

**SPDT, DPDT, DPST-N.O.,
SPST-N.C.-D.B. & SPST-N.O.-D.M.,
10 TO 50 AMPS**



UL Listed
File No. E43641



COMPLIES WITH REQUIREMENTS OF

- * IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
- * IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
- * CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

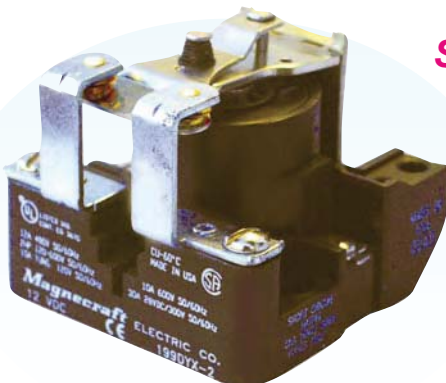
**MANUFACTURED UNDER
ISO 9002**

Optional metal enclosure
available, see page 12

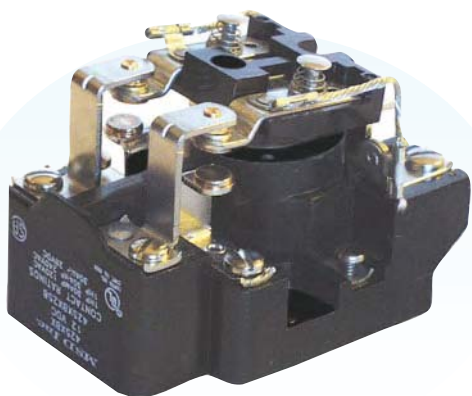
**CLASS "B" COIL
INSULATION SYSTEM**



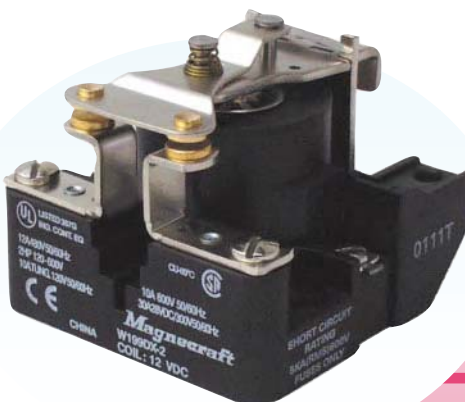
199 SPDT
30 AMP, 1-1/2 Hp



199 SPST-NC-DB
30 AMPS, 2 Hp



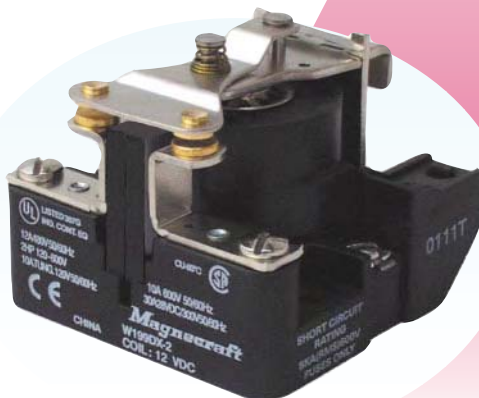
199 DPDT
30 AMP, 1-1/2 Hp PER POLE
2 Hp-2 POLE SWITCHING



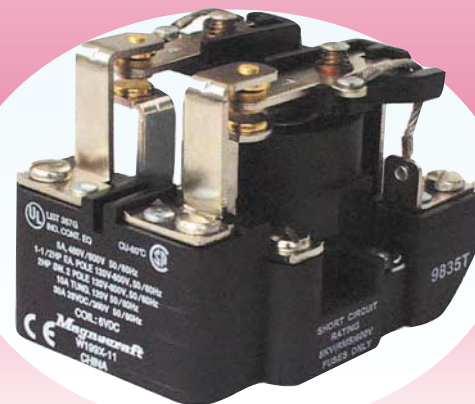
199 SPST-NO-DM
30 AMPS, 2 Hp



199 DPST-NO
30 AMPS, 1-1/2 Hp PER POLE
2 Hp - 2 POLE SWITCHING



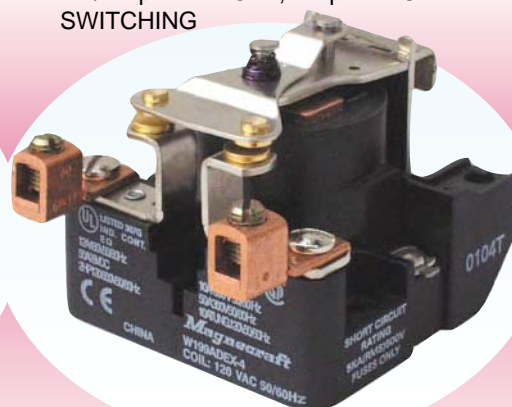
199DB SPST-NO-DM
WITH MAGNETIC BLOWOUT FOR DC ARC
QUENCHING 20 AMPS, 110 VDC



199H DPDT
40 AMPS GENERAL PURPOSE,
1-1/2 Hp PER POLE; 2 Hp - 2 POLE
SWITCHING



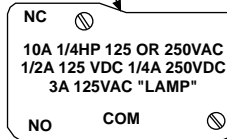
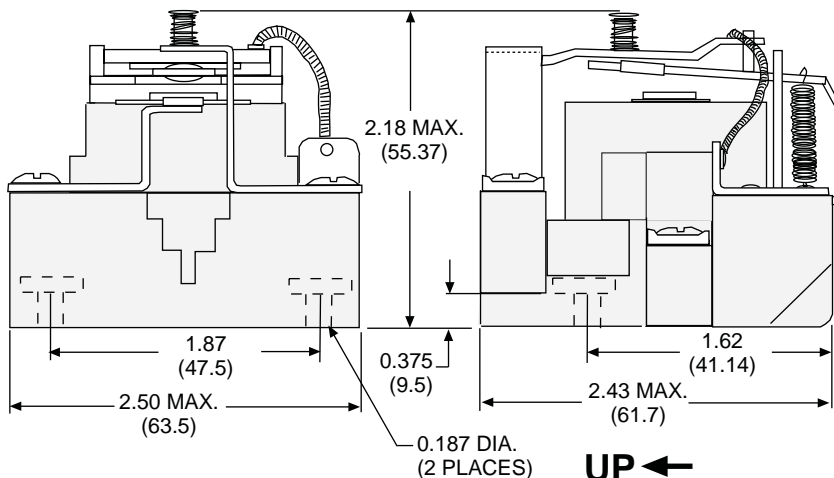
199B DPDT
WITH MAGNETIC BLOWOUT FOR DC ARC
QUENCHING 10 AMPS, 110 VDC



