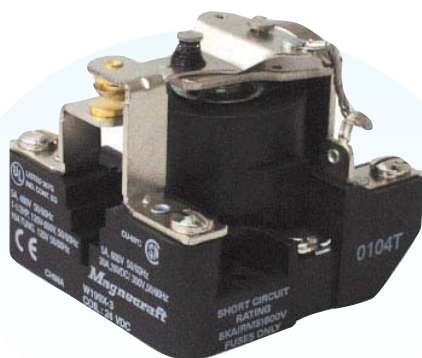
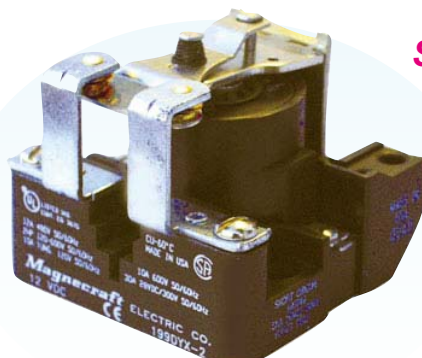


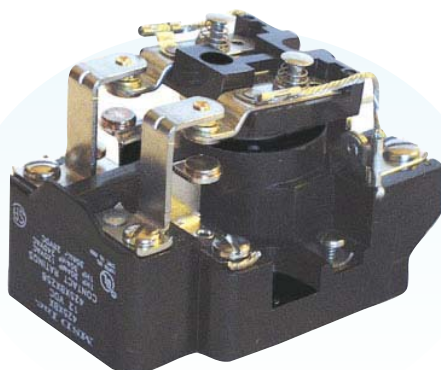
**SPDT, DPDT, DPST-N.O.,
SPST-N.C.-D.B. & SPST-N.O.-D.M.,
10 TO 50 AMPS**



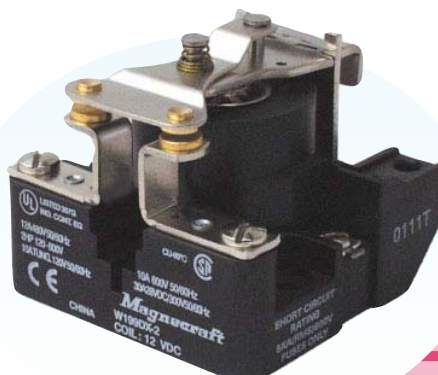
199 SPDT
30 AMP, 1-1/2 Hp



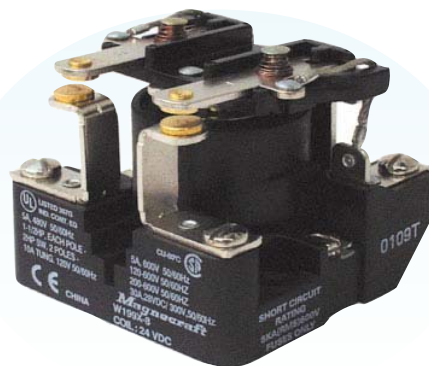
199 SPST-NC-DB
30 AMPS, 2 Hp



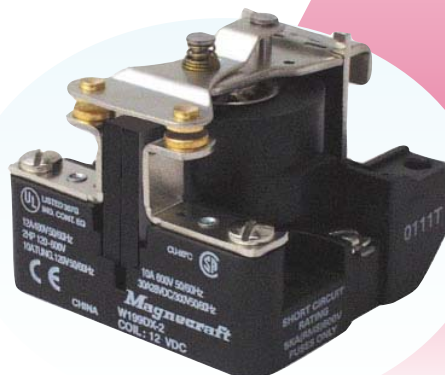
199 DPDT
30 AMP, 1-1/2 Hp PER POLE
2 Hp-2 POLE SWITCHING



