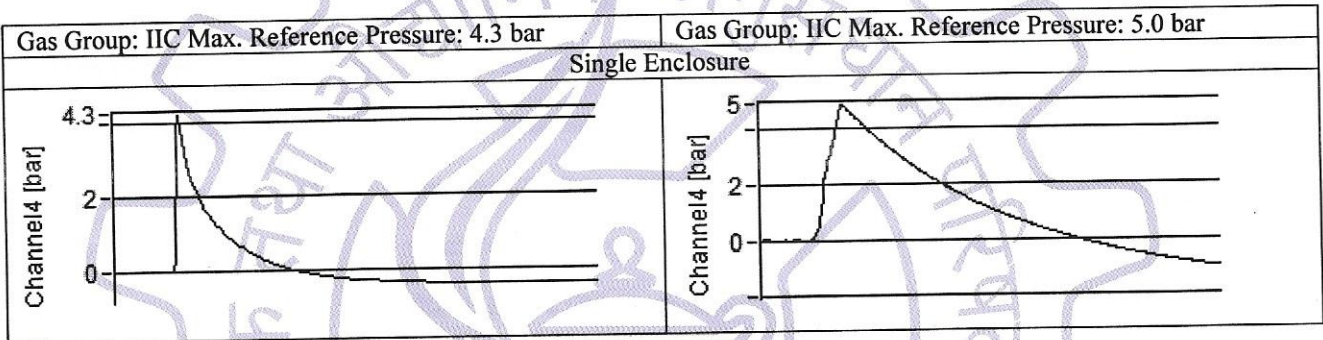
Equipment ID No.: 913A/20

ULR No.: TC596221000000269F

Code No.: FES/141/20-21

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

Enclosure	Test reference no.	Over pressure (kg/cm <sup>2</sup> ) maintained for 10Sec min.	Remark
Single Enclosure	OPM/913A2011	7.5kg/cm <sup>2</sup>	No damage or deformation



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

Gas Mixture: Test with 28% Hydrogen and 7.5% Acetylene in air for Gas Gr. IIC

No. of Tests: 5 nos. tests with single enclosure for each gas

Test Condition: as per clause 15.3.3 Table 9 (No pre compression required)

Enclosure	Test Ref. Nos.	Gas Group	Gas Mixture % in Air	No. of Test	Result
Single Enclosure	EIT/913A2012 to EIT/913A2016	IIC	28 % Hydrogen	Five	Pass
	EIT/913A2017 to EIT/913A2021		8 % Acetylene		

**CONCLUSION:** The Flameproof-Weatherproof Junction Box, in cast aluminium alloy LM-6 construction designated by Cat. No.: KK/JB 2016/IIC/01, Model No.: JB 2016/IIC & Type No: KK/JB 2016-IIC/01, is compliance for flameproof requirements as per IS/IEC 60079-1:2014 and general requirements as per IS/IEC 60079-0:2017. It is deemed to be suitable for use in Gas Group: IIC, EPL Gb/Db atmosphere.

Reported By

Checked &amp; Approved By

*R. K. Mishra*  
17.6.21  
(R. K. Mishra)

Sr. Technical Officer (1)  
Dated: 17<sup>th</sup> June, 2021  
Flameproof & Equipment Safety  
CSIR - Central Institute of Mining & Fuel Research  
Barwa Road, DHANBAD - 826 015,  
(JHARKHAND), INDIA

*(A. K. SINGH)*  
(A. K. SINGH)  
Chief Scientist & HORG  
Flameproof & Equipment Safety



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**परीक्षण प्रमाण पत्र / TEST CERTIFICATE**



NABL Certificate No.  
 TC-5962

**TYPE EXAMINATION CERTIFICATE**

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

Certificate No.: CMF 21 INEx 0232  
 ULR No.: TC596221000000269F

Dated: 17/06/2021  
 (Issue No. 0)

1. Applicant : M/s. Keskamat & Co.,  
 9/129, Adarsh Nagar,  
 Prabhadevi, Mumbai – 400030.
2. Manufacturer : Same as above
3. Equipment : FLP/WP Junction Box.
4. Designated by : Cat. No.: KK/JB 2016/IIC/01, Model No.: JB 2016/IIC Type No: KK/JB 2016-IIC/01
5. Type of protection : Ex db for Gas Group: IIC, EPL Gb & Db.
6. Marking : (Ex db IIC T6 Gb) (Ex tb IIC T85°C Db/)

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

7. 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 60079-0:2017 Explosive atmospheres – Part 0: General requirements.  
 IS/IEC 60079-1:2014 Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures “d”.  
 IS/IEC 60079-31:2013 Explosive atmospheres – Part 31: Equipment Dust ignition protection by enclosure “t”.