199DE SPST-NO-DM
WITH BOX TERMINALS.
50 AMPS, 2 Hp

SPDT, 30 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS SHOWN IN PART NUMBER CHART



Optional metal enclosure available, see page 12



UP ←

VERTICAL MOUNTING RECOMMENDED WITH CONTACTS UP

GENERAL SPECIFICATIONS

COIL

- Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
- Dropout Voltage: 10% of nominal voltage or more @ 25°C
- Coil Resistance: ± 10% @ 25°C
- Coil Power: 2.0 Watts DC., 10 VA (60Hz) AC @ 25°C
- Max. Coil Dissipation: DC Coils-4 watts max.
- Duty: Continuous

CONTACTS

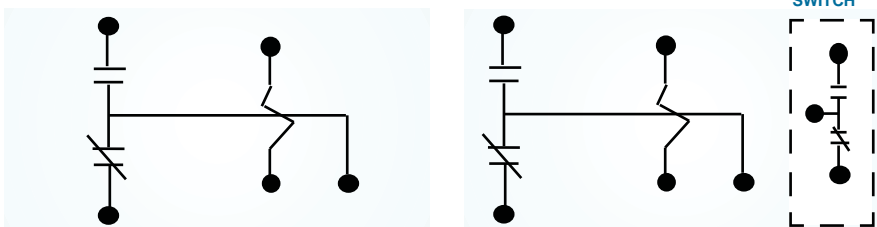
- Contact Material: Silver cadmium oxide, gold flashed
5/16" diameter standard
- Contact Rating: 30 amps up to 300 VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60HZ 0.75 pf
Inductive load. 1-1/2 Hp motor load @ 120 thru
600 VAC, 50/60 Hz. 30 Amps @ 28 VDC
resistive load. 15 Amps tungsten @ 120 VAC
NEMA A 600 pilot duty 50/60Hz
- Auxiliary Switch: 10 amps 1/4 Hp 125 or 250VAC
1/2 amp 125 VDC 1/4 amp 250 VDC
3 amps 125 VAC "Lamp"

TIMING

- Operate Time: 40 milliseconds max. @ nominal voltage
- Release Time: 30 milliseconds max. @ nominal voltage

WIRING DIAGRAM

(VIEWED FROM PIN END)



DIELECTRIC STRENGTH

- Between Open Contacts: 1500 V rms
- Mutually Insulated
- Conductive elements: 2200 V rms

TEMPERATURE

- Operating Range: (AC) -30°C to +50°C,
(DC) -30°C +60°C
- Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY

- Electrical: 100,000 operations
- Mechanical: @ rated resistive load
1,000,000 operations @ no load

MISCELLANEOUS

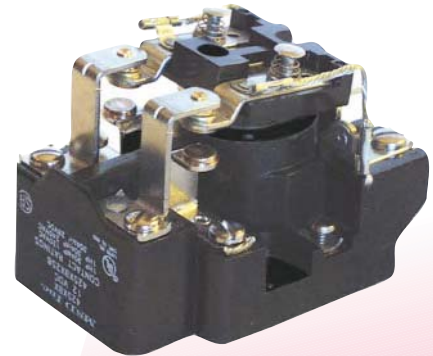
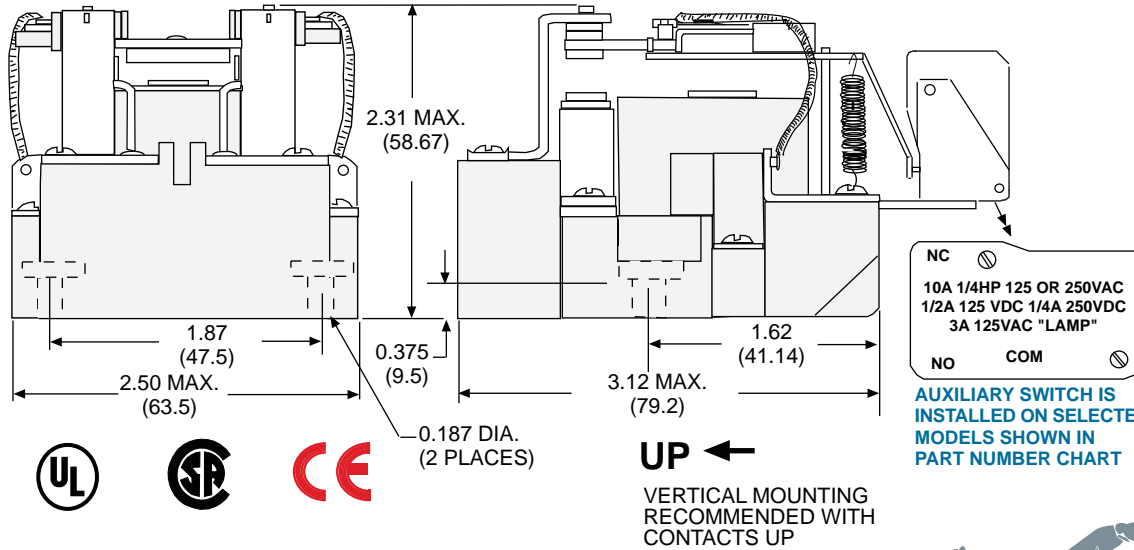
- Coil Terminals: 6-32 combination head screws
- Load Terminals: 8-32 combination head screws
- Base Material: Molded phenolic,
UL recognized (QMFZ2)
- Weight: 227 grams approx.

COIL MEASURED @ 25°C

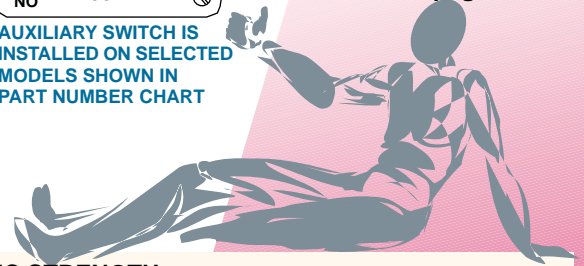
STANDARD PART NUMBERS	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199AX-4	120 VAC	290 Ω
AC OPERATED WITH SPDT AUXILIARY SWITCH		
W199AMX-4	120 VAC	290 Ω
DC OPERATED		
W199X-2	12 VDC	70 Ω
W199X-3	24 VDC	290 Ω
DC OPERATED WITH SPDT AUXILIARY SWITCH		
W199MX-2	12 VDC	70 Ω
W199MX-3	24 VDC	290 Ω

DPDT, 30 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Optional metal enclosure available, see page 12



GENERAL SPECIFICATIONS

COIL

- Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
- Dropout Voltage: 10% of nominal voltage or more @ 25°C
- Coil Resistance: ± 10% @ 25°C
- Coil Power: 2.0 watts DC., 10 VA (60Hz) AC @ 25°C
- Max. Coil Dissipation: DC coils-4 matts max.
- Duty: Continuous.

