

HF9513

2/5 CUBIC INCH 4 FORM C HERMETICALLY SEALED RELAY  
WITH COIL TRANSIENT SUPPRESSION



**Features**

- Force balanced type
- With coil transient suppression
- 5A contacts switching capability
- Failure rate can be level L
- High ambient applicability
- All metal welded construction
- Hermetically welded and marked by laser

AMBIENT ADAPTABILITY

|                           |              |                  |                  |                  |
|---------------------------|--------------|------------------|------------------|------------------|
| Ambient grade             |              | I                | II               | III              |
| Ambient temperature       |              | -55 °C to 85 °C  | -55 °C to 85 °C  | -65 °C to 125 °C |
| Humidity                  |              | 98%, 40 °C       |                  |                  |
| Low air pressure          |              | 58.53 kPa        | 4.39 kPa         | 4.39 kPa         |
| Sine vibration            | Frequency    | 10 Hz to 1000 Hz | 10 Hz to 2000 Hz | 10 Hz to 3000 Hz |
|                           | Acceleration | 147 m/s²         | 196 m/s²         | 294 m/s²         |
| Shock resistance          |              | 490 m/s²         | 980 m/s²         | 1960 m/s²        |
| Random vibration          |              | 10 (m/s²)/Hz     | 20 (m/s²)/Hz     | 40 (m/s²)/Hz     |
| Steady-state acceleration |              | 147 m/s²         | 294 m/s²         | 490 m/s²         |

CONTACT DATA

|                                       |                 |         |    |     |
|---------------------------------------|-----------------|---------|----|-----|
| Ambient grade                         |                 | I       | II | III |
| Arrangement                           |                 | 4 C     |    |     |
| Contact resistance<br>or voltage drop | Initial max.    | 0.1V    |    |     |
|                                       | After life max. | 0.125V  |    |     |
| Failure level                         |                 | Level L |    |     |

Contact and life ratings

| Type      | Contact load |                                |                                   | Electrical life<br>min. |
|-----------|--------------|--------------------------------|-----------------------------------|-------------------------|
|           | 28Vd.c.      | 115Va.c. 400Hz<br>Single phase | 115/200Va.c. 400Hz<br>Three phase |                         |
| Resistive | 5A           | 5A                             | 5A                                | 1 x 10 <sup>5</sup> OPS |
| Inductive | 3A           | 3A                             | 3A                                | 2 x 10 <sup>4</sup> OPS |
| Motor     | 2A           |                                |                                   | 1 x 10 <sup>5</sup> OPS |
| Lamp load | 1A           |                                |                                   | 1 x 10 <sup>5</sup> OPS |

| SPECIFICATION                                        |                                                    |                            |                                            |                                            |
|------------------------------------------------------|----------------------------------------------------|----------------------------|--------------------------------------------|--------------------------------------------|
| Ambient grade                                        |                                                    | I                          | II                                         | III                                        |
| Insulation resistance min.                           | Initial                                            | 100 MΩ (@ 500 Vd.c.)       | 100 MΩ (@ 500 Vd.c.)                       | 100 MΩ (@ 500 Vd.c.)                       |
|                                                      | After life or after testing                        | 50 MΩ (@ 500 Vd.c.)        | 50 MΩ (@ 500 Vd.c.)                        | 50 MΩ (@ 500 Vd.c.)                        |
| Dielectric strength min.<br>(Normal condition)       | Between coil & cover(initial)                      | 1000 Vr.m.s.               | 1000 Vr.m.s.                               | 1000 Vr.m.s.                               |
|                                                      | Between coil & cover(after life testing)           | 750 Vr.m.s.                | 750 Vr.m.s.                                | 750 Vr.m.s.                                |
|                                                      | Between other insulation parts(initial)            | 1000 Vr.m.s.               | 1000 Vr.m.s.                               | 1000 Vr.m.s.                               |
|                                                      | Between other insulation parts(after life testing) | 750 Vr.m.s.                | 750 Vr.m.s.                                | 750 Vr.m.s.                                |
| Dielectric strength min.(Low air pressure condition) |                                                    | 250 Vr.m.s.                | 250 Vr.m.s.                                | 250 Vr.m.s.                                |
| Leakage rate max.                                    |                                                    | 1 Pa•cm <sup>3</sup> /s    | 1 x 10 <sup>-1</sup> Pa•cm <sup>3</sup> /s | 1 x 10 <sup>-3</sup> Pa•cm <sup>3</sup> /s |
| Operate time max.                                    |                                                    | 7 ms                       |                                            |                                            |
| Release time max.                                    |                                                    | 7 ms                       |                                            |                                            |
| Mounting style                                       |                                                    | See the mounting dimension |                                            |                                            |
| Terminals                                            |                                                    | See the terminal styles    |                                            |                                            |
| Work position                                        |                                                    | Random                     |                                            |                                            |
| Weight max.                                          |                                                    | 28.2 g                     |                                            |                                            |

| COIL DATA           |              |
|---------------------|--------------|
| Norminal coil power | Approx. 2.4W |

| Coil Version |                 |            |                          |                      |                   |                       |                      |                   |                       |                      | Vd.c.                    |
|--------------|-----------------|------------|--------------------------|----------------------|-------------------|-----------------------|----------------------|-------------------|-----------------------|----------------------|--------------------------|
| Order Number | Coil voltage    |            | at 25 °C                 |                      |                   |                       | -65°C to 125°C       |                   |                       | Pick-up voltage max. |                          |
|              | Nominal voltage | Value max. | Coil resistance (Ω) min. | Pick-up voltage max. | Hold voltage max. | Drop-out voltage min. | Pick-up voltage max. | Hold voltage max. | Drop-out voltage min. | High temp. test      | Continuous electric test |
| 006          | 6               | 7.3        | 15                       | 3.3                  | 1.6               | 0.40                  | 4.5                  | 2.3               | 0.25                  | 5.5                  | 5.70                     |
| 012          | 12              | 14.5       | 70                       | 6.6                  | 3.3               | 0.75                  | 9.0                  | 4.5               | 0.50                  | 9.9                  | 11.25                    |
| 028          | 28              | 29.0       | 360                      | 15.5                 | 5.5               | 2.30                  | 20.0                 | 7.0               | 1.50                  | 21.0                 | 25.0                     |