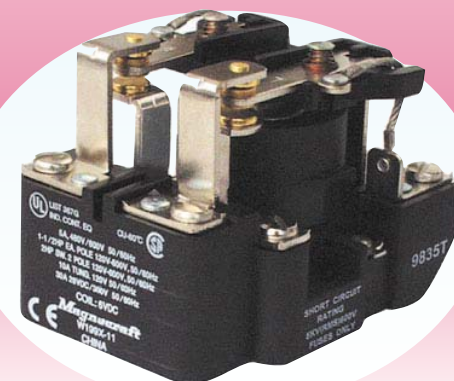
199 SPST-NO-DM
30 AMPS, 2 Hp



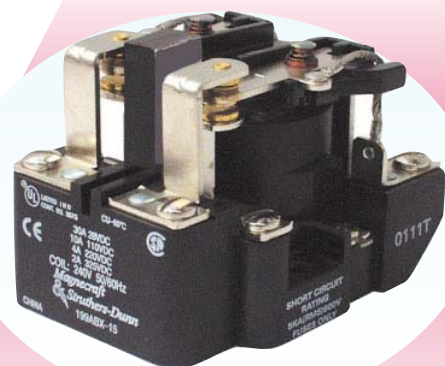
199 DPST-NO
30 AMPS, 1-1/2 Hp PER POLE
2 Hp - 2 POLE SWITCHING



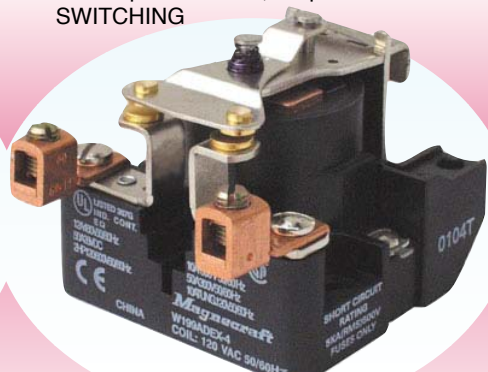
199DB SPST-NO-DM
WITH MAGNETIC BLOWOUT FOR DC ARC
QUENCHING 20 AMPS, 110 VDC



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



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

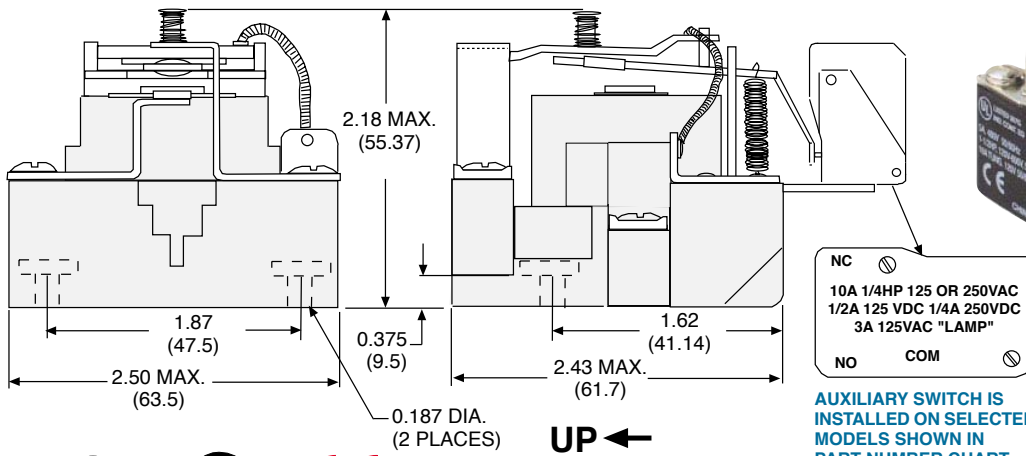
**MANUFACTURED UNDER
ISO 9002**

Optional metal enclosure
available, see page 12

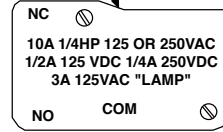
**CLASS "B" COIL
INSULATION SYSTEM**

SPDT, 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



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

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

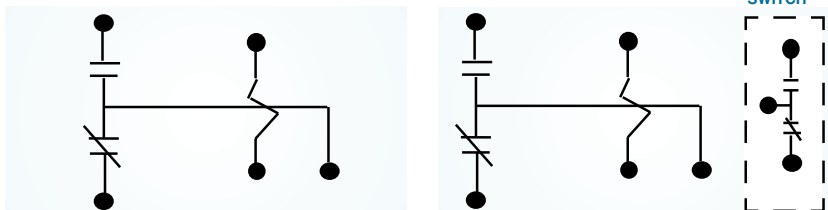
LIFE EXPECTANCY

- 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.

