



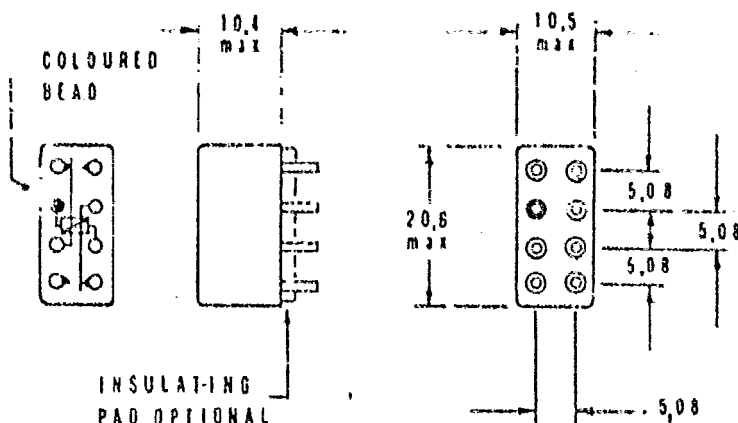
ELECTRONIC COMPONENTS OF ASSESSED QUALITY
IN ACCORDANCE WITH:
ENR-CEI-CECC-16000
ENR-CEI-CECC-16100

NATIONAL NUMBER:
ENR-CEI-CECC-16101-007

DETAIL SPECIFICATION FOR:
ALL OR NORMING RELAYS
HALF CRYSTAL CAN
PERPETICALLY SEALED

MANUFACTURER:
HI-3 DIGITAL SPA
S.S. APPIA KM 35,400
04112 CISTERNIA DI LATINA
TELEPHONE 05 9678666
TELEX 611412

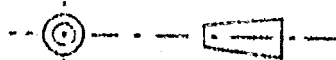
MANUFACTURER'S TYPE: 2 K



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

TEST SCHEDULE 3
WITH ADDITIONS

DIMENSIONS ARE IN MM
TOLERANCE ± 0.25 UNLESS OTHERWISE STATED



OPERATING POWER
CONTACT RATING

250 mW Nominal
2 A, 28 V d.c.; 1 A, 115 V a.c. 400 Hz
Resistive; 0.75, 28 V d.c. inductive;
Low level

NOMINAL COIL VOLTAGE

5 V d.c. to 48 V d.c.

TEMPERATURE RANGE

-65°C to +125°C

SHOCK

490 m/s² 6ms halfwave pulse

VIBRATION

196 m/s² 10 - 2000 Hz

BUMP

390 m/s² 6ms halfwave pulse

INSULATION RESISTANCE

1000 Megohms minimum

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

VARIANT CODE AND CHARACTERISTICS

TABLE 1

Coil Variant Code	Rated Voltage D.C.	Coil Resistance tol. $\pm 10\%$ at 25°C	Saturate Voltage D.C.	Maximum Pull-in Voltage		Maximum Drop-out Voltage		Minimum Drop-out Voltage	
				125°C	25°C	125°C	25°C	-65°C	25°C
-01	5.0	27	6.0	3.8	2.7	2.4	1.63	.21	.29
-02	6.0	37	7.0	5.0	-	2.5	-	.4	-
-03		40	7.5	4.5	3.2	2.9	2.0	.25	.35
-04		40	7.2	-	3.6	-	-	-	.30
-05		42	7.2	-	3.6	-	-	-	.30
-06		47.5	7.0	5.0	-	2.5	-	.4	-
-07		60	7.2	-	3.6	-	-	-	.30
-08	12.0	120	14.0	-	7.2	-	3.6	-	1.2
-09		150	14.4	-	6.5	-	-	-	.75
-10		150	14.4	-	7.2	-	-	-	.60
-11		150	14.0	10.0	-	5.0	-	.8	-
-12		160	15.0	9.0	6.4	5.8	4.0	.50	.70
-13		190	14.0	10.0	-	5.0	-	.8	-
-14		210	14.4	-	7.2	-	-	-	.6
-15		320	14.4	-	7.2	-	-	-	.6
-16	26.5	675	32.0	-	13.5	-	-	-	1.5
-17		700	30.0	22.0	-	12.0	-	1.5	-
-18		700	32.0	18.0	13.5	14.0	8.0	1.0	1.5
-19		935	30.0	22.0	-	12.0	-	1.5	-
-20	28.0	700	29.0	21.0	-	8.0	-	1.0	-
-21		935	29.0	21.0	-	8.0	-	1.0	-
-22	48.0	2500	62.0	-	25.0	-	-	-	2.5
-23		2500	57.6	-	28.8	-	-	-	2.4
-24		2600	55.0	40.0	-	20.0	-	2.5	-
-25		2800	57.6	-	28.8	-	-	-	2.4
-26		3500	57.6	-	28.8	-	-	-	2.4
-27	24.0	675	32.0	-	14.4	-	-	-	1.2
-28		830	32.0	-	14.4	-	-	-	1.2
-29		1250	32.0	-	14.4	-	-	-	1.2
-30		700	32.0	-	14.4	-	-	-	1.2
-31	5.0	40	-	-	3.0	-	-	-	.25
-32	20.0	700	24.0	-	12.0	-	-	-	1.0
-33	6.0	40	7.2	-	3.3	-	-	-	.35