CONTACTS

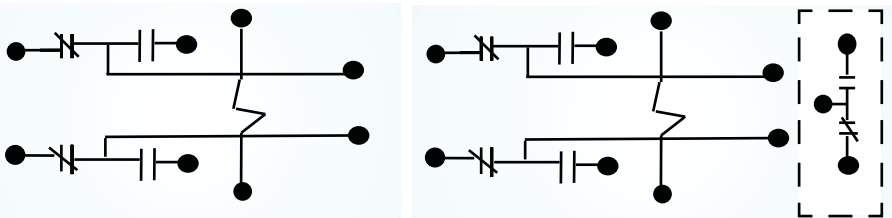
- Contact Material: Silver cadmium oxide, gold flashed 5/16" diameter standard.
- Contact Rating: 30 amps up to 300 VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60Hz 0.75 pf inductive load. 1-1/2 Hp motor load each pole @ 120 thru 600 VAC, 50/60 Hz. 2 Hp motor load @ 200 to 600 VAC. when using two poles to switch both sides of load.
30 amps @ 28 VDC resistive load
15 amps tungsten @ 120 VAC
NEMA A 600 pilot duty 50/60Hz
- Auxiliary Switch: 10 amps 1/4 Hp 125 or 250VAC
1/2 amp 125 VDC 1/4 amp 250 VDC
3 amps 125 VAC "Lamp"

TIMING

- Operate Time: 40 milliseconds max. @ nominal voltage
- Release Time: 30 milliseconds max. @ nominal voltage

WIRING DIAGRAM

(VIEWED FROM PIN END)



OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

DIELECTRIC STRENGTH

- Between Open Contacts: 1500 V rms
- Mutually Insulated
- Conductive elements: 2200 V rms

TEMPERATURE

- Operating Range: (AC) -30°C to +50°C, (DC) -30°C +60°C
- Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY

- Electrical: 100,000 operations @ rated resistive load
- Mechanical: 1,000,000 operations @ no load

MISCELLANEOUS

- Coil Terminals: 6-32 combination head screws
- Load Terminals: 8-32 combination head screws
- Base Material: Molded phenolic, UL recognized (QMFZ2)
- Weight: 311 grams approx.

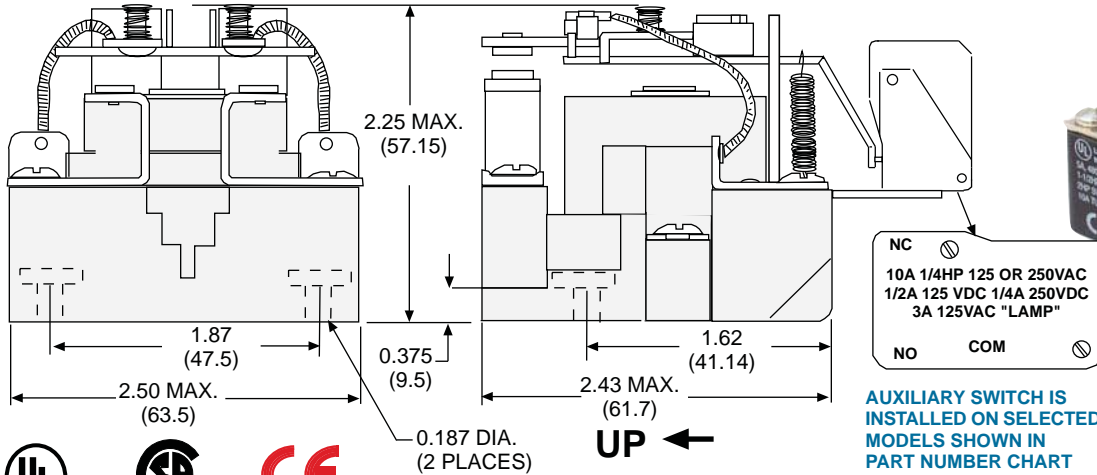
COIL MEASURED @ 25°C

STANDARD PART NUMBERS	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199AX-13	24 VAC	12 Ω
W199AX-14	120 VAC	290 Ω
W199AX-15	240 VAC	1200 Ω
AC OPERATED WITH SPDT AUXILIARY SWITCH		
W199AMX-63	24 VAC	12 Ω
W199AMX-64	120 VAC	290 Ω
W199AMX-65	240 VAC	1200 Ω
DC OPERATED		
W199X-11	6 VDC	18 Ω
W199X-12	12 VDC	70 Ω
W199X-13	24 VDC	290 Ω
W199X-14	110 VDC	6000 Ω
DC OPERATED WITH SPDT AUXILIARY SWITCH		
W199MX-49	6 VDC	18 Ω
W199MX-50	12 VDC	70 Ω
W199MX-51	24 VDC	290 Ω
W199MX-52	110 VDC	6000 Ω

DPST-N.O., 30 AMPS

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Optional metal enclosure available, see page 12

AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS SHOWN IN PART NUMBER CHART

VERTICAL MOUNTING RECOMMENDED WITH CONTACTS UP



GENERAL SPECIFICATIONS

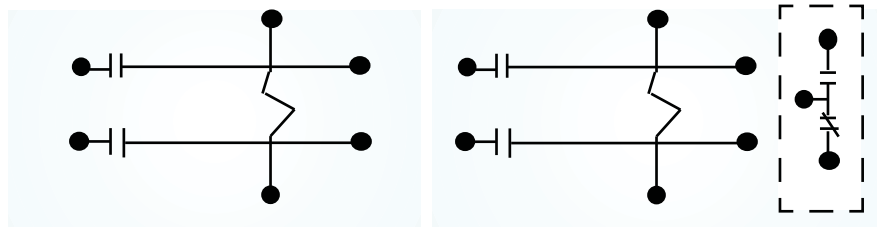
COIL
 Pull-in Voltage: 85% of nominal voltage or less for AC coils, 80% of nominal voltage or less for DC coils
 Dropout Voltage: 10% of nominal voltage or more @ 25°C
 Coil Resistance: ± 10% @ 25°C
 Coil Power: 2.0 Watts DC., 10 VA (60Hz) AC @ 25°C
 Max. Coil Dissipation: DC coils 4 watts max
 Duty: Continuous.

