

D E S C R I P T I O NPRODUCT COVERED:

Component - Magnetic Motor Controllers, Model Series VB and VS, may be followed by L, followed by 3 through 110, may be followed by S, followed by B, T, or M, followed by A, B, C, or K, followed by U; may be followed by three digits -500 through -899, may be followed by -E, -5, -OH, -N, -NR, -5R.

GENERAL:

These components are one or two-pole, double-throw magnetic motor controllers with DC operating coils and with normally opened and normally closed contacts. Some of these devices have one or two-pole, single-throw contact arrangement with normally open contacts or normally closed contacts. These components are provided with terminals for direct printed circuit mounting.

Type VS is for use in Industrial applications.

Type VB is for use in Industrial applications and/or Temperature Indicating and Regulating applications.

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MAXIMUM RATINGS:

All except suffixes "OH" and "NR":

VB SERIES -

5 A, 240 V ac, 30 V dc, resistive;  
1/6 hp, 120 V ac, 240 V ac;  
Pilot Duty Code C150

5 A, 240 V ac, 24 V dc, resistive (100,000 cy endurance)  
1/16 hp, 120 V ac, 240 V ac (100,000 cy endurance)

With Suffix "5":

1/4 hp, 240 V ac, 2.9 FLA, 17.4 LRA  
Pilot Duty Code C300  
6 A, 250 V ac, resistive (30,000 cycles)  
1/8 hp, 120 V ac (30,000 cycles)  
4 A, 270 V ac, resistive (30,000 cycles)  
1/20 hp, 270 V ac, 0.8 FLA, 1.2 LRA (30,000 cycles)

With suffix "OH":

1 A, 240 V ac, 24 V dc, resistive

VS SERIES -

All except suffixes "OH" and "NR":

10 A, 240 V ac, 30 V dc, resistive  
1/3 hp, 120 V ac, 240 V ac  
Pilot Duty Code C150

WITH NO SUFFIX:

10 A, 120 V ac, resistive (100,000 cycles endurance) 1/10 hp, 120 V ac,  
240 V ac (100,000 cycles endurance)

10 A, 24 V dc, Resistive (NO Contact of SPDT  
Configuration) (100,000 cycles, end)

5 A, 24 V dc, resistive (NC Contact of SPDT  
Configuration) (100,000 cycles end)

1/10 hp, 270 V ac (30,000 cycles)

7.4 A, 270 V ac, resistive (6,000 cycles endurance)

WITH SUFFIX "E", "5," OR "N," ONLY:

10 A, 120 V ac, 24 V dc, resistive (100,000 cycles endurance)

1/10 hp, 120 V ac, 240 V ac (100,000 cycles endurance) with suffix 5,  
only

10 A, 240 V ac, resistive (100,000 cycles endurance)

7.4 A, 270 V ac, resistive (6,000 cycles endurance)

WITH SUFFIX "OH," ONLY:

1 A, 240 V ac, 24 V dc, resistive

\*

WITH SUFFIX "NR," ONLY: (continued)

15 A, 120 V ac, 24 V dc, resistive  
1/3 hp, 120 V ac, 240 V ac

10 A, 240 V ac, resistive (6000 cycles)  
1/2 hp, 120/240 V ac  
Pilot Duty Code B150

WITH SUFFIX "-5R":

15 A, 24 V dc, 120 V ac, resistive  
10 A, 240 V ac, resistive  
1/2 hp, 120 V ac, 240 V ac  
TV-8, 120 V ac, (normally open form A, only)  
Pilot Duty Code B150

WITH SUFFIXES "T" AND "-5":

N.O. Contact: TV-3, 120 V ac

N.C. Contact: TV-2, 120 V ac

For Use in Temperature-Indicating and Regulating Applications:

VB SERIES WITH OR WITHOUT SUFFIX "E" OR "5" -

5 A, 240 V ac/24 V dc, resistive (100,000 cycles)  
1/16 hp, 120 V/240 V ac (100,000 cycles)

VB SERIES WITH SUFFIX "5" -

6 A, 250 V ac, resistive (30,000 cycles)  
4 A, 270 V ac, resistive (30,000 cycles)  
1/8 hp, 120 V ac (30,000 cycles)  
1/20 hp, 270 V ac (30,000 cycles)

COILS:

3 through 110 V dc

NOMENCLATURE:

|             |           |          |           |          |          |          |          |             |           |
|-------------|-----------|----------|-----------|----------|----------|----------|----------|-------------|-----------|
| PART NUMBER | <u>VS</u> | <u>L</u> | <u>12</u> | <u>S</u> | <u>T</u> | <u>A</u> | <u>U</u> | <u>-500</u> | <u>-5</u> |
|             | 1         | 2        | 3         | 4        | 5        | 6        | 7        | 8           | 9         |

1. Indicates relay type:

VS - 1 pole contact construction

2. Coil type:

Blank: Standard  
L: Latching

3. Indicates coil voltage, in volts:

3 through 110 V dc

4. Indicates coil construction:

None - Standard (approximately 0.72 W coil).  
S - Special type, special coil construction, rated within rated 3  
through 100 V dc (approximately 0.53 W coil).

5. Indicates contact configuration:

T - 1 Form C  
M - 1 Form A  
B - 1 Form B

6. Indicates dust-cover construction:

A - Open type  
B - Fluxfree type  
C - Washable type - with or without sealing tape.  
K - Sealed type

7. Indicates use (for Component Magnetic Motor Controllers):

U - For use as Magnetic Motor Controllers

8. Indicates minor construction variation:

-500 through -899 - Additional digits used for special variations of construction.

A - Variations of coil resistance.

B - Variations of pick-up voltage, non-pick-up voltage, drop-out voltage or hold voltage.

C - Variations of operate time and release time.

D - Variations of coil voltage rated within 3 through 110 V dc.

9. Indicates contact material:

None - Ag-Ni contact may be overlaid with gold

-E - Ag-Ni contact

-5 - Silver cadmium oxide contact

-OH - Ag-Pd contact overlaid with gold

-N - Silver tin oxide indium oxide

\* -NR - Silver tin oxide indium oxide contact or silver tin oxide contact (Type VS only form A only)

-5R - Silver cadmium oxide contact (Type VS only, Form A only)

|                 |           |          |          |          |          |          |          |             |           |
|-----------------|-----------|----------|----------|----------|----------|----------|----------|-------------|-----------|
| <u>PART NO.</u> | <u>VB</u> | <u>L</u> | <u>2</u> | <u>S</u> | <u>T</u> | <u>A</u> | <u>U</u> | <u>-500</u> | <u>-E</u> |
| 1               | 2         | 3        | 4        | 5        | 6        | 7        | 8        | 9           |           |

Part No. may be split and appear on two lines.

1. Indicated relay type

VB - 2-pole contact construction

2. Coil type Blank Standard L: Latching

NOMENCLATURE (Continued):

3. Indicates coil voltage, in volts 3 through 110 V dc.
4. Indicates coil construction None - Standard type (approximately 0.72 W coil) S - Special type, special coil construction rated within 3 through 110 V dc (approximately 0.53 W coil).
5. Indicates contact configuration.
  - T - 2 Form C
  - M - 2 Form A
  - B - 2 Form B
6. Indicates dust-cover construction
  - A - Open type
  - B - Fluxfree type
  - C - Washable type - with or without sealing tape.
  - K - Sealed type
7. Indicates use (for Component Magnetic Motor Controllers)
  - U - for use as Magnetic Motor Controllers
8. Indicates minor construction variation
  - 500 through -899 - additional digits used for special variations of construction.
    - A - Variations of coil resistance.
    - B - Variations of pick-up voltage, non-pick-up voltage, drop-out voltage or hold voltage.
    - C - Variations of operate time and release time.
    - D - Variations of coil voltage rated within 3 through 110 V dc.
9. Indicates contact material
  - None - Ag-Ni contact may be overlaid with gold
    - E - Ag-Ni contact
    - 5 - Silver cadmium oxide contact
    - OH - Ag-Pd contact overlaid with gold
    - N - Silver tin oxide indium oxide

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

\* These components have been judged on the basis of the required spacings in the Standard for Industrial Control Equipment, UL 508 (Table 34.1, Column B) and/or the Standard for Temperature-Indicating and Regulating Equipment, UL 873 (Table 26.1, Column D).