(1) COIL RESISTANCE TOLERANCE: $\pm 15\%$

Insulation resistance of coil: 1000 Megohms at 500 V d.c.

Dielectric Strength: 500 V r.m.s.

1.1. Contacts

Resistive and
inductive loadCategory I, II
with low level switching
capability (1)

Two changeover contact units (break-before-make)

Maximum contact voltage	32 V d.c., 115 V r.a.s., (400 Hz) resistive
Minimum contact voltage	30 mV
Maximum contact current	2 A d.c. or 1 A r.a.s. resistive .75 A d.c. inductive, with 200 mH
Minimum contact current	10 mA
Maximum contact current overload	4 A, 100 operations
Insulation resistance	1000 Megohms min. at 500 V d.c.
Dielectric strength	500 V r.a.s.
Contact circuit resistance (measured at 3mA from glass seal)	50 milliohms max before life 200 milliohms max after life.
Contact bounce time	2.5 ms maximum
Operate time	4.0 ms maximum
Release time	4.0 ms maximum
Minimum operations at 20 V d.c. 2 A resistive	10^5

(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)	490 m/s ² (50 G), 11ms halfsine wave
Vibration	196 m/s ² (20 G), 10-2000 Hz; 10-60 Hz: 1.5 amplitude peak
Quap (functional)	392 m/s ² (40 G) 6 ms pulse duration

(Performance for relay mounting variant ref. 06 securely mounted. Derating may occur on other mounting variants)

1.3. Physical

Hermetically sealed by welding	
Weight	13 g maximum
Finish	Bright tin-lead plated terminals 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 mounting variant	(see Appendix 1)
Two digits for termination variant	(see Appendix 2)
Letter "P" if insulating pad is required	(see Appendix 3)

Example: CECC-16101-007-02-01-02- P

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 A0, 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.

Relays shall be rigidly secured, either by their own brackets, or by means of adhesive applied between the top of the relay and the mounting plate.

Long terminals shall be clamped at approximately 10 mm 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.

7.0. INTERVALS BETWEEN TESTS

The interval between Subgroups C3, C4 shall be one year.
The interval between Subgroup C5 shall be two years.

8.0. FORMATION OF INSPECTION LOTS

Inspection lots shall be formed by the aggregation of several lots which are produced over a period not exceeding one week.

9.0. ADDITIONAL INFORMATION

For Qualification Approval Procedure see Table 3.

For mounting variants see Appendix 1.

For termination variants see Appendix 2.

For insulating pad information see Appendix 3.

10.0. NOTES

10.1. Conditions of tests are prescribed once only. Later on they are referred to as 'Test No.'.

10.2. Reference numbers of tests and performance requirements refer to CECC-16000 or to 16100 if applicable.