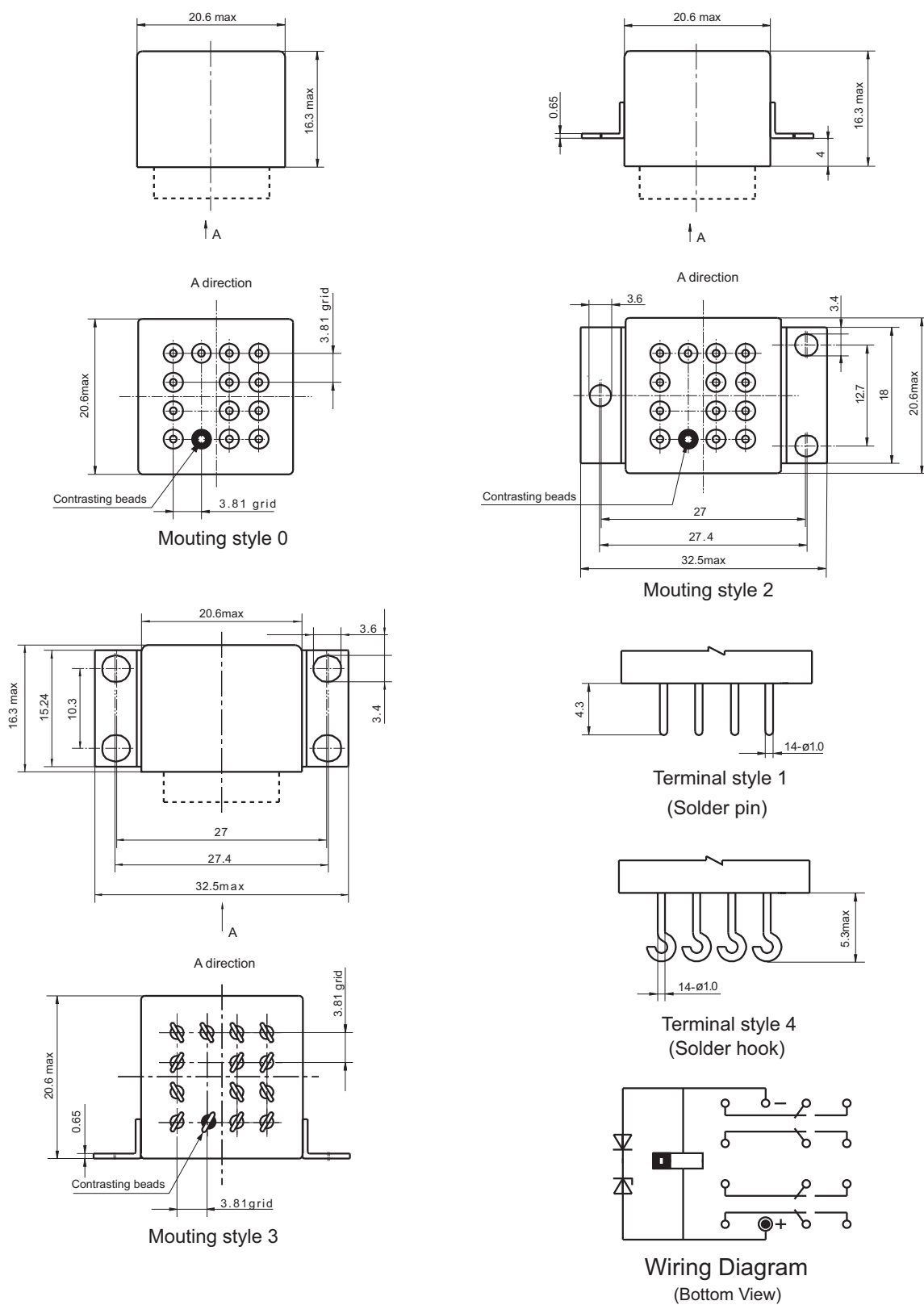
Notes: We can offer many kinds of coil voltage under the requirement of users.

| ORDERING INFORMATION |                                                                                |      |   |    |        |
|----------------------|--------------------------------------------------------------------------------|------|---|----|--------|
| Type                 | HF9513                                                                         | -012 | L | -0 | 1 - II |
| Order Number         | 006、012、028                                                                    |      |   |    |        |
| Failure Rate         | L (level III products available)                                               |      |   |    |        |
| Mounting Style       | 0, 2, 3 (See the mounting dimension)                                           |      |   |    |        |
| Terminals Style      | 1, 4 (See " Terminal styles " below)                                           |      |   |    |        |
| Ambient Grade        | I : level I    II : level II    Nil: level III (With failure rate requirement) |      |   |    |        |

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit:mm

## Outline Dimension



## Disclaimer

This datasheet is for the customers' reference. All the specifications are subject to change without notice.

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