CONTACTS
 Contact Material: Silver cadmium oxide, gold flashed.
 Contact Rating: 30 amps up to 300 VAC, 50/60Hz, 5 amps @ 480/600VAC, 0.75 pf Inductive load. 1-1/2 Hp motor load (each pole) @ 120 thru 600 VAC, 50/60 Hz. 2 Hp motor load @ 200 thru 600 VAC, 50/60 Hz only when using two poles to switch both sides of load. 30 amps @ 28 VDC resistive load each poles. 15 amps tungsten @ 120 VAC. NEMA A600 pilot duty 50/60Hz.
 Auxiliary Switch: 10 amps 1/4 Hp 125 or 250VAC, 1/2 amp 125 VDC 1/4 amp 250 VDC, 3 amps 125 VAC "Lamp"

TIMING
 Operate Time: 40 milliseconds max. @ nominal voltage
 Release Time: 30 milliseconds max. @ nominal voltage

WIRING DIAGRAM

(VIEWED FROM PIN END)



DIELECTRIC STRENGTH

Between Open Contacts: 1500 V rms
 Mutually Insulated
 Conductive elements: 2200 V rms

TEMPERATURE

Operating Range: (AC) -30°C to +50°C, (DC) -30°C to +60°C
 Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY

Electrical: 100,000 operations @ rated resistive load
 Mechanical: 1,000,000 operations @ no load

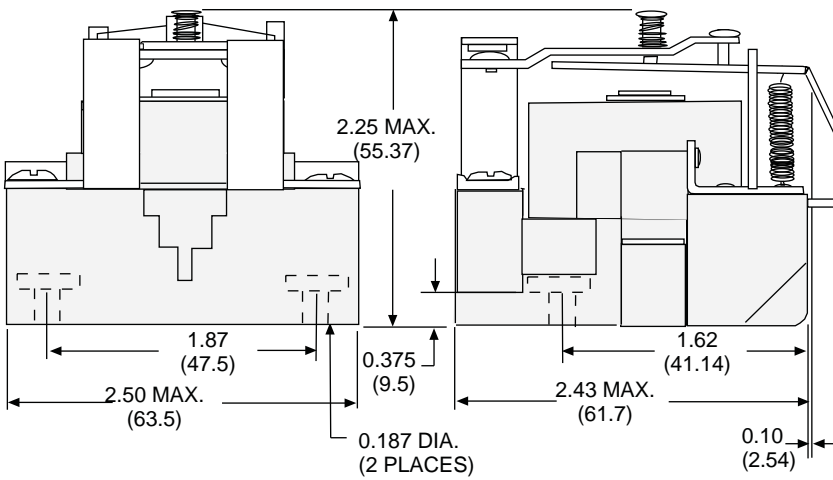
MISCELLANEOUS

Coil Terminals: 6-32 combination head screws
 Load Terminals: 8-32 combination head screws
 Base Material: Molded phenolic, UL recognized (QMFZ2)
 Weight: 255 grams approx

STANDARD PART NUMBERS	COIL MEASURED @ 25°C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199AX-8	24 VAC	12 Ω
W199AX-9	120 VAC	290 Ω
W199AX-10	240 VAC	1200 Ω
AC OPERATED WITH SPDT AUXILIARY SWITCH		
W199AMX-33	24 VAC	12 Ω
W199AMX-34	120 VAC	290 Ω
W199AMX-35	240 VAC	1200 Ω
DC OPERATED		
W199X-7	12 VDC	70 Ω
W199X-8	24 VDC	290 Ω
DC OPERATED WITH SPDT AUXILIARY SWITCH		
W199MX-26	12 VDC	70 Ω
W199MX-27	24 VDC	290 Ω

SPST-N.C.- D. B. OR SPST-N.O.- D.M., 30 AMPS

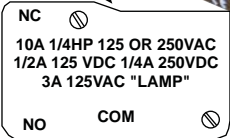
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



**SPST
N.C.- D.B.**



Optional metal enclosure available, see page 12



AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS SHOWN IN PART NUMBER CHART

UP ←
VERTICAL MOUNTING RECOMMENDED WITH CONTACTS UP



GENERAL SPECIFICATIONS

COIL
Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
Dropout Voltage: 10% of nominal voltage or more @ 25°C
Coil Resistance: ± 10% @ 25°C
Coil Power: 2.0 watts DC., 10 VA (60Hz) AC @ 25°C
Max. Coil Dissipation: DC coils - 4 watts max
Duty: Continuous

CONTACTS
Contact Material: Silver cadmium oxide, gold flashed.
5/16" diameter standard.
Contact Rating: 30 amps up to 300 VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60Hz
12 amps @ 480 VAC, 10 amps @ 600 VAC, 50/60Hz 0.75 pf inductive load.
2 Hp motor load @ 120 thru 600 VAC, 50/60 Hz. 30 amps @ 28 VDC resistive load.
15 amps tungsten @ 120 VAC
NEMA A600 pilot duty 50/60Hz
10 amps @ 120/240 VAC, 50/60 Hz
1/4Hp. 120/240 VAC, 50/60 Hz
1/2 amps @ 125 VDC, 1/4 amp @ 250 VDC

Auxiliary Switch: 10 amps 1/4 Hp 125 or 250VAC
1/2 amp 125 VDC 1/4 amp 250 VDC
3 amps 125 VAC "Lamp"

TIMING
Operate Time: 40 milliseconds max. @ nominal voltage
Release Time: 30 milliseconds max. @ nominal voltage

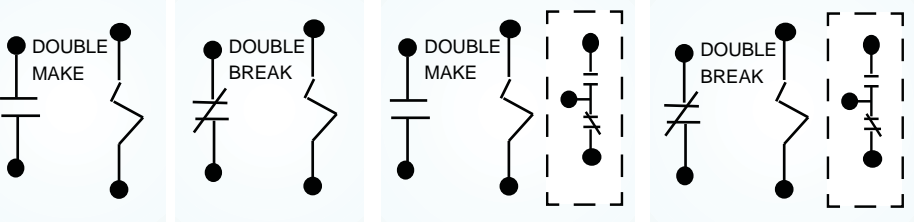
DIELECTRIC STRENGTH
Between Open Contacts: 1500 V rms
Mutually Insulated
Conductive elements: 2200 V rms

TEMPERATURE
Operating Range: (AC) -30°C to +50°C,
(DC) -30°C +60°C
Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY
Electrical: 100,000 operations @ rated resistive load
Mechanical: 1,000,000 operations @ no load

MISCELLANEOUS
Coil Terminals: 6-32 combination head screws
Load Terminals: 8-32 Ccombination head screws
Base Material: Molded phenolic, UL recognized (QMFZ2)
Weight: 227 grams approx.

