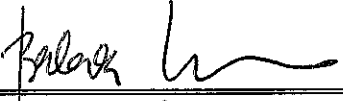




IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEX CES 14.0030U	issue No.: 0	Certificate history:
Status:	Current		
Date of Issue:	2016-03-15	Page 1 of 3	
Applicant:	CORTEM S.p.A. Via Aquileia 10 I - 34070 Villesse (GO) Italy		
Equipment: Optional accessory:	Signal and Control Operators, series M-0...		
Type of Protection:	Flameproof enclosures 'd'; Dust ignition protection 't'		
Marking:	Ex db I Mb (for stainless steel operators only & polycarbonate lenses) Ex db IIC Gb Ex tb IIIC Db IP66		
Approved for issue on behalf of the IECEx Certification Body:	Mirko Balaz		
Position:	Head of IECEx CB		
Signature: (for printed version)	 <hr/>		
Date:	<hr/> 15-3-2016		

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 the Official IECEx Website.

Certificate issued by:

CESI
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

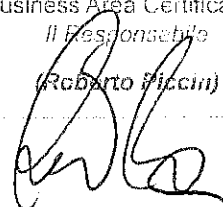
CESI

CESI S.p.A.

Testing & Certification Division
Business Area Certification

Il Responsabile

(Roberto Piccini)





IECEx Certificate of Conformity

Certificate No.: IECEx CES 14.0030U

Date of Issue: 2016-03-15

Issue No.: 0

Page 2 of 3

Manufacturer: **CORTEM S.p.A.**
Via Aquileia 10
I - 34070 Villesse (GO)
Italy

Additional Manufacturing location(s):

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 electrical apparatus 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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2013 Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical 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/CES/ExTR14.0033/00

IT/CES/ExTR14.0033/01

Quality Assessment Report:

IT/CES/QAR06.0002/09



IECEx Certificate of Conformity

Certificate No.: IECEx CES 14.0030U

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The M-0... series of command, control and signal operators are component suitable for mounting on explosion proof enclosure. The external bodies of pushbuttons and signaling buttons are made in aluminium alloy or stainless steel. The shafts and bushings are made in stainless steel. The external body of the signaling lamps are made in polycarbonate.

The Signal and Control Operators series M-0... characteristics and a Schedule of Limitations are further described in the Annexe of this certificate.

CONDITIONS OF CERTIFICATION: NO



Prot: B6007585

IECEX Certificate of Conformity



Annex to certificate:

IECEX CES 14.0030U Issue No.:0 of 2016-03-15

Applicant:

CORTEM S.p.A.

Via Aquileia 10, I - 34070 Villesse (GO), Italy

Electrical Apparatus:

Signal and control operators series M-0..

General product information:

The Command, Control and Signal operators series **M-0..** are components suitable for mounting on explosion proof enclosure. The external bodies of pushbuttons and signalling buttons are made in aluminium alloy or stainless steel. The shafts and bushings are made in stainless steel. The external body of the signalling lamps are made in polycarbonate.

The operators are essentially made by an axial shaft mounted and mechanically locked in an adequate centre. This centre is formed by a bushing screwed on enclosure wall. Push buttons, signalling lamps and operating handle may be applied on all Ex d enclosures where there is the possibility to perform threaded holes not exceeding the maximum number foreseen for applications.

The Command, Control and Signal operators series **M-0..** have the following temperature ranges:

Group I applications:

- operating temperature range from **-20°C up to +100°C**;

Group II applications:

- operating temperature range from **-40°C up to +100°C** for pilot lights made in polycarbonate;

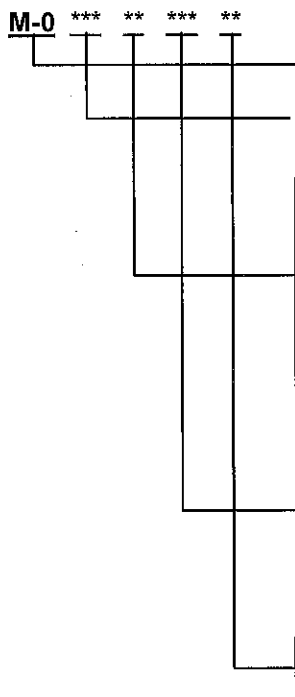
- operating temperature range from **-60°C up to +100°C** for all other operating components and glass lenses.

The Command, Control and Signal operators series **M-0..** have the following standard mounting threads types: cylindrical ISO Metric 965/1 and ISO 965/3 from M32x1.5 or M42x1.5. For series **M-0..** handle switches the mounting threads are ISO 228/1 from $\varnothing 3/8"$ or $\varnothing 1/2"$.

To the Command, Control and Signal operators series **M-0..** the IP 66 degree of protection between the operator mounting body and the enclosure wall is achieved with sealant put at least on two complete threads engaged of the threaded coupling. For sliding or rotary operators the IP 66 degree of protection between the operator rod and operator body is achieved with an O-ring gasket made of Silicon rubber.

The bodies of Command, Control and Signal operators series **M-0..** are generally made of Aluminium alloy or Stainless steel (type AISI316, AISI304 and AISI303) while bushings and shafts are made of Stainless steel (type AISI316, AISI304 and AISI303). Operators with lens for pilot light are made of Polycarbonate or glass while for signalling push buttons are made of tempered glass. Operators marked Ex db I Mb are made in Stainless steel only.

Identification of Signal operators



Code which identifies the series

Code which identifies the model (see table 1.)