WIRING DIAGRAM
(VIEWED FROM PIN END)

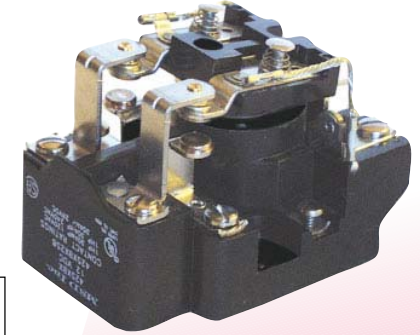
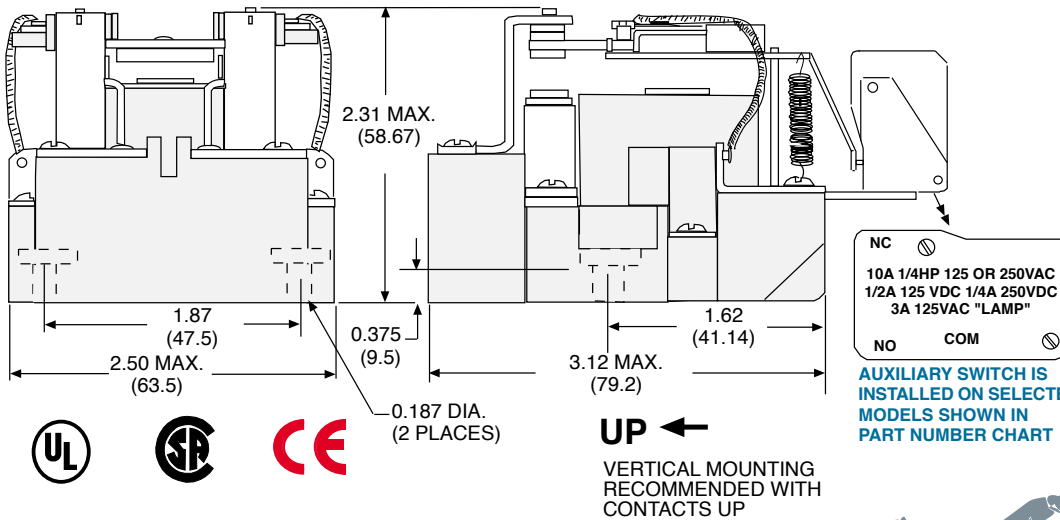


COIL MEASURED @ 25°C

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

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

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 watts max.
- Duty: Continuous.

CONTACTS

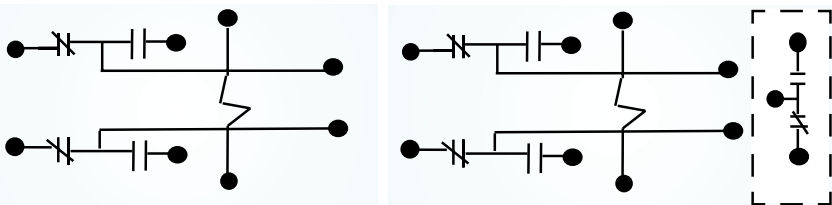
- Contact Material: Silver cadmium oxide, gold flashed
5/16" diameter standard.
- Contact Rating: 30 amps up to 300 VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60Hz 0.75 pf inductive load. 1-1/2 Hp motor load each pole @ 120 thru 600 VAC, 50/60 Hz. 2 Hp motor load @ 200 to 600 VAC. when using two poles to 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