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

8. Degree of ingress protection: IP-66 (O ring 4mm thick gasket ) as per IS IEC 60529:2001(Reaffirmed 2014)

9. Test & Assessment Reports: A sample(s)/documents of the equipment listed have successfully meet the examination and test requirements as recorded in IN/CIMFR/TR21/R 801 Dated: 21 June, 2021.

*[Signature]*  
 17.6.21



सीएसआईआर - केंद्रीय खनन एवं ईंधन अनुसंधान संस्थान  
**CSIR - CENTRAL INSTITUTE OF MINING AND FUEL RESEARCH**  
 (वैज्ञानिक, औद्योगिक एवं संधान शोध)  
 (COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH)  
 बरवा रोड, धनबाद, झारखंड - 826015, भारत  
 BARWA ROAD, DHANBAD, JHARKHAND - 826015, INDIA  
 ESTD-1956  
**ज्वालासह एवं उपकरण सुरक्षा / FLAMEPROOF & EQUIPMENT SAFETY**  
**परीक्षण प्रमाण पत्र / TEST CERTIFICATE**



NABL Certificate No.  
 TC-5962

**TYPE EXAMINATION CERTIFICATE**

Certificate No.: CMF 21 INEx 0232  
 ULR No.: TC596221000000269F

Dated: 17/06/2021  
 (Issue No. 0)

**SCHEDULE**

10. Description of equipment: FLP/WP Junction Box, Cat. No.: KK/JB 2016/IIC/01, Model No.: JB 2016/IIC, Rated at 110/240V AC/DC 500W, material of construction Cast Aluminium Alloy LM-6 with 10mm minimum wall thickness.

Enclosure Type	Volume (cc).		Max. no. of aperture on cover/ Dimension (mm)	Rating	T- Class at 40°C
	Gross	Nett			
Single Enclosure	64500	6200	NIL 530x530x315mm	110/240V AC/DC 500W	T6

**13. Drawings:**

Sl. No.	Drg. No.	Title	Rev.	Sheet	Date
1.	KK/JB2016-IIC/01	Explosion proof Flameproof-Weatherproof Junction Box for Gas Group: IIC Zone I & II	01	1 of 1	13/09/2020

12. Routine Testing: A routine overpressure test in accordance with IS IEC 60079-1:2014 clause 16 shall be carried out at a pressure of 7.5Kg/cm<sup>2</sup> 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.

