



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 KLCS 23.0028X	Page 1 of 3	Certificate history:
Status:	Current	Issue No: 0	
Date of Issue:	2024-01-11		
Applicant:	Rotex Manufacturers and Engineers Private Limited R-852/853, MIDC, TTC Industrial Area, Rabale, Maharashtra. Navi Mumbai 400 701 India		
Equipment:	EHF Range of Compact Electro-Hydraulic Actuators, EHF-B Series / EHF-I Series		
Optional accessory:			
Type of Protection:	Flameproof enclosure 'd', Dust- protection by enclosure 't' & non-electrical 'h'		
Marking:	Ex db h IIB T6 Gb (Tamb = -20°C ≤ Ta ≤ +65°C) Ex h tb IIIC T85°C Db (Tamb = -20°C ≤ Ta ≤ +65°C) IP 66/IP67		

Approved for issue on behalf of the IECEx
Certification Body:

Ravi Paranjpe

Position:

Director (Operations)

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

Karandikar Laboratories Certification Services
Gat No. 142, Boisar Chillar Rd.,
Opp. Union Park, At Betegaon,
Boisar (E), Tal- Palghar
Maharashtra 401501
India





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Manufacturer: **Rotex Manufacturers and Engineers Private Limited**
R-852/853, MIDC, TTC Industrial Area,
Rabale, Maharashtra.
Navi Mumbai 400 701
India

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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

[ISO 80079-36:2016](#) Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements
Edition:1.0

[ISO 80079-37:2016](#) Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"
Edition:1.0

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:

[IN/KLCS/ExTR23.0041/00](#)

Quality Assessment Report:

[IN/KLCS/QAR23.0008/00](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

EHF Range of Compact Electro-Hydraulic Actuators comprises of housing for compact EHF, Main Manifold assembly and hand pump manifold assembly.

The housing for compact EHF has three inter connected parts with individual covers

- Terminal compartment with integral terminal block for mounting terminals,
- Controller compartment with LCD cover, where the cover has a glass window cover and controller assembly and compartment house the electronics.
- Limit switch compartment with LED cover for LED Indication and houses an integral DC motor, Solenoid Valves, Pressure Transmitter/ Transducer, Position Transmitter and Limit Switch assembly.

The main manifold assembly is attached to the EHF compact housing and the hand pump manifold assembly is attached to the main manifold assembly. Main manifold assembly and hand pump manifold assembly are protected by type of protection Ex h.

EHF Compact housing and covers are made from aluminium alloy grade LM6 material. Main manifold assembly and hand pump manifold assembly are made from aluminium alloy 6082 T6.

Alternate material for EHF compact housing with covers, main manifold assembly and hand pump manifold assembly may be stainless steel grade CF8 / CF8M or carbon steel WCB 216 or SG Iron 500/7.

Terminal box cover is fixed on EHF compact housing with socket head cap screws forming a spigot joint. O-ring made of Nitrile rubber (NBR) is provided on terminal box cover and secured in O-ring groove. Glass window is cemented on controller assembly(LCD)cover. The controller assembly (LCD)cover is fixed on EHF housing with socket head cap screws forming a spigot joint. O-ring made of Nitrile rubber (NBR) is provided on controller assembly cover and secured in O-ring groove.

Plastic knobs (Qty.- 02 numbers) are provided on controller assembly(LCD) cover and are magnetically latched to the sensor mounted inside the enclosure for local controls.

Top cover with LED indication is fixed on EHF compact housing with hex head screws forming a spigot joint. O-ring made of Nitrile (NBR) rubber is provided on Top cover and secured in O-ring groove.

Polycarbonate dome (LED indication) is provided on top cover to indicate position of the valve.

Main manifold assembly is fixed on EHF compact housing with hex head screws forming a spigot joint. O-ring made of Nitrile (NBR) rubber is provided on main manifold housing and secured in O-ring groove.

Hand pump manifold assembly is attached to the main manifold assembly with socket head cap screws. O-ring made of viton rubber is provided between hand pump manifold and main manifold and secured in O-ring groove.

The terminal box compartment of the EHF compact housing is provided with single cable entry of size M32X1.5P/M25X1.5P/ 1 ¼" NPT. Additionally, six more cable entries of size M20x1.5P/M25x1.5P/3/4" NPT/ 1 "NPT can be provided to terminal box compartment.

For Model Designation please refer to ANNEX TO IECEX KLCS 23.0028X

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The manufacturer has maintained larger flamepath length and more number of threads engaged than those specified in the standard IEC 60079-1. The user must refer to manufacturer before carrying out any repairs or refurbishment to the equipment.
2. The enclosure may present a potential electrostatics charging hazard. See the manufacturer's instruction for further information. The manual contains instruction as "The polycarbonate indicator must only be cleaned with damp cloth in order to avoid ignition hazard caused by static electricity" and the equipment must not be located in a direct or dust laden air-stream.
3. Dust layers shall be prevented from building up on the outside surface of the enclosure, and the enclosure shall be routinely cleaned.
4. The fastening screws shall be stainless steel socket head cap screws / Hexagonal head screws of property class A2-70 and yield stress 450 MPa. User must refer 'Installation operation and maintenance manual' for details of fasteners.

Annex:

[Annex to IECEX KLCS 23.0028X.pdf](#)



ANNEX to IECEx KLCS 23.0028X, Issue No. 00

Date: 11/01/2024

Model Designation:

Model	Description
EHF B	Basic Version
EHF I	Intelligent Version

Basic version will not have Diagnostic capabilities whereas the Intelligent will have diagnostic capabilities. Intelligent version can monitor the health of the valve by performing different tests like PST, FST and communicate to the users SCADA or PLC. Also apart from that, the Intelligent version can have different communication protocols like Modbus, HART etc.