Conditions of Acceptability -

1. These devices should be used within Recognized ratings, as specified above.
2. These devices should be mounted in the intended manner and in enclosures having adequate strength and thickness and with acceptable spacings being provided.
3. The Test Record should be reviewed to determine if tests need to be repeated, giving particular attention to temperature tests.
4. The terminals are to be factory wired, only and the suitability of the connection (including spacings between factory connectors) shall be determined.
5. The temperature test may have to be repeated if these devices are located near heat-producing components in the end-product.

D E S C R I P T I O N

PRODUCT COVERED:

Component - Magnetic Motor Controllers, Model Nos. VB and VS Series, may be followed by L, followed by any number 3 through 110 inclusive, may be followed by S, followed by M, followed by A, B, C or K may be followed by -300 through -499, -1000 through -1199 or -1200 through -1299 inclusive, may be followed by -F, -N, -NR, -VB, or -5R.

GENERAL:

These components are TV-rated, magnetic motor controllers with DC operating coils and with normally open contacts. The VB Series devices have two-pole, single-throw contact arrangement. The VS Series devices are single-pole, single-throw. Both types are provided with terminals for direct printed wiring board mounting. These components are for use in electronic data processing equipment, office appliances and business equipment or television receivers, audio or video products and similar equipment.

\*

RATINGS:

CONTACTS

Model Series VB -

Without Suffix

TV-3, 120 V ac; 5 A, 24 V dc/240 V ac Res; 1/6 hp, 120 V/240 V ac

Pilot Duty Code C150

\* TV-3, 240 V ac

With Suffix -F,

TV-3, 120 V ac; 5 A, 24 V dc/240 V ac Res; 1/6 hp, 120 V/240 V ac

Pilot Duty Code C150

With Suffix -N,

TV-3, 120 V ac; 5 A, 24 V dc/240 V ac Res; 1/6 hp, 120 V/240 V ac

Pilot Duty Code C150

TV-5, 120 V ac

Model Series VS -

Without Suffix

TV-5, 120 V ac; 10 A, 24 V dc/240 V ac Res; 1/3 hp, 120 V/240 V ac

Pilot Duty Code C150

With Suffix -N,

TV-5, 120 V ac; 10 A, 24 V dc/240 V ac Res; 1/3 hp, 120 V/240 V ac

Pilot Duty Code C150

With Suffix -NR,

TV-8, 120 V ac; 15 A max, 24 V dc/120 V ac Res; 1/3 hp, 120 V/240 V ac; 10 A, 240 V ac, Res;

1/2 hp, 120 /240 V ac

Pilot Duty Code B150

With Suffix -5R,  
TV-8, 120 V ac; 15 A, 24 V dc, 120 V ac Resistive, 10 A, 240  
V ac, Resistive 1/2 hp, 120 V ac, 240 V ac Pilot Duty Code  
B150

With Suffix -VB,  
TV-5, 120 V ac

Coils - 3 through 110 V dc.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

This component has been judged on the basis of the required spacings in the Standard for Industrial Control Equipment, (UL 508), Paragraph 18.1, which would cover the component itself if submitted for unrestricted Listing.

Conditions of Acceptability -

1. These devices should be used within Recognized ratings as specified above.
2. These devices should be mounted in the intended manner and in enclosures having adequate strength and thickness and with acceptable spacings being provided.
3. The test record should be reviewed to determine if tests need to be repeated, giving particular attention to Temperature Tests.
4. The terminals are to be factory wired only and the suitability of the connection (including spacings between factory connectors) shall be determined.