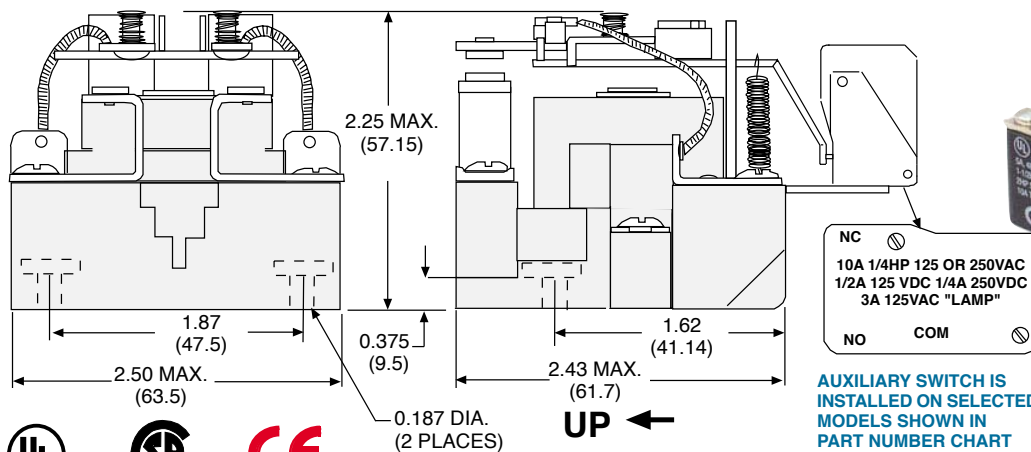
- Coil Terminals: 6-32 combination head screws
- Load Terminals: 8-32 combination head screws
- Base Material: Molded phenolic, UL recognized (QMfZ2)
- Weight: 311 grams approx.

COIL MEASURED @ 25°C

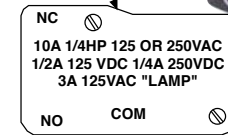
STANDARD PART NUMBERS	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199AX-13	24 VAC	12 Ω
W199AX-14	120 VAC	290 Ω
W199AX-15	240 VAC	1200 Ω
AC OPERATED WITH SPDT AUXILIARY SWITCH		
W199AMX-63	24 VAC	12 Ω
W199AMX-64	120 VAC	290 Ω
W199AMX-65	240 VAC	1200 Ω
DC OPERATED		
W199X-11	6 VDC	18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

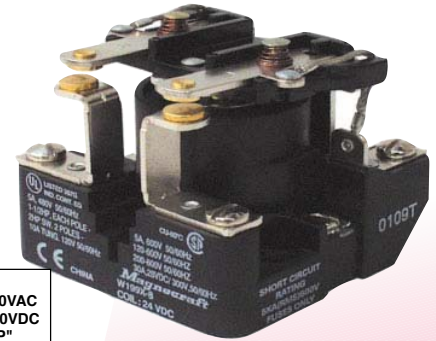
OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



UP ←
VERTICAL MOUNTING
RECOMMENDED WITH
CONTACTS UP



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



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 watts max
- Duty: Continuous.

CONTACTS

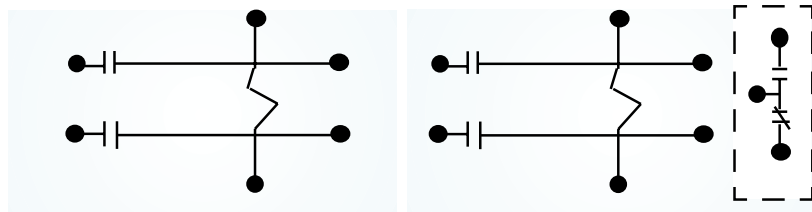
- Contact Material: Silver cadmium oxide, gold flashed. 5/16" diameter standard
- Contact Rating: 30 amps up to 300 VAC, 50/60Hz, 5 amps @ 480/600VAC, 0.75 pf Inductive load. 1-1/2 Hp motor load (each pole) @ 120 thru 600 VAC, 50/60 Hz. 2 Hp motor load @ 200 thru 600 VAC, 50/60 Hz only when using two 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