13. Specific conditions of use: Not Applicable

14. Details of certificate changes (for issue 1 and above): Not applicable.

15. Additional Information: Not Applicable

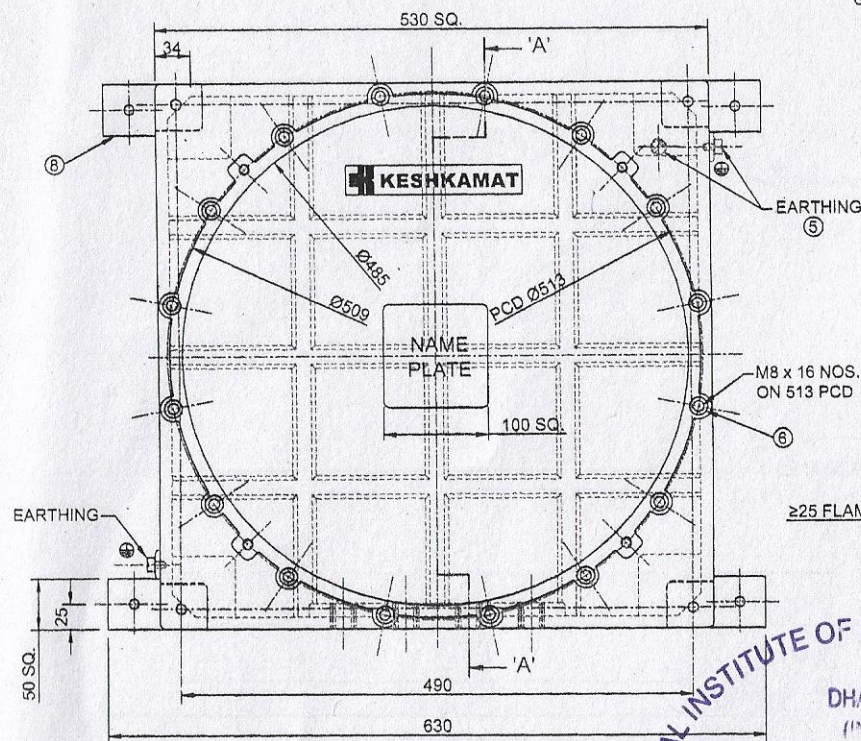
16. History: The above equipment has been earlier tested and certified by /CIMFR vide test & assessment report no.: CIMFR/TC/P/626, Dt. 15/09/2016 as per IS/IEC: 60079-0:2007. This certificate (CMF 21 INEx 0232, Dated: 17/06/2021, Issue No. 0) supersedes the above mentioned test reports.

Approved for issued on behalf of CIMFR  
 Position

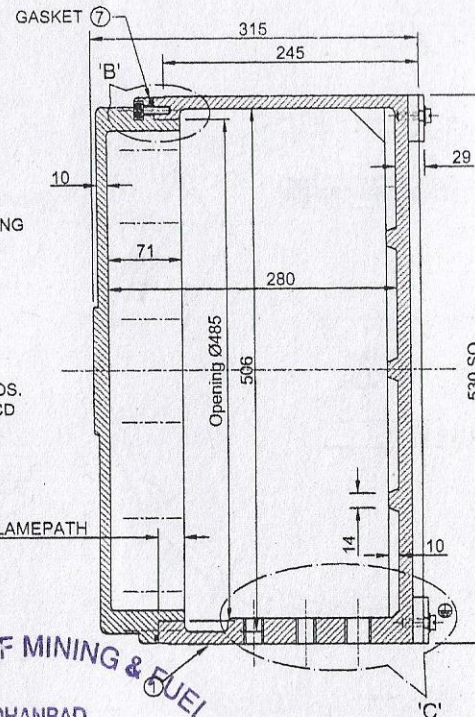
Dr. A. K. Singh  
 Chief Scientist & HORG

*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.*

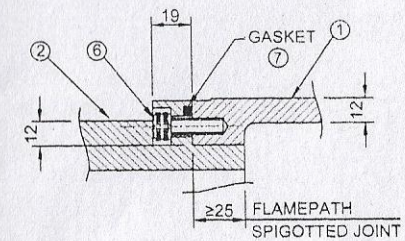
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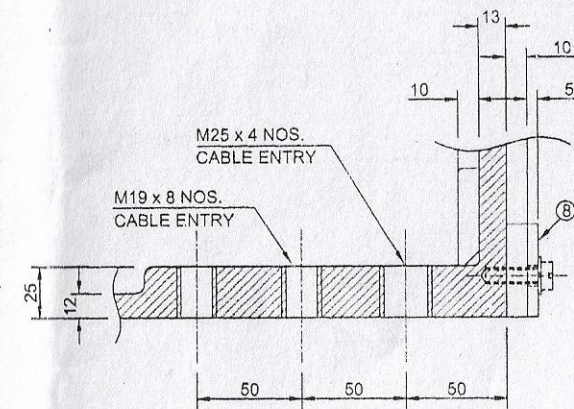
TOP VIEW



