



- Rated load: 400A at 60VDC
- 120VDC with Magnet arc blow-out option
- Auxiliary contact option
- SPST, SPDT, DPST-NO, DPDT versions
- Motor reverser
- Bi-stable (Latching) option - SPST only



### Contacts

|   |  |
|---|--|
| Contact arrangement                     | SPST-NO-DM, SPDT, DPST-NO-DM, DPDT       |
| Contact material                        | AgCu Alloy                               |
| Max. switching voltage                  | DC 60V, 120VDC with magnet arc blow-out  |
| Rated load (resistive, $\cos \phi=1$ )  | DC1 400A 60VDC                           |
| Terminal temperature rise above ambient | <70°C. IEC EN60947, GB14/14048.4         |
| Contact voltage drop                    | max. $\leq 80\text{mV}$ @ 400A           |
| Auxiliary Contact (when fitted)         | arrangement SPST-NO (1 Form A) + SPST-NC |
| (not available for DPDT)                | max. current 5A @ 24VDC / 2A @ 48VDC     |
|   | min. current 100mA @ 5V                  |

### Coil

|                              |            |                               |
|------------------------------|------------|-------------------------------|
| Nominal Voltage (see page 2) | DC         | 12 ~ 120VDC (Tables 1 & 2)    |
| Rated power consumption      | hold       | 15 ~ 25W (non-latching type)  |
|                              | initial    | 30 ~ 40W (latching)           |
| Working duty                 | non-latch  | continuous                    |
| Minimum pulse length         | latch      | 200ms                         |
| Maximum operating frequency  | latch coil | 6 ops./min. square wave pulse |

### Insulation

|                       |                    |  |
|-----------------------|--------------------|--|
| Insulation resistance | Initial            | 100M $\Omega$ (min.) @500VDC                                 |
| Dielectric strength   | coil to contact    | 1000V <sub>rms</sub> (50/60Hz) / <1mA / 1 min (at sea level) |
|                       | contact to contact | 1000V <sub>rms</sub> (50/60Hz, 1min, <1mA leakage)           |

### General Data

|                               |               |             |
|-------------------------------|---------------|-------------|
| Operate / bounce time at 20°C | max.          | 30ms / 3ms  |
| Release time                  | max.          | 30ms        |
| Electrical life               | at rated load | 20,000 ops  |
| Mechanical life               | no load       | 100,000 ops |

### Environmental

|                      |           |   |
|----------------------|-----------|---|
| Ambient temperature  | operating | -25°C to +65°C (Latching), +85°C (non-Latching) |
| Shock resistance     |           | 20g peak, 11ms 1/2 sine                         |
| Vibration resistance |           | 3g sine peak (1-50Hz 0.5mm amplitude)           |
| Relative humidity    | RH        | 20% ~ 90%                                       |
| Dimensions           | L x W x H | Various - see dimensional drawings              |
| Weight               | approx.   | Various according to option and style           |

### Ordering Code

|   |  |                   |
|---|--|-------------------|
| D S C 4 0 M - 4 0 2 1 - 2 8 - 1 0 2 4 - S D W               |  |                   |
| <b>DSC Series</b>   |  | <b>Coil codes</b> |
| 40: Standard  |  | See tables 1 & 2  |
| 40M: Magnet arc blow-out                                    |  |                   |
| <b>Contact arrangement</b>                                  |  |                   |
| 4011: SPDT (C/O) (1 Form C (1Z) non latching)               |  |                   |
| 4012: Motor reverser (2 Form C (2Z) non latching)           |  |                   |
| 4021: SPST-NO (1 Form A (H) and latching SPST)              |  |                   |
| <b>Body style</b>   |  |                   |
| 28: Open frame, male stud terminals                         |  |                   |
| <b>Accessory options</b>                                    |  |                   |
| Blank: No option  |  |                   |
| C: Dust cover   |  |                   |
| S: Auxiliary switch (not available for 4012 contacts)       |  |                   |
| D: Parallel back EMFdiode suppression (standard coils)      |  |                   |
| T: Parallel TVS back EMFsuppression diode (bi-stable coils) |  |                   |
| <b>Mounting &amp; terminations</b>                          |  |                   |
| Blank: No bracket   |  |                   |
| W: 'W' shaped mounting bracket                              |  |                   |
| 1L: 'L' shaped mounting bracket                             |  |                   |
| 2L: 2 x 'L' shaped mounting brackets                        |  |                   |

