

P	LTR	DESCRIPTION	DATE	DWN	APVD
	A	INITIAL DRAWN	20NOV2019	RV	MB

### Electrical Characteristics

#### Operate Sensitivity—

Single-coil form, 100 mW,  
Dual-coil form, 180 mW

#### Contact Arrangement—

4-pole double-throw (4C)

#### Contact Ratings —

DC resistive — 2 amps at 28 volts  
DC inductive — 0.5 amp at 28 volts,  
200 mH  
AC resistive — 0.5 amp at 115 volts  
(enclosure isolated from ground, or  
enclosure and movable contact at same  
potential)

AC — 0.125 amp at 115 volts  
(enclosure at line potential with respect  
to movable contact)

Low-level — 50 µA at 50 mV  
Peak AC or DC

#### Contact Resistance —

0.050 ohms max.;  
0.150 ohms after life tests

#### Life —

100,000 operations at rated loads listed;  
1,000,000 operations at low-level loads

### .150 Grid-space Magnetic Latching Relays Type 3SBM (4PDT)

#### Product Facts

- Low profile... only 0.32 inches high
- Internal diode for coil transient suppression available
- Qualified to MIL-R-39016/31
- Suitable for low pulse operation — 2 ms at rated voltage

### Coil Table (All Values DC)\*

Coil Code Letter	SINGLE COIL, SENSITIVITY 1, (100 mW)				Coil Code Letter	DUAL COIL, SENSITIVITY CODE 2, (180 mW)			
	Coil Resistance @ 25C (Ohms) ± 10%	Maximum Set-Reset Values		Suggested Source Volts‡		Coil Resistance @ 25C (Ohms) ± 10%	Maximum Set-Reset Values		Suggested Source Volts‡
		Calibration Code 5 Voltage (Volts)	Calibration Code 6 Current (mA)				Calibration Code 5 Voltage (Volts)	Calibration Code 6 Current (mA)	
N	57	2.4	42	3.6– 8.5	H	10	1.4	135	2.0– 3.7
R	256	5.1	20	7.6–18	N	37	2.6	70	3.8– 7.2
T	830	9.1	11	14–32	R	145	5.2	35	7.6–14.5
V	1700	13.0	7.7	20–46	T	450	9.0	20	14–25
W	3250	18.0	5.5	28–63	V	975	13.5	13.5	20–35
					W	2140	20.0	9.2	30–54

\*Values listed are factory test and inspection values. User should allow for meter variations.  
‡Applicable over the operating temperature range in circulating air.

### Operating Characteristics

Operate Time — 4 ms max.

Release Time — 4 ms max.

Contact Bounce — 1.5 ms

Dielectric Strength —  
500 volts rms at sea level;  
350 volts rms at 70,000 feet and above

Insulation Resistance —  
1,000 megohms min. over temperature range

### Environmental Characteristics

Vibration — 30 G, 55 to 3,000 Hz

Shock — 150 G at 11 ms

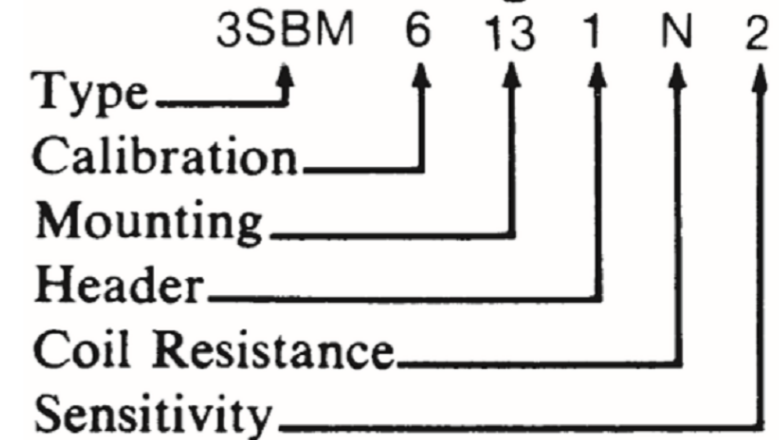
Temperature — -65°C to +125°C

See page 1-62 for Mounting Forms,  
Terminals and Circuit Diagrams.