WIRING DIAGRAM (VIEWED FROM PIN END)

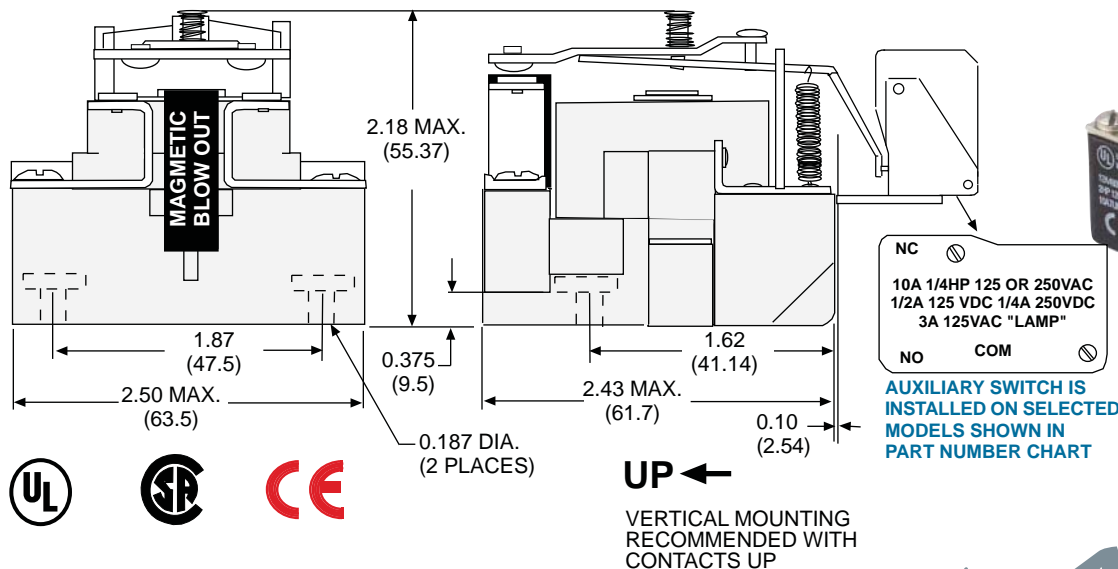


OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

STANDARD PART NUMBERS	CONTACT CONFIGURATION	COIL MEASURED @ 25°C	
		NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED			
W199ADX-4	SPST-NO-DM	120 VAC	290 Ω
W199ADX-5	SPST-NO-DM	240 VAC	1200 Ω
AC OPERATED WITH SPDT AUXILIARY SWITCH			
W199ADMX-4	SPST-NO-DM	120 VAC	290 Ω
W199ADMX-5	SPST-NO-DM	240 VAC	1200 Ω
DC OPERATED			
W199DYX-2	SPST-NC-DB	12 VDC	70 Ω
W199DX-2	SPST-NO-DM	12 VDC	70 Ω
W199DX-3	SPST-NO-DM	24 VDC	290 Ω
DC OPERATED WITH SPDT AUXILIARY SWITCH			
W199DYMx-2	SPST-NC-DB	12 VDC	70 Ω
W199DMX-2	SPST-NO-DM	12 VDC	70 Ω
W199DMX-3	SPST-NO-DM	24 VDC	290 Ω

**SPST-N. O., 30 AMPS
20 AMPS @ 110 VDC**

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Optional metal enclosure available, see page 12

AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS SHOWN IN PART NUMBER CHART



GENERAL SPECIFICATIONS

COIL

- Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
- Dropout Voltage: 10% of nominal voltage or more @ 25°C
- Coil Resistance: ± 10% @ 25°C
- Coil Power: 10 VA (60Hz) AC @ 25°C
- Max. Coil Dissipation: DC coils-4 watts max.
- Duty: Continuous.

CONTACTS

- Contact Material: Silver cadmium oxide, gold flashed.
5/16" diameter standard.
- Contact Rating: 30 amps up to 300 VAC, 50/60Hz
12 amps @ 480 VAC, 10 Amps @ 600 VAC,
50/60Hz 0.75 pf Inductive load. 1-1/2 Hp motor load @ 120 thru 600 VAC, 50/60 Hz. 30 amps @ 28 VDC resistive load
15 amps tungsten @ 120 VAC
NEMA A600 pilot duty 50/60Hz
- DC Rating: 20 Amps @ 110 VDC, resistive; 8 amps @ 220 VDC resistive, 4 Amps @ 325VDC resistive. 2 amps @ 500 VDC resistive. For inductive loads, contacts must be derated accordingly. Capacitive loads must have current limiting to insure that inrush current will not exceed 100 amps.
- Auxiliary Switch: 10 amps 1/4 Hp 125 or 250VAC
1/2 amp 125 VDC 1/4 amp 250 VDC
3 amps 125 VAC "Lamp"

TIMING

- Operate Time: 40 milliseconds max. @ nominal voltage
- Release Time: 30 milliseconds max. @ nominal voltage

DIELECTRIC STRENGTH

- Between Open Contacts: 1500 V rms
- Mutually Insulated
- Conductive elements: 2200 V rms

TEMPERATURE

- Operating Range: (AC) -30°C to +50°C, (DC) -30°C to +60°C
- Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY

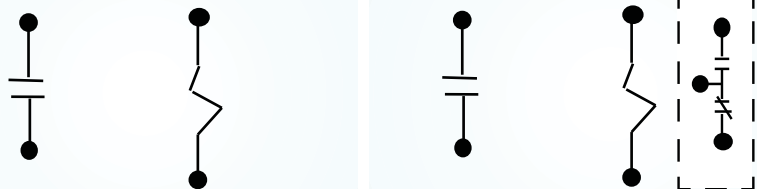
- Electrical: 100,000 operations @ rated resistive load
- Mechanical: 1,000,000 operations @ no load

MISCELLANEOUS

- Coil Terminals: 6-32 combination head screws
- Load Terminals: 8-32 combination head screws
- Base Material: Molded phenolic, UL recognized (QMFZ2)
- Weight: 227 grams approx.