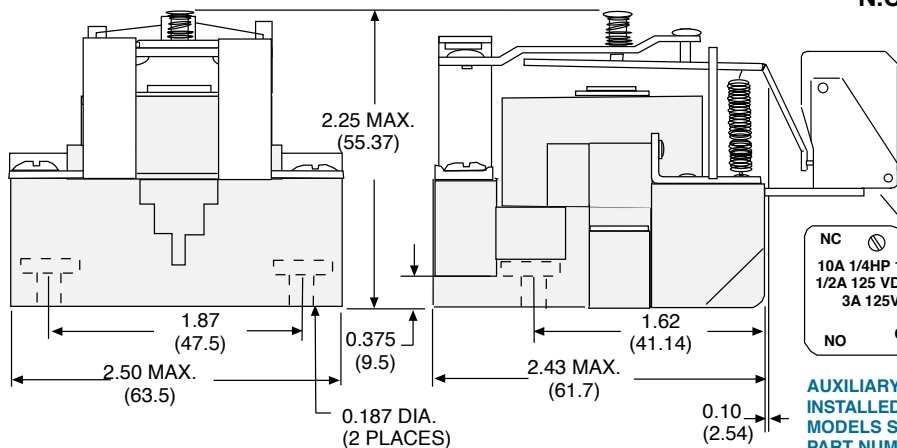
- Electrical: 100,000 operations @ rated resistive load
- Mechanical: 1,000,000 operations @ no load

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

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



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

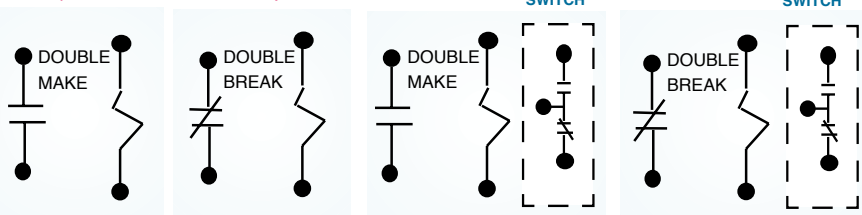
- Contact Material: Silver cadmium oxide, gold flashed.
5/16" diameter standard.
- Contact Rating: 30 amps up to 300 VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60Hz
12 amps @ 480 VAC, 10 amps @ 600 VAC, 50/60Hz 0.75 pf inductive load.
2 Hp motor load @ 120 thru 600 VAC, 50/60 Hz. 30 amps @ 28 VDC resistive 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

TIMING

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

WIRING DIAGRAM

(VIEWED FROM PIN END)

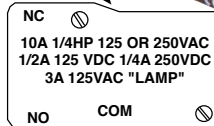


OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER.
CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

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

SPST
N.C.- D.B.

Optional metal enclosure available, see page 12



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

SPST
N.O.- D.M.



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

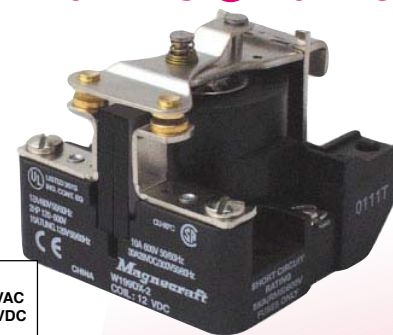
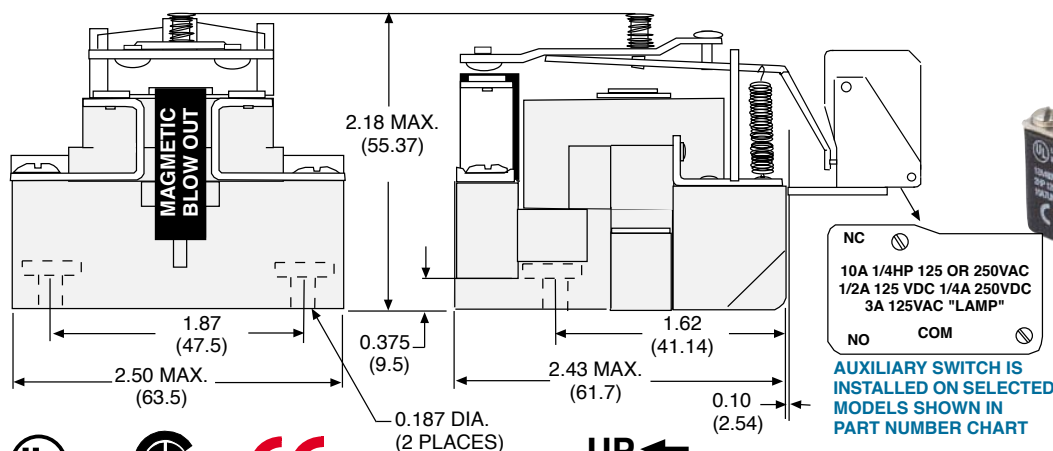
- Coil Terminals: 6-32 combination head screws
- Load Terminals: 8-32 Ccombination head screws
- Base Material: Molded phenolic, UL recognized (QMFZ2)
- Weight: 227 grams approx.