### Ordering Instructions

Type 3SBM relays can be ordered by specifying the correct catalog number. This number is derived by choosing the proper CODE for each of the six relay characteristics in the order in which the codes are listed.

### Relay Characteristic Catalog No.



THIS DRAWING IS A CONTROLLED DOCUMENT.		DWN RV 20NOV2019			
		CHK RV 20NOV2019			
DIMENSIONS: INCHES		APVD MB 20NOV2019	NAME 3SBM-SERIES		
TOLERANCES UNLESS OTHERWISE SPECIFIED:		PRODUCT SPEC	-		
		APPLICATION SPEC	-		
MATERIAL		WEIGHT	SIZE A3	CAGE CODE	DRAWING NO C-3SBM-SERIES
			RESTRICTED TO		
		CUSTOMER DRAWING	SCALE NTS	SHEET 1 OF 3	REV A



P	LTR	DESCRIPTION	DATE	DWN	APVD
-	-	SEE SHEET 1	-	-	-

### Coil Table Single Diode (All Values DC)\*

### Coil Table Dual Diode (All Values DC)\*

Coil Code Letter	Dual Coil, Sensitivity Code 5 (180 mW)			Suggested Source Volts†
	Coil Resistance @ 25C (ohms) ± 10%	MAX. SET—RESET VALUES		
		Calibration Code 5 Voltage (Volts)	Calibration Code 6 Current (mA)	
H	10	1.4	135	2.0- 3.7
N	37	2.6	70	3.8- 7.2
R	145	5.2	35	7.6-14.5
T	450	9.0	20	14-25
V	975	13.5	3.5	20-35
W	2140	20.0	9.2	30-54

Coil Code Letter	Dual Coil, Sensitivity Code 6 (180 mW)			Suggested Source Volts†
	Coil Resistance @ 25C (ohms) ± 10%**	MAX. SET—RESET VALUES		
		Calibration Code 5 Voltage (Volts)	Calibration Code 6 Current (mA)	
H	10	2.4	135	2.6- 4.1
N	37	3.6	70	3.8- 7.2
R	145	6.2	35	7.6-14.5
T	450	10.0	20	14.0-25.0
V	975	14.5	13.5	20.0-35.0
W	2140	21.0	9.2	30.0-45.0

#### Operating Characteristics

**Operate Time** — 4 ms max.  
**Release Time** — 4 ms max.  
**Contact Bounce** — 1.5 ms  
**Dielectric Strength (Note 1)** — 500 volts rms at sea level; 350 volts rms at 70,000 feet and above  
**Insulation Resistance (Note 1)** — 1,000 megohms min. over temperature range

#### Electrical Characteristics

**Contact Arrangement** — 4-pole double-throw (4C)  
**Operate Sensitivity** — Single-coil form, 100 mW, Dual-coil form, 180 mW per coil  
**Contact Ratings** — DC resistive — 2 amps at 28 volts  
DC inductive — 0.5 amp at 28 volts, 200 mH  
AC resistive — 0.5 amp at 115 volts (enclosure isolated from ground, or enclosure and movable contact at same potential)  
AC — 0.125 amp at 115 volts (enclosure at line potential with respect to movable contact)  
Low-level — 50 µA at 50 mV  
Peak AC or DC  
**Contact Resistance** — 0.050 ohms max.; 0.150 ohms after life test  
**Life** — 100,000 operations at rated loads listed; 1,000,000 operations at low-level loads

#### Environmental Characteristics

**Vibration** — 30 G, 55 to 3,000 Hz  
**Shock** — 150 G at 11 ms  
**Temperature** — -65°C to +125°C

#### Semiconductor Characteristics at 25°C

**Max. Negative Transient** — 1 volt  
**Breakdown Voltage** — 100 Vdc min.  
**Max. Leakage Current** — 1 µA @ 50 Vdc

**Note 1:** Tests for dielectric withstanding voltage and insulation resistance should be made with "coil terminals" shorted together to avoid unnecessary electrical stress to semiconductor elements.