ORDERING CODE :EHF-I-0230C1-OO-E-S-CC-NB-WC-HF-Q-AA-RT-TRO-1A2-NC-NN-C5-SUXXX

01-PRODUCT SERIES CODE DESCRIPTION EHF-B BASIC VERSION EHF-I INTELLIGENT VERSION		06-ROTATION DIRECTION CODE DESCRIPTION CC SPRING TO ROTATE CLOCKWISE (FAIL SAFE CLOSE) CW SPRING TO ROTATE COUNTER CLOCKWISE (FAIL SAFE OPEN) DD BI-DIRECTIONAL		11-ESD POWER SUPPLY CODE DESCRIPTION NF NO ESD AA 24 V DC CC 1PH 110V AC 50/60Hz EE 1PH 220V AC 50/60Hz AF 24 V DC WITH FLOW CONTROL CF 110V AC 50/60Hz WITH FLOW CONTROL EF 220V AC 50/60Hz WITH FLOW CONTROL		13-CABLE ENTRIES JUNCTION BOX Code Description TR0 1,1/4"NPT(F) X 1 NOS, 3/4"NPT(F) X 6NOS NOS TR1 1,1/4"NPT(F) X 1 NOS, 3/4"NPT ADAPTED TO 1/2"NPT(F) X 6NOS NOS TR2 1,1/4"NPT(F) X 1 NOS, 1"NPT ADAPTED TO 1/2"NPT(F) X 6NOS NOS TR3 1,1/4"NPT(F) ADAPTED TO 1"NPT(F) X1 NOS, 3/4"NPT ADAPTED TO 1/2"NPT(F) X 6NOS NOS TR4 1,1/4"NPT(F) X 1 NOS, 3/4"NPT ADAPTED TO 1"NPT(F) X 6NOS NOS TR5 1,1/4"NPT(F) ADAPTED TO 3/4"NPT(F) X 1 NOS, 3/4"NPT ADAPTED TO 1/2"NPT(F) X 6NOS NOS TR6 1,1/4"NPT(F) ADAPTED TO 1/2"NPT(F) X 1 NOS, 3/4"NPT ADAPTED TO 1/2"NPT(F) X 6NOS NOS 2M0 M25(F) X 1 NOS, M20(F) X 6 NOS 4M0 M25(F) X 2 NOS, M20(F) X 4 NOS 4M1 M25(F) X 3 NOS, M20(F) X 4 NOS 6M0 M32(F) X 1 NOS, M25(F) X 6 NOS 6M1 M32(F) X 1 NOS, M25(F) ADAPTED TO M20(F) X 6 NOS	
02-ACTUATOR SIZE CODE DESCRIPTION 0075C1 0075C2 0230C1 0230C2 0230C3 0400C0 0400C1 1245C0 1245C1 SIZE		07-TEMPERATURE CODE DESCRIPTION NB -20°C TO +70°C		12-TRANSMITTER CODE DESCRIPTION NT NONE PT POSITION RT PRESSURE BT POSITION + PRESSURE		17-CERTIFICATION CODE DESCRIPTION C0 WEATHER PROOF C1 Exd, IEC-60079-1 C2 Exd, IS/IEC-60079-1 + PESO C3 Exd ATEX C4 IECex, IEC-60079-1 C5 Exd, IS/IEC-60079-1 + PESO + SIL3 C6 IECex, IEC-60079-1 + SIL3 C7 Exd ATEX + SIL3	
03-OPERATION CODE DESCRIPTION OO ON-OFF MO MODULATING		08-BODY/COVER MATERIAL CODE DESCRIPTION AL ALUMINIUM ENCLOSURE 8M STAINLESS STEEL SS316/CF8M WC WCB ENCLOSURE F8 CF8 ENCLOSURE SG SG IRON 500/77 ENCLOSURE		14-LIMIT SWITCH Code DESCRIPTION 1A* HONEYWELL SWITCH 3A* P&F NJ2V3N 13A* P&F NBB3V3Z4 6A* NON CONTACT TYPE, COBRA SWITCH NOTE: * DENOTES NUMBER OF SWITCHES (MAX. 4 NOS)		18-SPECIAL VERSION CODE DESCRIPTION * NONE SUXXX SPECIAL CUSTOMIZATION	
04-ACTION CODE DESCRIPTION E SINGLE ACTING D DOUBLE ACTING		09-HAND PUMP CODE DESCRIPTION HN NONE HB HYD.HAND PUMP W/O FEEDBACK HF HYD.HAND PUMP WITH FEEDBACK		15-COMMUNICATIONS CODE DESCRIPTION NC NONE FF FOUNDATION FIELDBUS HA HART MB MODBUS PB PROFIBUS			
05-MOUNTING POSITION CODE DESCRIPTION S HORIZONTAL V VERTICAL		10-INPUT POWER SUPPLY CODE DESCRIPTION A #24 V DC B 1PH 110-240V AC 50/60Hz F 3PH 220-240V 50/60Hz N 3PH 415V 50Hz Q 3PH 380-480V 50/60Hz Z 48 V DC		16-ADDITIONAL COMMUNICATION CODE DESCRIPTION NN NONE BX BLUETOOTH			

NOTE: # FOR 24VDC INPUT POWER SUPPLY 48V DC MOTOR WILL NOT BE APPLICABLE.