CLASS **199DB**

DC SWITCHING POWER RELAY

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

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: 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
- DC Rating: NEMA A600 pilot duty 50/60Hz
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 +60°C
- Non-Operating Storage Range: -55°C to +100°C

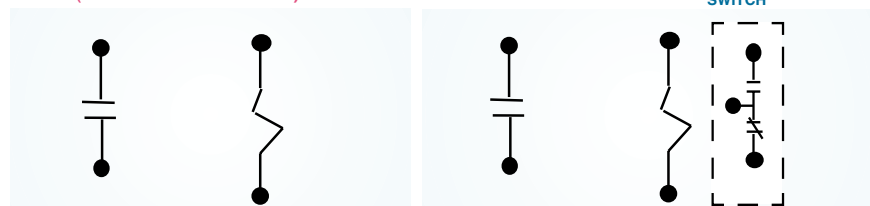
LIFE EXPECTANCY

- 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)

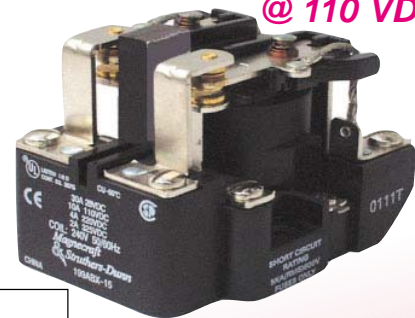
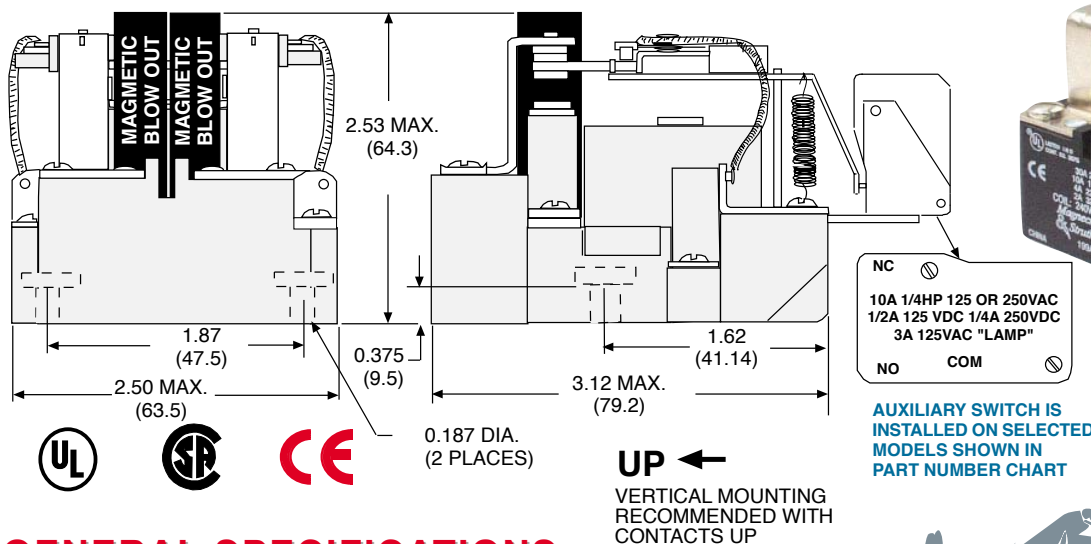


OTHER COIL VOLTAGES ARE AVAILABLE ON SPECIAL ORDER. CONTACT FACTORY FOR SPECIAL REQUIREMENTS.