\*Values listed are factory test and inspection values. User should allow for meter variations.  
†Applicable over the operating temperature range in circulating air.  
\*\*Coil resistance cannot be measured by conventional bridge.

### Coil Table (All Values DC)\*

Coil Code Letter	SINGLE COIL, SENSITIVITY 1, (100 mW)			Suggested Source Volts†
	Coil Resistance @ 25C (Ohms) ± 10%	Maximum Set-Reset Values		
		Calibration Code 5 Voltage (Volts)	Calibration Code 6 Current (mA)	
N	57	2.4	42	3.6- 8.5
R	256	5.1	20	7.6-18
T	830	9.1	11	14-32
V	1700	13.0	7.7	20-46
W	3250	18.0	5.5	28-63

Coil Code Letter	DUAL COIL, SENSITIVITY CODE 2, (180 mW)			Suggested Source Volts†
	Coil Resistance @ 25C (Ohms) ± 10%	Maximum Set-Reset Values		
		Calibration Code 5 Voltage (Volts)	Calibration Code 6 Current (mA)	
H	10	1.4	135	2.0- 3.7
N	37	2.6	70	3.8- 7.2
R	145	5.2	35	7.6-14.5
T	450	9.0	20	14-25
V	975	13.5	13.5	20-35
W	2140	20.0	9.2	30-54

\*Values listed are factory test and inspection values. User should allow for meter variations.  
†Applicable over the operating temperature range in circulating air.

## .150 Grid-space Hybrid Magnetic Latching Relays

### Single Diode, Dual Diode Type 3SBM (4PDT)

#### Product Facts

- Low profile... only 0.32 inches high
- Suitable for pulse operation
- Qualified to MIL-R-39016/35
- Qualified to MIL-R-39016/36

THIS DRAWING IS A CONTROLLED DOCUMENT.		DWN RV	20NOV2019		
DIMENSIONS: INCHES		CHK RV	20NOV2019		
TOLERANCES UNLESS OTHERWISE SPECIFIED:		APVD MB	20NOV2019	NAME	
0 PLC ± -		PRODUCT SPEC		3SBM-SERIES	
1 PLC ± -		APPLICATION SPEC		-	
2 PLC ± -		-		-	
3 PLC ± -		SIZE	CAGE CODE	DRAWING NO	RESTRICTED TO
4 PLC ± -		A3	-	3SBM-SERIES	-
ANGLES ± -		WEIGHT		-	
FINISH		CUSTOMER DRAWING		SCALE	SHEET
-		-		NTS	2 of 3
-		-		REV	A