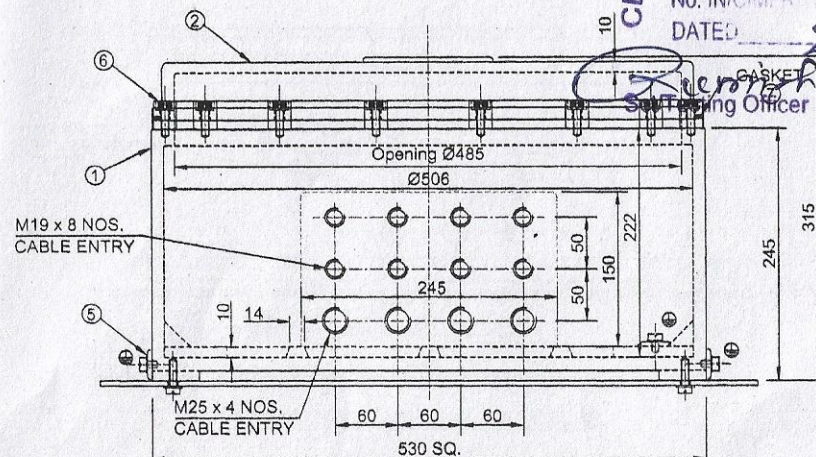
SIDE VIEW  
SECTION A-A



DETAIL 'B'



DETAIL 'C'  
(CABLE GLAND ENTR'ES)



FRONT VIEW

CENTRAL INSTITUTE OF MINING & FUEL RESEARCH  
DHANBAD (INDIA)  
FLAME PROOF EQUIPMENT SAFETY  
CERTIFIED TEST REPORT  
No. IN/CMER/211R/84  
DATED 21/6/21  
HOS

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

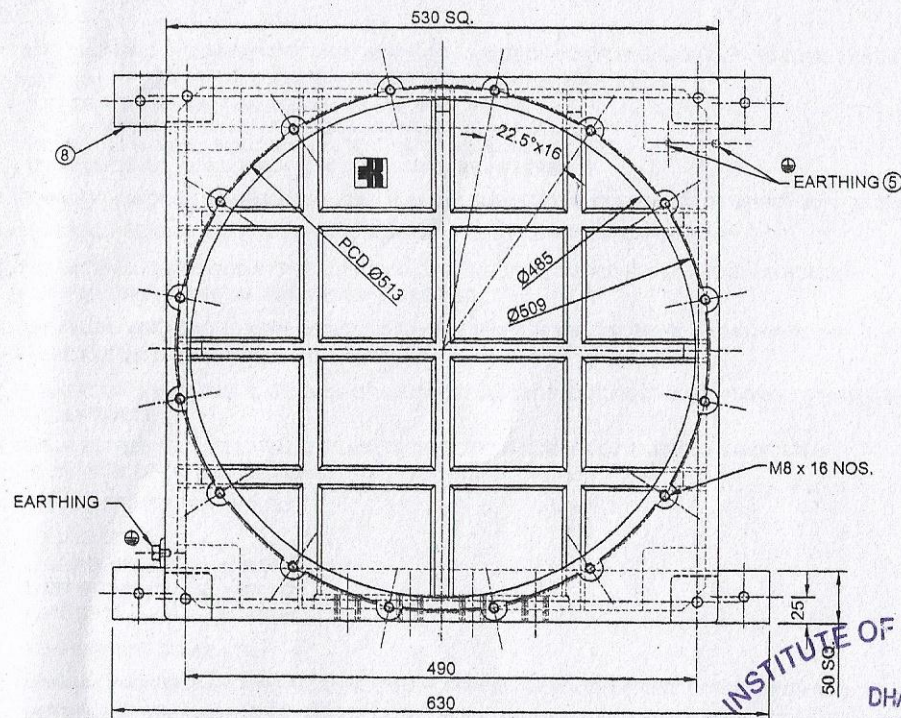
TITLE : EXPLOSIONPROOF FLAMEPROOF /  
WEATHERPROOF JUNCTION BOX FOR  
GAS GROUP - IIC, ZONE - I AND ZONE - II

MODEL : JB 2016 / IIC  
AS PER : IS/IEC: 60079-1 (2014)  
IS/IEC: 60079-0 (2011)  
IS/IEC: 60529-0 (2001)