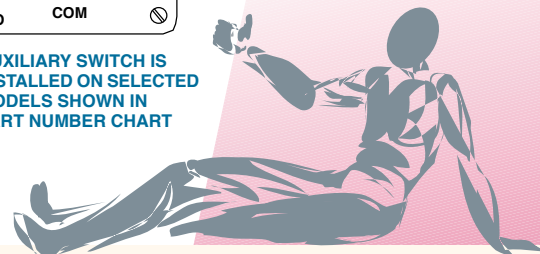
STANDARD PART NUMBERS	COIL MEASURED @ 25°C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199ADBX-4	120 VAC	290 Ω
AC OPERATED WITH SPDT AUXILIARY SWITCH		
W199ADBMX-4	120 VAC	290 Ω
DC OPERATED		
W199DBX-3	24 VDC	290 Ω
W199DBX-6	48 VDC	1200 Ω
DC OPERATED WITH SPDT AUXILIARY SWITCH		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



GENERAL SPECIFICATIONS

COIL

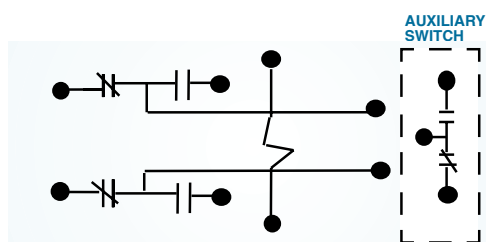
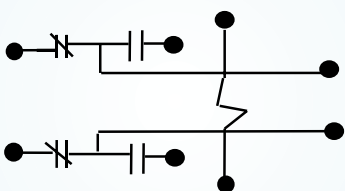
- Pull-in Voltage: 85% of nominal voltage or less for AC coils
80% of nominal voltage or less for DC coils
- Dropout Voltage: 10% of nominal voltage or more @ 25°C
- Coil Resistance: ± 10% @ 25°C
- Coil Power: 2.0 watts DC., 10 VA (60Hz) AC @ 25°C
- Max. Coil Dissipation: DC coils - 4 watts max.
- Duty: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

WIRING DIAGRAM

(VIEWED FROM PIN END)



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

DIELTIMING

- 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 +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.

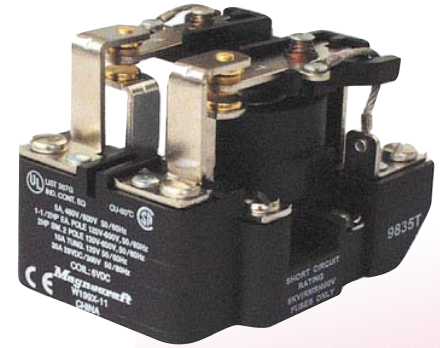
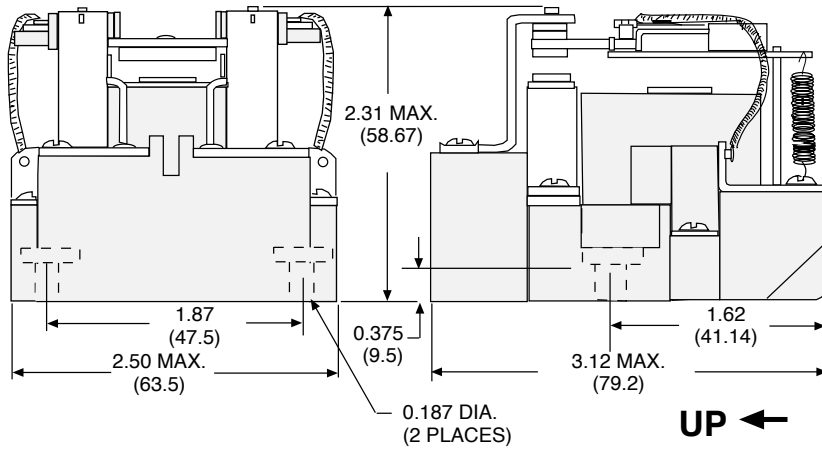
STANDARD PART NUMBERS	COIL MEASURED @ 25°C	
	NOMINAL INPUT VOLTAGE	NOMINAL RESISTANCE (OHMS)
AC OPERATED		
W199ABX-14	120 VAC	290 Ω
AC OPERATED WITH SPDT AUXILIARY		
W199ABMX-7	120 VAC	290 Ω
DC OPERATED		
W199BX-13	24 VDC	290 Ω
W199BX-14	110 VDC	6000 Ω
DC OPERATED WITH SPDT AUXILIARY		
W199BMX-13	24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

