

COMITATO ELETTROTECNICO ITALIANO  
Viale Monza 259, 20126 Milano

Fag. 1  
of 20

CECC 16101-003  
Issue 3  
Date December 1982

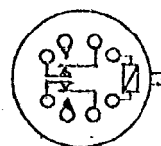
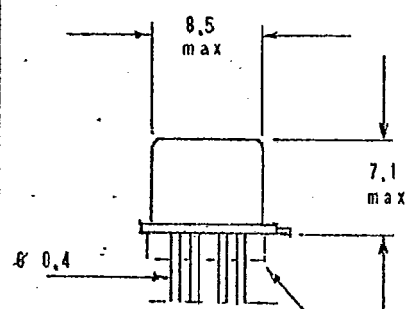


ELECTRONIC COMPONENTS OF ASSESSED QUALITY  
IN ACCORDANCE WITH:  
CHR-CEI-CECC-16000  
CHR-CEI-CECC-16100

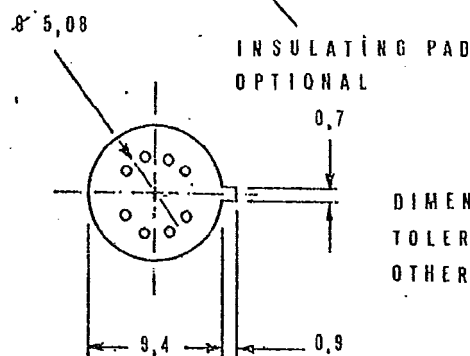
NATIONAL NUMBER:  
CNR-CEI-CECC-16101-003

DETAIL SPECIFICATION FOR:  
ALL OR NOTHING RELAYS  
TO-5 CAN  
HERMETICALLY SEALED

MANUFACTURER:  
HI-6 D'ITALIA SPA  
S.S. APPIA KM 56.420  
04012 CISTERNA DI LATINA  
TELEPHONE 06/9699666  
TELEX 611412



SCHEMATIC  
TERMINAL VIEW



DIMENSIONS ARE IN MM  
TOLERANCE  $\pm 0,25$  UNLESS  
OTHERWISE STATED

MANUFACTURER'S TYPE: NA

TWO POLE CHANGEOVER  
CONTACT ARRANGEMENT  
(2 FORM C). LIGHT DUTY  
WITH LOW LEVEL SWITCHING  
CAPABILITY.  
SOLDERABLE STRAIGHT  
TERMINATIONS.

TEST SCHEDULE 3  
WITH ADDITIONS

OPERATING POWER  
CONTACT RATING  
NOMINAL COIL VOLTAGE  
TEMPERATURE RANGE  
SHOCK  
VIBRATION  
BUMP  
INSULATION RESISTANCE

130 mW Nominal  
1A, 28 V d.c.; Low Level  
5 V d.c. to 30 V d.c.  
-65 C to +125 C  
735 m/s<sup>2</sup> 6ms halfwave pulse  
294 m/s<sup>2</sup> 10 - 2000 Hz  
390 m/s<sup>2</sup> 6ms halfwave pulse  
10000 Megohms minimum

REFER TO QUALIFIED PRODUCTS LIST FOR AVAILABILITY OF RELAYS MADE TO THIS SPECIFICATION

## VARIANT CODE AND CHARACTERISTICS

TABLE I

| Coil<br>Variant<br>Code | Rated<br>Voltage<br>D.C. | Coil<br>Resistance<br>Tol. $\pm 10\%$<br>at 25°C | Saturate<br>Voltage<br>D.C. | Maximum<br>Pull-in<br>Voltage |      | Maximum<br>Drop-out<br>Voltage |      | Minimum<br>Drop-out<br>Voltage |      |
|-------------------------|--------------------------|--------------------------------------------------|-----------------------------|-------------------------------|------|--------------------------------|------|--------------------------------|------|
|                         |                          |                                                  |                             | 125°C                         | 25°C | 125°C                          | 25°C | -65°C                          | 25°C |
| -01                     | 5.0                      | 50                                               | 5.8                         | 3.5                           | 2.7  | 2.3                            | 1.4  | .14                            | .22  |
| -02                     | 6.0                      | 98                                               | 8.0                         | 4.5                           | 3.5  | 3.2                            | 2.0  | .18                            | .28  |
| -03                     | 9.0                      | 220                                              | 12.0                        | 6.8                           | 5.3  | 4.9                            | 3.0  | .35                            | .54  |
| -04                     | 12.0                     | 390                                              | 16.0                        | 9.0                           | 7.0  | 6.5                            | 4.0  | .41                            | .63  |
| -05                     | 18.0                     | 880                                              | 24.0                        | 13.5                          | 10.5 | 10.0                           | 6.0  | .59                            | .91  |
| -06                     | 26.5                     | 1560                                             | 32.0                        | 18.0                          | 14.2 | 13.0                           | 8.0  | .89                            | 1.37 |
| -07                     | 28.0                     | 1560                                             | 29.0                        | 21.0                          | 15.0 | 8.0                            | 7.0  | 1.0                            | 1.2  |
| -08                     | 30.0                     | 2500                                             | 36.0                        | 22.0                          | 17.7 | 16.0                           | 10.0 | 1.0                            | 1.50 |

Insulation resistance of coil: 10000 Megohms  
at 500 V d.c.