Coil Data - Standard (monostable) coil

Table 1

| Coil code | Nominal voltage $U_s$ (VDC) | Recommended coil operating range (V) | Must operate max. voltage (VDC) | Must release voltage min. (VDC) | Starting current (A) | Coil power (W) |
|-----------|-----------------------------|--------------------------------------|---------------------------------|---------------------------------|----------------------|----------------|
| 1012      | 12                          | 0.85 $U_s$ ~ 1.2 $U_s$               | ≤ 8.4                           | ≥ 1.2                           | ≤ 1.5                | 15 ~ 25W       |
| 1024      | 24                          |                                      | ≤ 16.8                          | ≥ 2.4                           | ≤ 0.7                |                |
| 1030      | 30                          |                                      | ≤ 21.0                          | ≥ 3.0                           | ≤ 0.6                |                |
| 1036      | 36                          |                                      | ≤ 25.2                          | ≥ 3.6                           | ≤ 0.5                |                |
| 1048      | 48                          |                                      | ≤ 33.6                          | ≥ 4.8                           | ≤ 0.35               |                |
| 1060      | 60                          |                                      | ≤ 42.0                          | ≥ 6.0                           | ≤ 0.30               |                |
| 1072      | 72                          |                                      | ≤ 50.4                          | ≥ 7.2                           | ≤ 0.25               |                |
| 1080      | 80                          |                                      | ≤ 56.0                          | ≥ 8.0                           | ≤ 0.20               |                |
| 1096      | 96                          |                                      | ≤ 67.2                          | ≥ 9.6                           | ≤ 0.2                |                |
| 1120      | 120                         |                                      | ≤ 84.0                          | ≥ 12.0                          | ≤ 0.15               |                |

Coil Data - Single coil latch (bi-stable). Reverse polarity through coil to unlatch. SPST-NO-DM only

Table 2

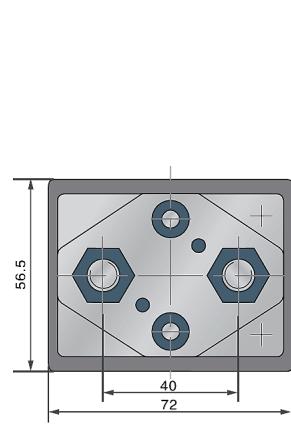
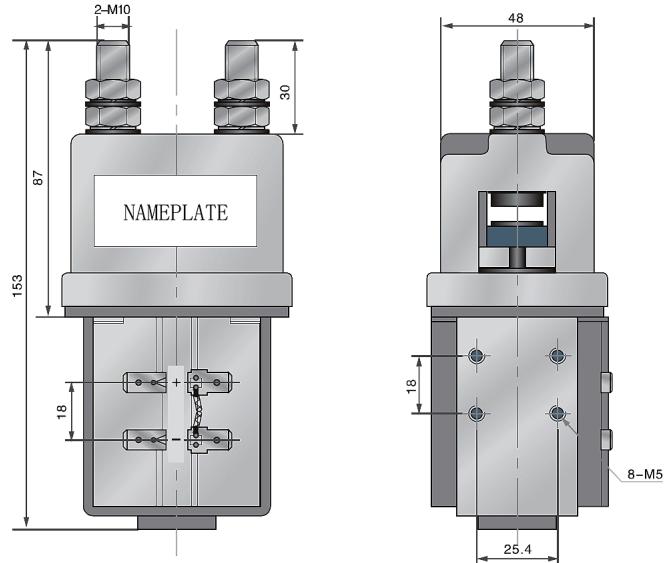
| Coil code | Nominal voltage $U_s$ (VDC) | Recommended coil operating range (V) | Must operate max. voltage (VDC) | Must release voltage min. (VDC) | Starting current (A) | Coil power (W)   |
|-----------|-----------------------------|--------------------------------------|---------------------------------|---------------------------------|----------------------|------------------|
| SL12      | 12                          | 0.85 $U_s$ ~ 1.2 $U_s$               | ≤ 9.6                           | ≤ 9.6                           | ≤ 2.50               | Initial 30 ~ 45W |
| SL24      | 24                          |                                      | ≤ 19.2                          | ≤ 19.2                          | ≤ 1.50               |                  |
| SL30      | 30                          |                                      | ≤ 24.0                          | ≤ 24.0                          | ≤ 1.00               |                  |
| SL36      | 36                          |                                      | ≤ 28.8                          | ≤ 28.8                          | ≤ 1.00               |                  |
| SL48      | 48                          |                                      | ≤ 38.4                          | ≤ 38.4                          | ≤ 0.80               |                  |
| SL60      | 60                          |                                      | ≤ 48.0                          | ≤ 48.0                          | ≤ 0.60               |                  |
| SL72      | 72                          |                                      | ≤ 57.6                          | ≤ 57.6                          | ≤ 0.50               |                  |
| SL80      | 80                          |                                      | ≤ 64.0                          | ≤ 64.0                          | ≤ 0.40               |                  |
| SL96      | 96                          |                                      | ≤ 76.8                          | ≤ 76.8                          | ≤ 0.35               |                  |
| SL120     | 120                         |                                      | ≤ 96.0                          | ≤ 96.0                          | ≤ 0.30               |                  |