WIRING DIAGRAM

(VIEWED FROM PIN END)

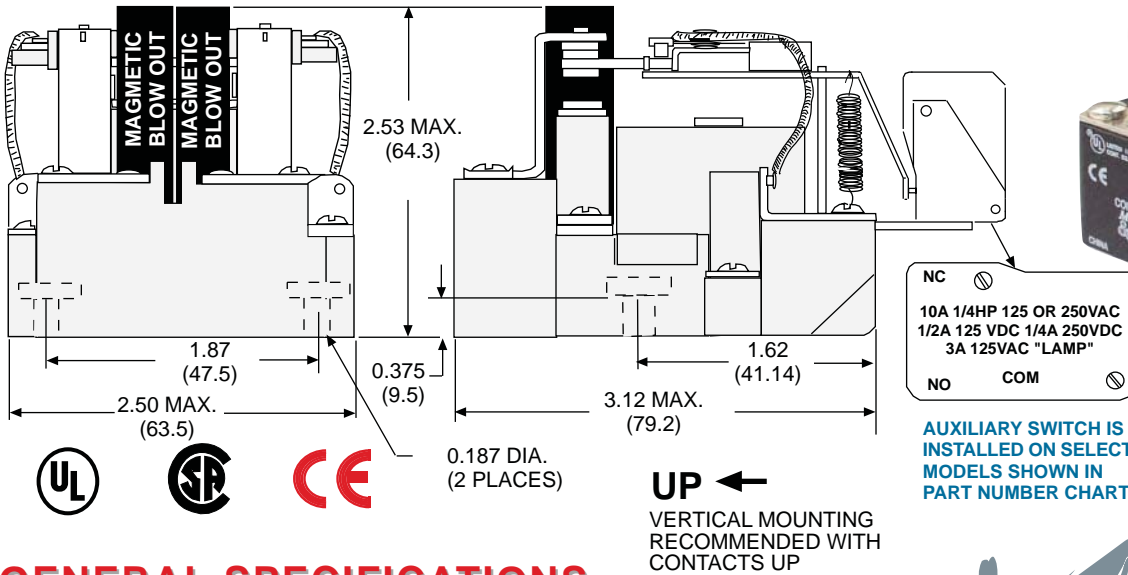


OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

STANDARD PART NUMBERS	COIL MEASURED @ 25°C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199ADBX-4	120 VAC	290 Ω
AC OPERATED WITH SPDT AUXILIARY SWITCH		
W199ADBMX-4	120 VAC	290 Ω
DC OPERATED		
W199DBX-3	24 VDC	290 Ω
W199DBX-6	48 VDC	1200 Ω
DC OPERATED WITH SPDT AUXILIARY SWITCH		
W199DBMX-3	24 VDC	290 Ω
W199DBMX-2	48 VDC	1200 Ω

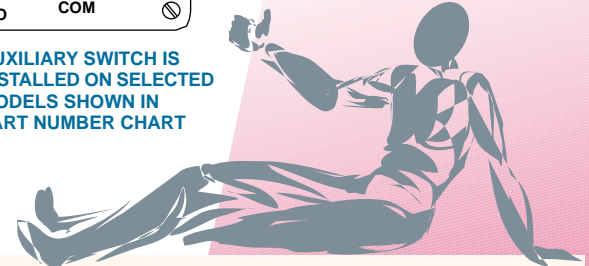
DPDT, 30 AMPS 10 AMPS @ 110 VDC

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Optional metal enclosure available, see page 12

AUXILIARY SWITCH IS INSTALLED ON SELECTED MODELS SHOWN IN PART NUMBER CHART



GENERAL SPECIFICATIONS

COIL

- Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
- Dropout Voltage: 10% of nominal voltage or more @ 25°C
- Coil Resistance: ± 10% @ 25°C
- Coil Power: 2.0 watts DC., 10 VA (60Hz) AC @ 25°C
- Max. Coil Dissipation: DC coils - 4 watts max.
- Duty: Continuous.

CONTACTS

- Contact Material: Silver cadmium oxide, gold flashed. 5/16" diameter standard.
- Contact Rating: 30 amps up to 300VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60Hz 0.75 pf Inductive load. 1-1/2 Hp motor load (each pole) @ 120 thru 600 VAC, 50/60 Hz. 2 Hp motor load @ 120 thru 600 VAC, 50/60 Hz only when using two poles to switch both sides of load. 30 amps @ 28 VDC resistive load.
15 amps tungsten @ 120 VAC NEMA A 600 pilot duty 50/60Hz
- DC Rating: 10 amps @110VDC, resistive; 4 Amps @220VDC, resistive, 2 amps @ 325VDC resistive. For inductive loads, contacts must be derated accordingly. Capacitive loads must have current limiting to insure that inrush current will not exceed 50 amps
- Auxiliary Switch: 10 amps 1/4 Hp 125 or 250VAC
1/2 amp 125 VDC 1/4 amp 250 VDC
3 amps 125 VAC "Lamp"

DIETIMING

- Operate Time: 40 milliseconds max. @ nominal voltage
- Release Time: 30 milliseconds max. @ nominal voltage.

ELECTRIC STRENGTH

- Between Open Contacts: 1500 V rms
- Mutually Insulated
- Conductive elements: 2200 V rms

TEMPERATURE

- Operating Range: (AC) -30°C to +50°C,
(DC) -30°C to +60°C
- Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY

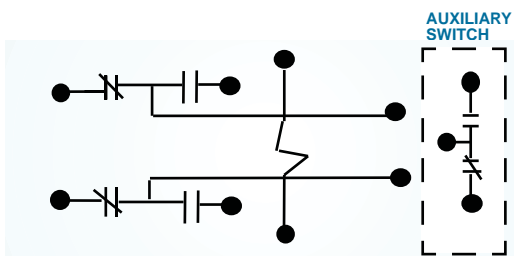
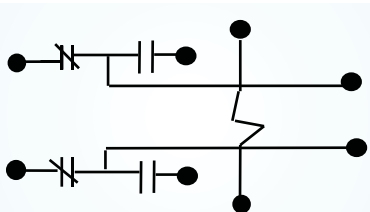
- Electrical: 100,000 operations @ rated resistive load
- Mechanical: 1,000,000 operations @ no load

MISCELLANEOUS

- Coil Terminals: 6-32 combination head screws
- Load Terminals: 8-32 combination head screws
- Base Material: Molded phenolic, UL recognized (QMF)
- Weight: 312 grams approx.