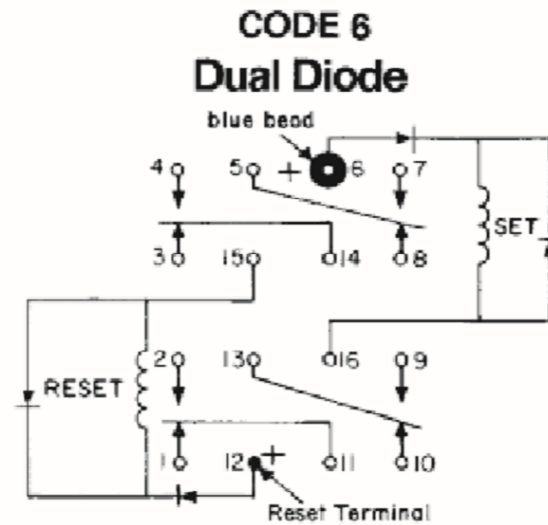
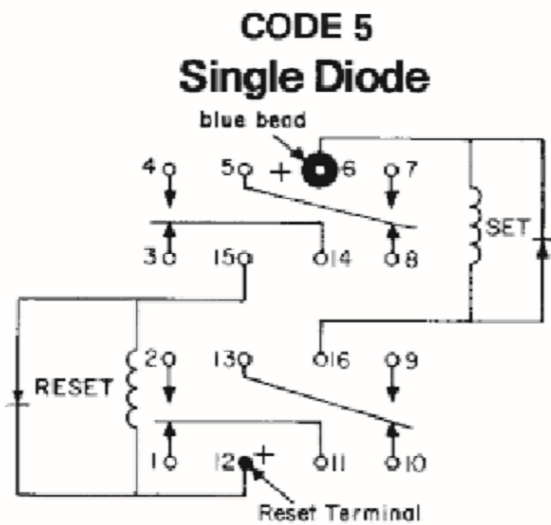
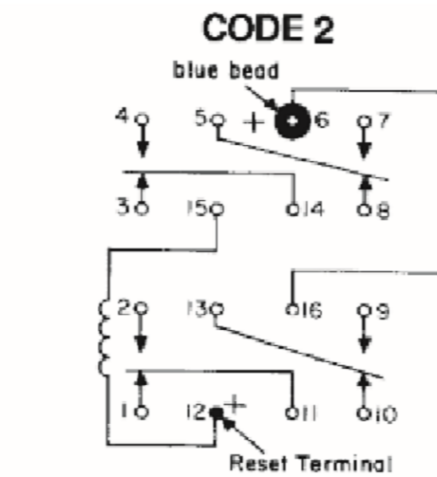
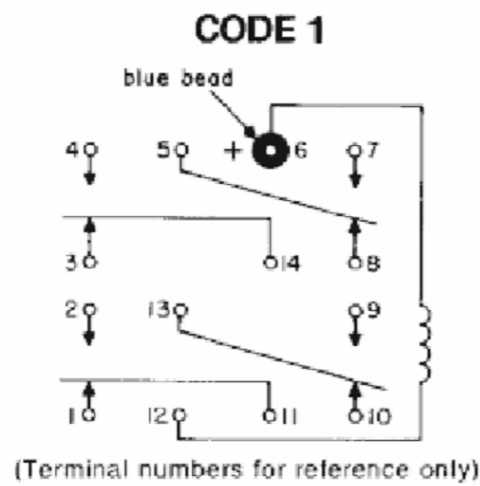
P	LTR	DESCRIPTION	DATE	DWN	APVD
-	-	SEE SHEET 1	-	-	-

### Header and Connection Diagrams

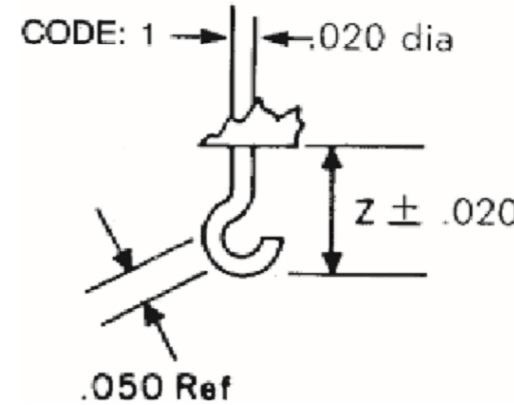
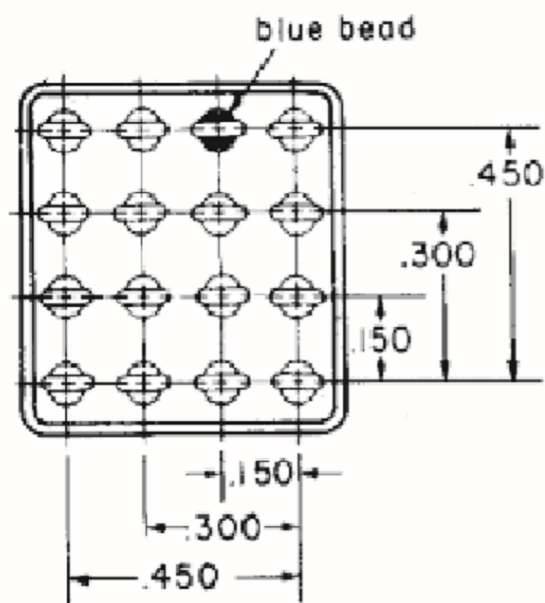
#### Dual Coil