Other coils available upon special request. MOQ's will apply.

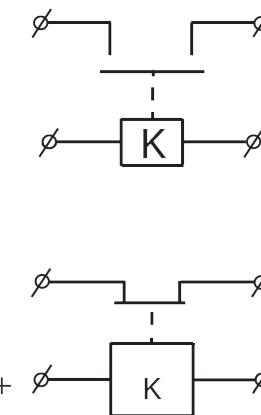
Dimensions (mm)

Fig. 1

DSC40-4021-28-\*\*\*\*



Circuit Diagram



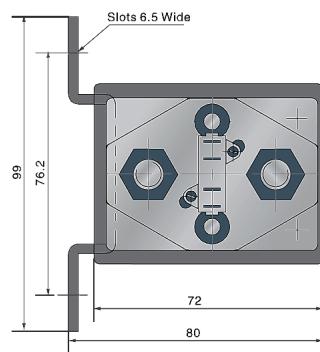
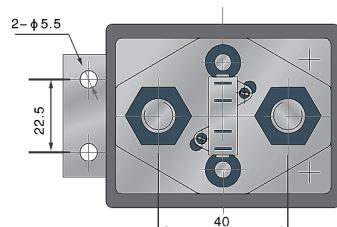
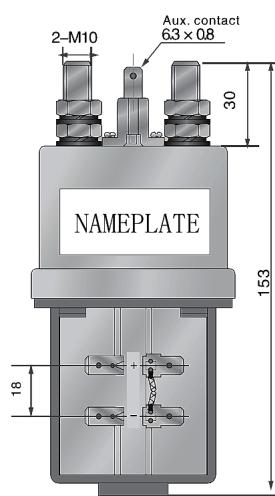
Non-Latch

Latch

## Dimensions (mm)

Fig. 2

DSC40-4021-28-\*\*\*\*-S-\*\*

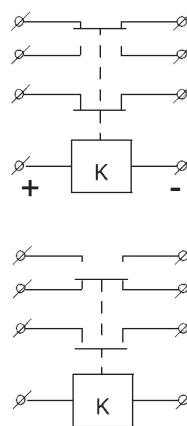


"1L" mounting bracket shown  
("2L" is additional bracket on  
opposite side)

See Page 3 for 4012 contact option  
"W" mounting brackets

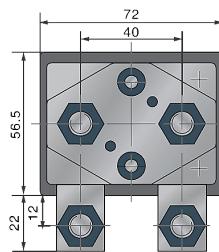
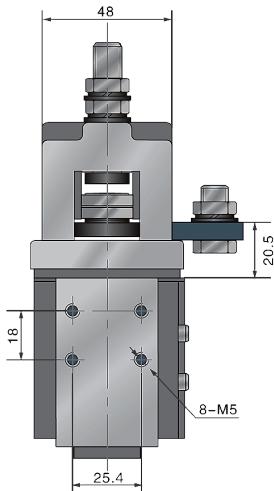
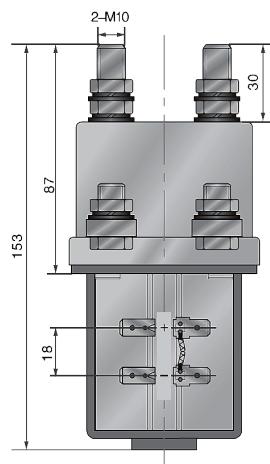
### Circuit Diagram