Dielectric Strength: 450 V r.m.s.

## 1.1. Contacts

Resistive and  
Inductive loadCategory I, II  
with low level switching  
capability

Two changeover contact units (break-before-make)

Maximum contact voltage 28 V d.c.

Minimum contact voltage 30 mV

Maximum contact current 1.0 A resistive  
0.1 A d.c. inductive  
with 0.32 H

Minimum contact current 10 mA

Maximum contact current overload 2 A, 100 operations

Insulation resistance 10000 Megohms min. at 500 V d.c.

Dielectric strength 450 V r.m.s.

Contact circuit resistance 100 milliohms max before life  
(measured at 3mm from glass seal) 300 milliohms max after life

Contact bounce time 2.0 ms maximum

Operate time 2.5 ms maximum

Release time 2.0 ms maximum

Minimum operations 10<sup>5</sup>  
at 28 V d.c. 1 A resistive

(1) Relays subjected to high level loads shall not subsequently be used for low level applications

## 1.2. Environmental limitations

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| Climatic category         | 65/125/56                                                              |
| Maximum temperature range | -65°C to + 125°C                                                       |
| Shock (functional)        | 735 m/s <sup>2</sup> (75 G), 6ms halfsine wave                         |
| Vibration                 | 294 m/s <sup>2</sup> (30 G), 10-2000 Hz<br>10-60 Hz 1.5 amplitude peak |
| Bump (functional)         | 392 m/s <sup>2</sup> (40 G) 6 ms pulse duration                        |

## 1.3. Physical

|                                |                                              |
|--------------------------------|----------------------------------------------|
| Hermetically sealed by welding |                                              |
| Weight                         | 3.0 g maximum                                |
| Finish                         | Bright tin-lead plated terminals<br>and case |

## 2.0. ORDERING INFORMATION

When ordering relays to this specification, the following information shall be given:

1. The CECC and issue number of this detail specification
2. Code number in the order as follows:

Two digits for coil variant (see Table 1)

Two digits for termination variant (see Appendix 1)

Example: CECC-16101-003-02-01

### 3.0. MARKING

#### 3.1. MARKING OF RELAY

The minimum data to be:

- Manufacturer's name or trade mark
- Relay type and variants code
- Coded date of manufacture ( two digits for the year, two digits for the week)
- Circuit diagram

#### 3.2. MARKING OF PACKAGE

- Detail specification reference
- Manufacturer's name or trade mark
- Relay type code
- Manufacturer's batch identification (by purchase order)
- Quantity

### 4.0. RELATED DOCUMENTS

This specification shall be read in conjunction with:

- CNR-CEI-CECC-16000 - Generic specification, for electromechanical all or nothing relays
- CNR-CEI-CECC-16100 - Sectional specification, for electromechanical all or nothing relays
- CNR-CEI-CECC-16101 - Blank detail specification, for electromechanical all or nothing relays
- CNR-CEI-CECC-00007 - Sampling procedure and tables for inspection by attributes
- CNR-CEI-CECC-00107 - Quality assessment procedure
- IEC-68 - Basic environmental testing procedures
- CECC-00200 - Qualified product list

## 5.0. QUALIFICATION APPROVAL

See Table 3

5.1. Method 1 of CECC 00107

5.2. Paragraph 6.0 is applicable

5.3. The specimens for qualification are specified in Table 3.  
The specimens embrace the entire voltage range.

## 6.0. QUALITY CONFORMANCE INSPECTION

See Table 2

### 6.1. General Information

6.1.1 With the exception of subgroup AD, where a subgroup contains more than one test, order of tests is mandatory.

6.1.2 Performance characteristics, Contact Bounce and Contact Timing shall be measured with contacts loaded with 5 V d.c. maximum, 10 mA maximum.

6.1.3 Rated coil voltage as specified in Table 1 shall be used for all tests unless otherwise stated.

6.1.4 Ambient temperature to be 15 C to 30 C unless otherwise stated.

6.1.5 Samples subjected to destructive tests marked 'D' shall not be accepted for release.

6.1.6 Vibration, Shock, Bump test.

Method of mounting: relays shall be rigidly secured by means of adhesive applied between the top of the relay and the mounting plate.

Terminals shall be clamped at approximately 10mm from the body.

Connections to the relay shall be made by soldering stranded flexible wire to the terminals.

When energized the applied voltage shall be as rated.

For purpose of monitoring, contacts shall be loaded with 5 V, 10 mA maximum.