Lens or button colour:

- **R:** Red
- **V:** Green
- **I:** Colourless
- **G:** Yellow
- **B:** Blue
- **BI:** White
- ...: other colours available

Nominal voltage ac/dc (for pilot lights only):

- **12:** 12 V
- **24:** 24 V
- **110:** 110 V
- **230:** 230 V
- ...: other voltages available

Manufacturing material:

- **Blank:** aluminium alloy body (polycarbonate lens for pilot lights only)
- **IN:** stainless steel body

PAD B6007585 (2275003) - USO AZIENDALE



IECEX Certificate of Conformity

CESI

Prot: B6007585

Annex to certificate:

IECEX CES 14.0030U Issue No.:0 of 2016-03-15

Applicant:

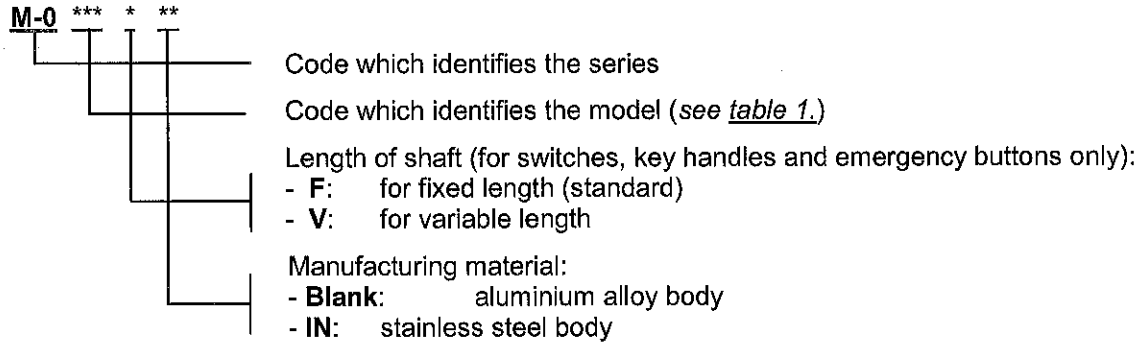
CORTEM S.p.A.

Via Aquileia 10, I - 34070 Villesse (GO), Italy

Electrical Apparatus:

Signal and control operators series M-0..

Identification of Command, Control operators



Other suffix can be added on the code for particular configuration, type of external handles or internal lever.

Electrical characteristics

Command, Control and Signal operators series M-0..:

- Nominal voltage: 250 V ac/dc for pilot lights;
240 V ac/dc for led pilot lights;
600 V for switches and buttons;
- Frequency: 50/60 Hz;
- Nominal current: 10 A for push buttons;
1000 A for selector switches;
- Power consumption: max 3 W for incandescent lamps;
max 1,5 W for led lamps.

Types of Command, Control operators are listed on the following **Table 1**:

Command, Control operators series M-0..			
Model	Component description	Typical associated equipment, switchgear or lamp	Electrical characteristics of standard equipment
M-0..	Operators with handle for switches	Rotary switches, Isolators/circuit breakers.	16A – 1000V
M-0428	Signalling button	BA9 incandescent, LED, Contact blocks.	Lamp: 3W – 6/250V Contacts: 10A – 600V
M-0429	Pushbuttons	Contact blocks.	10A – 600V
M-0430	Emergency button	Contact blocks.	10A – 600V
M-0445	Emergency button	Contact blocks.	10A – 600V
M-0457	Signalling lights	BA9 incandescent, LED.	3W – 6/250V BA9 incandescent lamp or 1,5W – 6/250V LED
M-0427	Double pushbutton	Contact blocks.	10A – 600V
M-093	Key switch operator	Rotary switches.	16A – 600V
M-0..	Emergency stop pushbutton	Contact blocks, Rotary switches.	Contacts: 10A – 600V Switches: 16A – 600V
M-0557	Potentiometer	Rotary potentiometer.	16A – 600V



Prot: B6007585

IECEX Certificate of Conformity

CESI

Annex to certificate:

IECEX CES 14.0030U Issue No.:0 of 2016-03-15

Applicant:

CORTEM S.p.A.

Electrical Apparatus:

**Via Aquileia 10, I - 34070 Villesse (GO), Italy
Signal and control operators series M-0..**

"Scheduled of Limitations" for Ex Components:

- The Command, Control and Signal operators series **M-0..** should be assembled on the cover or walls of metallic Ex db enclosures with minimum thickness 8mm, minimum 5 threads engaged and locked with a blocking system against accidental rotation and loosening. The enclosures should be IECEx certified, for Group I (mine), Group II (gas) and Group III (dust) with suitable degree of protection IP.
- The coupling of the Command, Control and Signal operators with the enclosures shall be made as indicated by the manufacturer in the documents annexed to this certificate in order to respect the type of protection of the electrical apparatus on which they are mounted.
- The Command, Control and Signal operators series **M-0..** shall be installed in such a way that the temperature at the mounting point will remain within the service temperature ranges below:
 - from - 40 °C up to + 100°C for Signal operators type **M-0457** with Polycarbonate lenses only;
 - from - 60 °C up to + 100°C for Signal operators types **M-0457AL**, **M-0457IN** and for all other Command, Control and Signal operators with glass lenses.
 - **Group I** applications: restricted up to - 20 °C for all Command, Control and Signal operators.

Furthermore the non-transmission tests have been performed for a maximum ambient temperature of **+60°C**.

- The IP 66 mechanical protection of the Command and Control operators is obtained by inserting an O-ring made of silicon rubber in-between the mounting body and the command rod and furthermore when the mounting body is completely screwed and sealed as shown into the mounting instruction.
- It is the final assemblers/users responsibility to ensure the threaded joint between the Command, Control and Signal operators and the associated enclosure meet all the requirements of the applicable standards for the assembly.