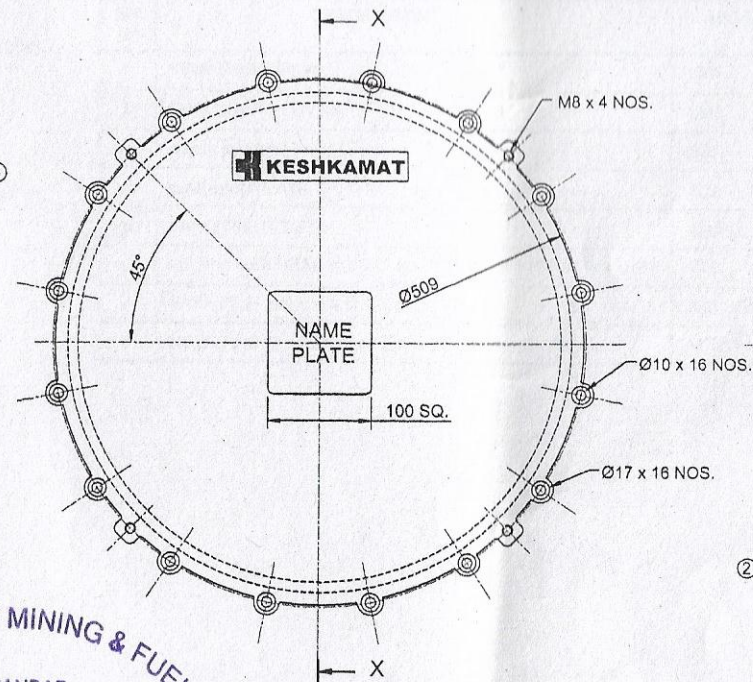
REV. NO.	REV. DATE	CHANGE	APPD.
1	13-09-2020	ORIGINAL DRG. FOR REVALIDATION	bc
2	17-06-2016	ORIGINAL	bc
DOC.	DIM	SCALE	
GA	mm	N.T.S.	
DRAWN	CHECKED	ENGINEER	
beemson	bc	Keshkamat	

**Keshkamat & Company**  
MUMBAI - 400 030

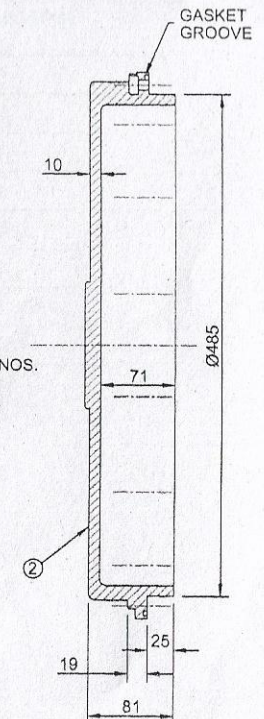
CAT NO. KK/JB 2016/IIC/01  
DRG. NO. KK/JB2016-IIC/01  
SHEET 1 OF 4  
SIZE B



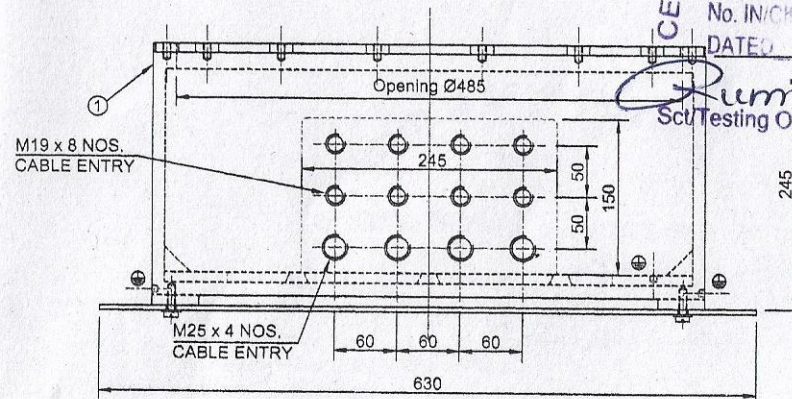
TOP VIEW OF MAIN ENCLOSURE



TOP VIEW OF ENCLOSURE COVER



SIDE VIEW OF ENCLOSURE COVER  
SECTION X - X



FRONT VIEW OF MAIN ENCLOSURE

CENTRAL INSTITUTE OF MINING & FUEL RESEARCH  
DHANBAD (INDIA)