Latch

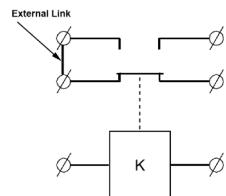


Non-Latch

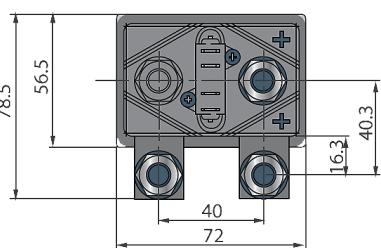
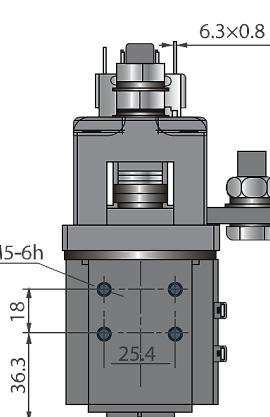
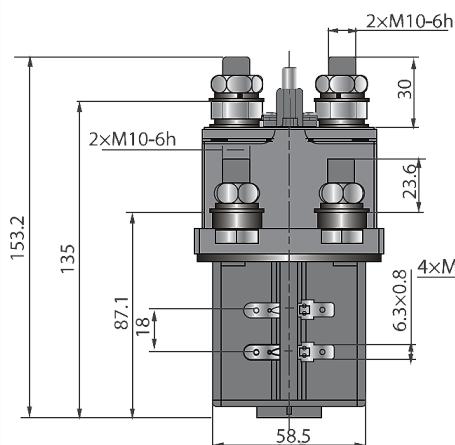
DSC40-4011-28-\*\*\*\*-\*\*



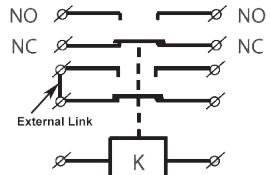
### Circuit Diagram



DSC40-4011-28-\*\*\*\*-S-\*\*



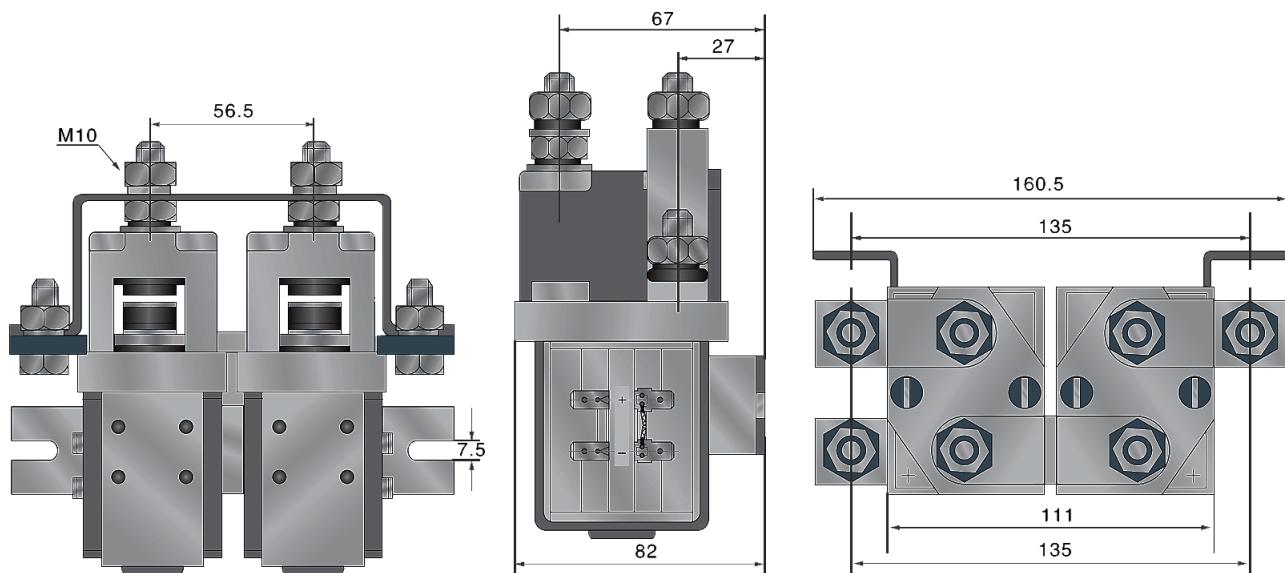
### Circuit Diagram



### Dimensions (mm)

Fig. 3

DSC40-4012-28-\*\*\*



### Circuit Diagram