When the SET coil is pulsed with plus polarity on the blue bead, the movable contacts take the position shown in the connection diagram. The contacts are transferred when the RESET coil is pulsed with plus polarity on the reset terminal. A new pulse of the SET coil with plus polarity on the blue bead will transfer the contacts back.

The contacts can also be transferred by applying a pulse of opposite polarity to the coil previously pulsed. However, this method requires slightly more power than the more normal form of operation described in the previous paragraph.



#### Terminal numbers for reference only

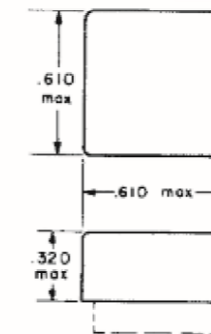


#### Header Types

Type	Z Dimension	Header Code
Solder Hook	0.13	1

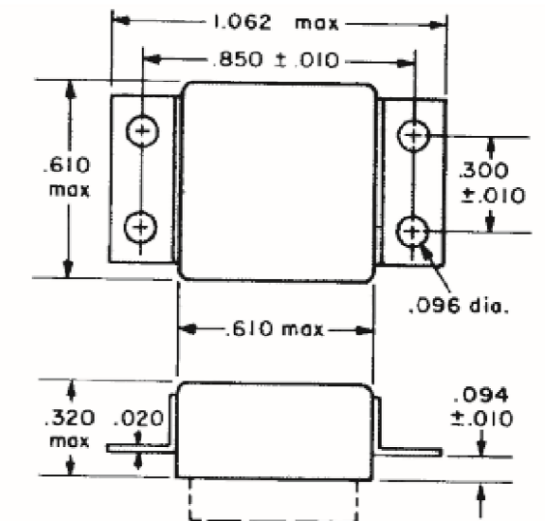
#### Mounting Forms (3SBM)

(Vibration note with each form is acceleration from 55 to 3000 Hz)



ALL DIMENSIONS IN INCHES

TOLERANCES Unless otherwise specified:	
Hundredths	±0.020
Thousandths	±0.005



#### No Mount

Mounting Code	Vibration*
00	30g

\*Assumes relay held securely by potting or other means.

#### End Bracket

Mounting Code	Vibration
13	30g

THIS DRAWING IS A CONTROLLED DOCUMENT.		DWN RV 20NOV2019	<b>TE</b> TE Connectivity														
		CHK RV 20NOV2019															
DIMENSIONS: INCHES		APVD MB 20NOV2019	NAME														
TOLERANCES UNLESS OTHERWISE SPECIFIED:		PRODUCT SPEC	3SBM-SERIES														
<table border="0"> <tr><td>0 PLC</td><td>± -</td></tr> <tr><td>1 PLC</td><td>± -</td></tr> <tr><td>2 PLC</td><td>± -</td></tr> <tr><td>3 PLC</td><td>± -</td></tr> <tr><td>4 PLC</td><td>± -</td></tr> <tr><td>ANGLES</td><td>± -</td></tr> </table>		0 PLC	± -	1 PLC	± -	2 PLC	± -	3 PLC	± -	4 PLC	± -	ANGLES	± -	APPLICATION SPEC	RESTRICTED TO		
0 PLC	± -																
1 PLC	± -																
2 PLC	± -																
3 PLC	± -																
4 PLC	± -																
ANGLES	± -																
MATERIAL		WEIGHT	SIZE A3	CAGE CODE	DRAWING NO												
			C=3SBM-SERIES														
		CUSTOMER DRAWING	SCALE NTS	SHEET 3 OF 3	REV A												