FLAME PROOF EQUIPMENT SAFETY  
CERTIFIED TEST REPORT  
No. IN/CMR/TR211R/1901  
DATED 21/6/2016

*Rumishra*  
Sct Testing Officer

*[Signature]*  
HOS

REV. NO.	REV. DATE	CHANGE	APPD.
1	13.09.2020	ORIGINAL DRG. FOR REVALIDATION	
0	17.06.2016	ORIGINAL	
DOC.	DIM	SCALE	
GA	mm	N.T.S.	
DRAWN <i>Samson</i>	CHECKED <i>[Signature]</i>	ENGINEER <i>[Signature]</i>	

**Keshkamat & Company**  
MUMBAI - 400 030

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

TITLE : EXPLOSIONPROOF FLAMEPROOF /  
WEATHERPROOF JUNCTION BOX FOR  
GAS GROUP - IIC, ZONE - I AND ZONE - II

MODEL : JB 2016 / IIC

AS PER :  
IS/IEC: 60079-1 (2014)  
IS/IEC: 60079-0 (2011)  
IS/IEC: 60529-0 (2001)

CAT NO. KK/JB 2016/IIC/01

SHEET  
2 OF 4

DRG. NO. KK/JB2016-IIC/01

SIZE  
B

**NOTES :-**

1. EXPLOSIONPROOF FLAMEPROOF, WEATHERPROOF JUNCTION BOX FOR GAS GROUP - IIC ZONE 1 AND ZONE 2.
2. MATERIAL OF CONSTRUCTION OF ENCLOSURE IS LM6. THE COMPOSITION IS  
COPPER = 0.1 % MAX., MAGNESIUM = 0.1 %, IRON = 0.6 %, ZINC = 0.1 % MAX., LEAD = 0.1 % MAX., MANGANESE = 0.5 % MAX., NICKEL = 0.1 % MAX., SILICON = 10 % TO 13 %, TITANIUM = 0.2 % MAX., TIN = 0.05 % MAX., ALUMINIUM = 85 % TO 88 % MAX. BY DIFFERENCE.
3. FLAMEPATH ALONG THE SPIGOTTED JOINT IS  $\geq 25$ mm. DIAMETRICAL CLEARANCE OF SPIGOT JOINT IS 0.10mm.
4. MATERIAL THICKNESS ALONG THE JUNCTION BOX WALLS AND AT BOTTOM IS  $\geq 10$ mm
5. THE MATERIAL THICKNESS AT THE BOTTOM AND AROUND THE TAPPED HOLES AND BLIND HOLES IS  $\geq 5$ mm OR 1/3RD OF THE DIA. WHICHEVER IS GREATER.
6. THE ALLEN / HEX HEAD SCREWS / BOLTS USED HAVE MINIMUM YIELD STRENGTH  $\geq 240$  N/mm<sup>2</sup> AND THESE ARE USED ONLY FOR LOCKING PURPOSE.
7. NAME PLATE & WARNING PLATE MADE OF S.S. MATERIAL ARE PROVIDED AND ARE FIXED WITH HAMMER DRIVEN RIVETS.
8. CABLE ENTRIES FROM THE WALL SIDE AS INDICATED WITH NUMBER OF ENTRIES AS INDICATED  
19mm 8 NOS. OF ENTRIES AND 25mm 4 NO. OF ENTRIES.
9. INGRESS PROTECTION = IP : 66.
10. VOLUME DETAILS :  
1) GROSS VOLUME = 64500 CC.  
2) EFFECTIVE VOLUME = 6200 CC.  
3) WEIGHT = 45 Kgs.
11. TEMPERATURE CLASS = T6
12. MINIMUM THICKNESS AROUND ALL THREADED HOLES / BLIND HOLES FOR BOLT / SCREW IS  $\geq 5$ mm.
13. EARTHING OF THE ENCLOSURE IS DONE AT INSIDE AND OUTSIDE INDICATED WITH M6 x 10mm LONG CHEESE HEADED SCREWS WHICH HAS THREADED AND FIRM AND NON CORROSIVE BONDING.  
EARTHING CONDUCTOR USED SHOULD BE  $\geq 4$ mm<sup>2</sup> EXTERNALLY.
14. NEOPRENE GASKET OF DIA 5mm.