CLASS **199H**

HIGH POWER RELAY

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

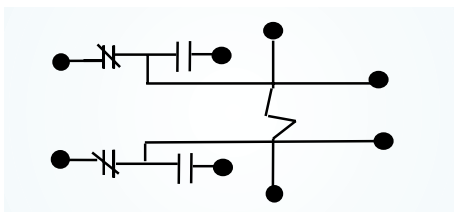
- Contact Material: Silver cadmium oxide, gold flashed.
5/16" diameter standard
- Contact Rating: 40 amps up to 300 VAC, 50/60Hz
5 amps @ 480/600 VAC, 50/60Hz 0.75 pf inductive load. 1-1/2 Hp motor load esch pole @ 120 thru 600 VAC, 50/60 Hz.
2 Hp motor load @ 200 to 600 VAC when using two poles to switch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

TIMING

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

WIRING DIAGRAM

(VIEWED FROM PIN END)



AUXILIARY CONTACTS AND 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 to +60°C
- Non-Operating Storage Range: -55°C to +100°C

LIFE EXPECTANCY

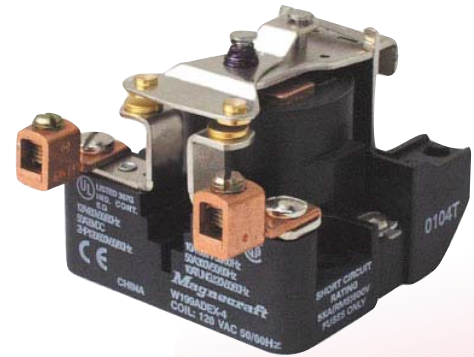
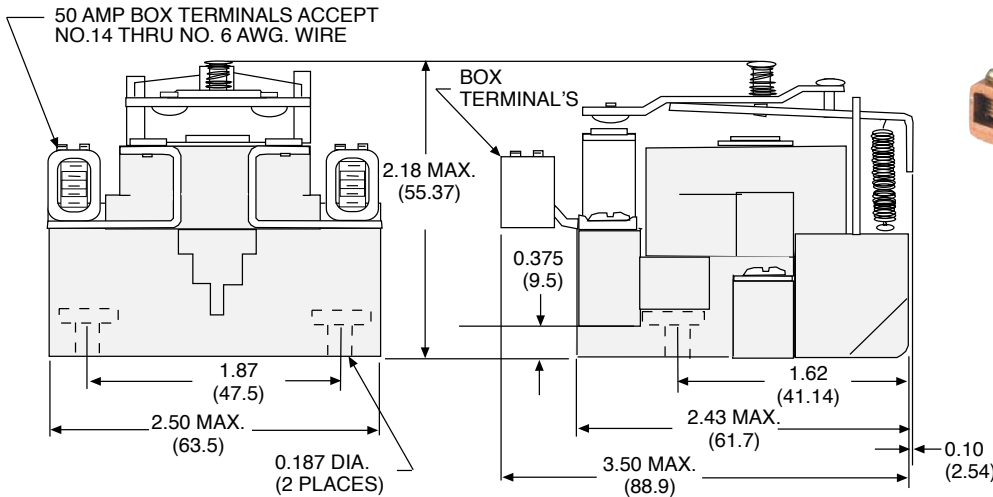
- Electrical: 100,000 operations @ rated resistive load
- Mechanical: 1,000,000 operations @ no load

MISCELLANEOUS

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

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

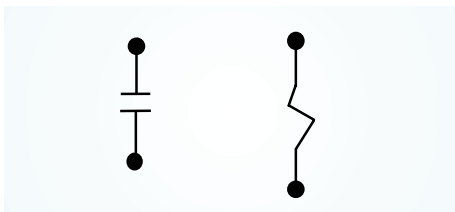
- Electrical: 100,000 operations
@ rated resistive load
- Mechanical: 1,000,000 operations @ no load

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)



3... 11 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 WITH SCREW TERMINALS		
W199ADEX-4	120 VAC	290 Ω
DC OPERATED WITH SCREW TERMINALS		
W199DEX-3	24 VDC	290 Ω