WIRING DIAGRAM

(VIEWED FROM PIN END)

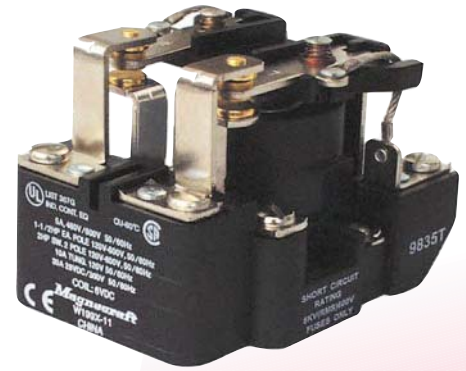
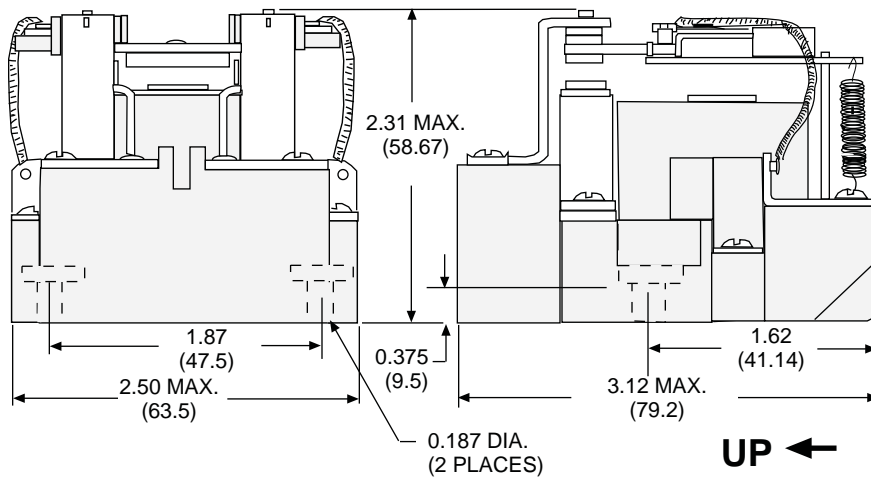


OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

STANDARD PART NUMBERS	COIL MEASURED @ 25°C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199ABX-14	120 VAC	290 Ω
AC OPERATED WITH SPDT AUXILIARY		
W199ABMX-7	120 VAC	290 Ω
DC OPERATED		
W199BX-13	24 VDC	290 Ω
W199BX-14	110 VDC	6000 Ω
DC OPERATED WITH SPDT AUXILIARY		
W199BMX-13	24 VDC	290 Ω
W199BMX-14	110 VDC	6000 Ω

DPDT, 40 AMPS

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Optional metal enclosure available, see page 12



UP ←

VERTICAL MOUNTING RECOMMENDED WITH CONTACTS UP



GENERAL SPECIFICATIONS

COIL

- Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
- Dropout Voltage: 10% of Nominal voltage or more @ 25°C
- Coil Resistance: ± 10% @ 25°C
- Coil Power: 2.0 watts DC., 10 VA (60Hz) AC @ 25°C
- Max. Coil Dissipation: DC coils-4 watts max
- Duty: Continuous

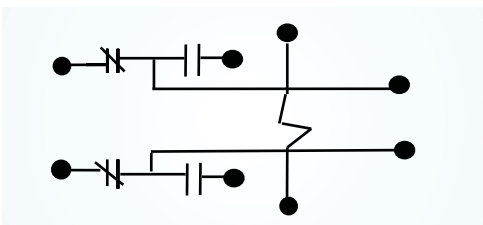
CONTACTS

- Contact Material: Silver cadmium oxide, gold flashed.
5/16" diameter standard
- Contact Rating: 40 amps up to 300 VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60Hz 0.75 pf inductive load. 1-1/2 Hp motor load esch pole @ 120 thru 600 VAC, 50/60 Hz.
2 Hp motor load @ 200 to 600 VAC when using two poles to switch both sides of load.
- 40 amps @ 28 VDC resistive load
- 15 amps tungsten @ 120 VAC

TIMING

- Operate Time: 40 milliseconds max. @ nominal voltage
- Release Time: 30 milliseconds max. @ nominal voltage

WIRING DIAGRAM
(VIEWED FROM PIN END)



DIELECTRIC STRENGTH

- Between Open Contacts: 1500 V rms
- Mutually Insulated
- Conductive elements: 2200 V rms

TEMPERATURE

- Operating Range: (AC) -30°C to +50°C,
(DC) -30°C +60°C
- Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY

- Electrical: 100,000 operations @ rated resistive load
- Mechanical: 1,000,000 operations @ no load

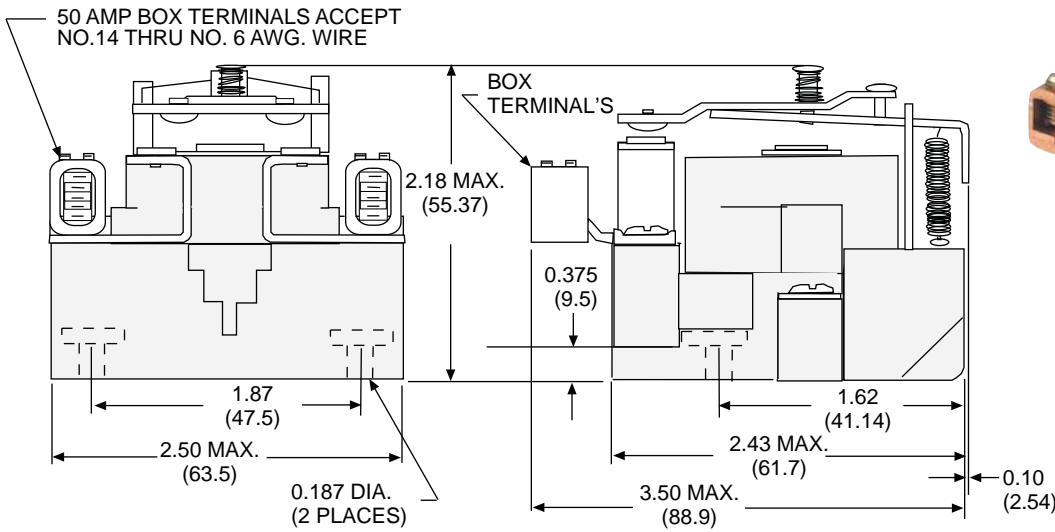
MISCELLANEOUS

- Coil Terminals: 6-32 combination head screws
- Load Terminals: 8-32 combination head screws
- Base Material: Molded phenolic, UL recognized (QMFZ2)
- Weight: 311 grams approx.