**BILL OF MATERIAL**

SR. NO.	DESCRIPTION	MATERIAL	QTY.	REMARKS
1	MAIN ENCLOSURE	LM6	1	
2	ENCLOSURE COVER	LM6	1	
3	NAME PLATE	S.S.	1	
4	WARNING PLATE	S.S.	1	
5	EARTHING SCREW	BRASS	3	M6 x 10
6	ALLEN / HEX HEAD SCREW / BOLTS WITH SPRING WASHER	S.S.	16	M8 x 25
7	GASKET Ø4mm ENDLESS	NEOPRENE	1	
8	MOUNTING PLATES (SIZE 630 x 50 x 5)	M.S.	2	

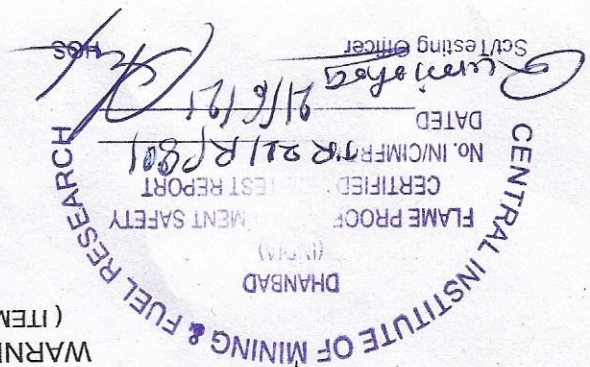
CENTRAL INSTITUTE OF MINING & FUEL RESEARCH  
DHANBAD  
(INDIA)

FLAME PROOF JUNCTION BOX SAFETY  
CERTIFIED TEST REPORT  
No. IN/CMR/TEST/21/6/2016  
DATED 21/6/2016  
Sct/Testing Officer

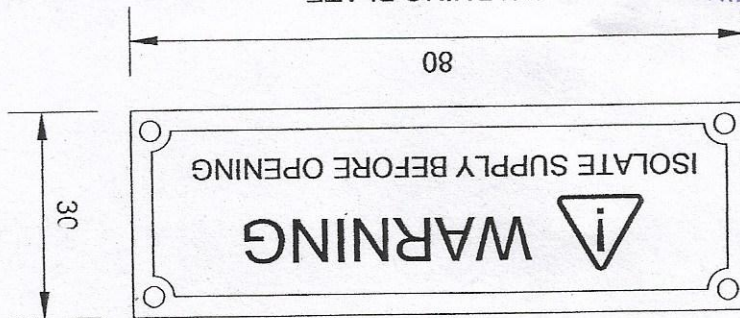
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					TITLE : EXPLOSIONPROOF FLAMEPROOF / WEATHERPROOF JUNCTION BOX FOR GAS GROUP - IIC, ZONE - I AND ZONE - II	
1	13.09.2020	ORIGINAL DRG. FOR REVALIDATION			MODEL : JB 2016 / IIC	
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REV. NO.	REV. DATE	CHANGE			APPD.	
		DOC. GA	DIM mm	SCALE N.T.S.		
DRAWN <i>Samsan</i>		CHECKED <i>Le</i>	ENGINEER <i>Keshkamat</i>			
		<b>Keshkamat &amp; Company</b>				CAT NO. KK/JB 2016/IIC/01
		MUMBAI - 400 030				SHEET 3 OF 4
						DRG. NO. KK/JB2016-IIC/01
						SIZE B

<b>Keshkamat &amp; Company</b> MUMBAI - 400 030		<b>DRG. NO.</b> KK/JB2016-IIC/01		<b>SIZE</b> A
<b>CAT NO.</b> KK/JB 2016/IIC/01		<b>SHEET</b> 4 OF 4		
<b>AS PER:</b> IS/IEC: 60079-1 (2014) IS/IEC: 60079-0 (2011) IS/IEC: 60529-0 (2001)				
<b>MODEL:</b> JB 2016 / IIC				
<b>TITLE:</b> EXPLOSIONPROOF / FLAMEPROOF / WEATHERPROOF JUNCTION BOX FOR GAS GROUP - IIC, ZONE - I AND ZONE - II				
<b>ALL DIMENSIONS ARE IN mm.</b> TOLERANCE IN OVERALL DIMENSIONS +/-10mm. EXCEPT FOR FLAME PATH & GAP				



WARNING PLATE  
(ITEM No. 4)



NAME PLATE  
(ITEM No. 3)