AUXILIARY CONTACTS AND OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

STANDARD PART NUMBERS	COIL MEASURED @ 25°C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199AHX-13	24 VAC	12 Ω
W199AHX-14	120 VAC	290 Ω
W199AHX-15	240 VAC, 60 Hz	1200 Ω
DC OPERATED		
W199HX-13	24 VDC	290 Ω
W199HX-14	110 VDC	6000 Ω

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Optional metal enclosure available, see page 12



UP ←
VERTICAL MOUNTING
RECOMMENDED WITH
CONTACTS UP

GENERAL SPECIFICATIONS

COIL
Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
Dropout Voltage: 10% of nominal voltage or more @ 25°C
Coil Resistance: ± 10% @ 25°C
Coil Power: 2.0 watts DC., 10 VA (60Hz) AC @ 25°C
Max. Coil Dissipation: DC coils-4 watts max.
Duty: Continuous.

CONTACTS
Contact Material: Silver cadmium oxide, gold flashed.
5/16" diameter standard.
Contact Rating: 50 amps up to 300VAC, 50/60Hz
50 amps @ 28 VDC resistive load,
loads must have current limiting to insure
that inrush current will not exceed 100 amps
NEMA A600 pilot duty 50/60Hz

TIMING
Operate Time: 40 milliseconds max. @ nominal voltage
Release Time: 30 milliseconds max. @ nominal voltage.

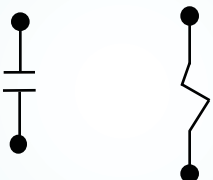
DIELECTRIC STRENGTH
Between Open Contacts: 1500 V rms
Mutually Insulated
Conductive elements: 2200 V rms

TEMPERATURE
Operating Range: (AC) -30°C to +50°C,
(DC) -30°C to +60°C
Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY
Electrical: 100,000 operations
@ rated resistive load
Mechanical: 1,000,000 operations @ no load

MISCELLANEOUS
Coil Terminals: 6-32 Combination head screws
Load Terminals: AMG 2-12 Pressure wire connector
Base Material: Molded phenolic, UL recognized (QMFZ2)
Weight: 227 grams approx.

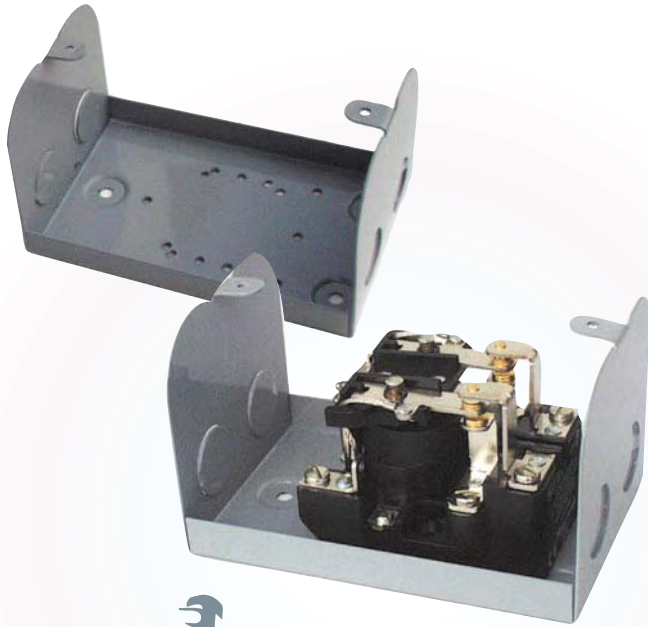
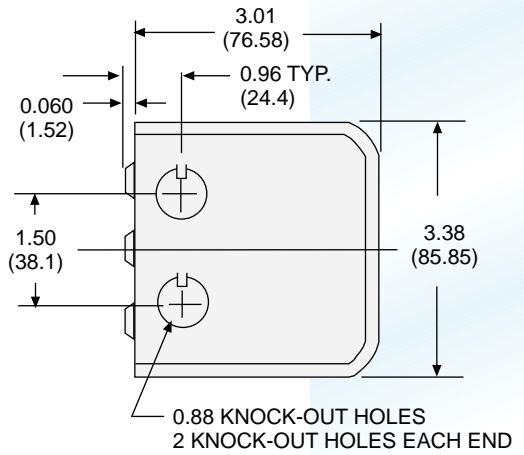
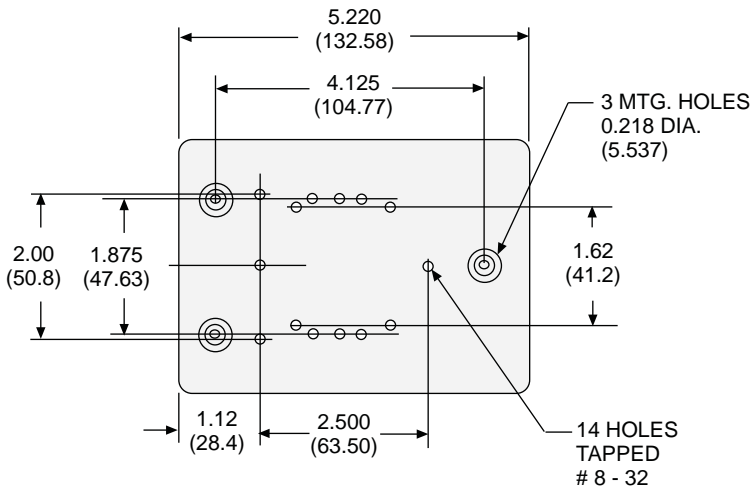
WIRING DIAGRAM
(VIEWED FROM PIN END)



STANDARD PART NUMBERS	COIL MEASURED @ 25°C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED WITH SCREW TERMINALS		
W199ADEX-4	120 VAC	290 Ω
DC OPERATED WITH SCREW TERMINALS		
W199DEX-3	24 VDC	290 Ω

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



STANDARD PART NUMBER	DESCRIPTION
50-1289-1	UNIVERSAL MOUNT METAL ENCLOSURE

COVER & RELAY MOUNTING SCREWS INCLUDED