



O/E/N 78

AUTOMOTIVE POWER RELAY

FEATURES

- High performance
- Small Size
- Light Weight
- Enclosed
- Rubber Boot & Coupler Available

APPLICATION

- Starter Motor
- Defogger
- Radiator Fan
- A/C Controls

TECHNICAL DATA FOR CONTACT SIDE :

Areas of Application

Contact Configuration :

Contact Material :

Contact Rating at 23°C - 12VDC :

Electrical Life Operations Min. :

Mechanical Life Operations Min. :

Contact Voltage Drop at 10 A :

Maximum Switching Current

@ 12.8 VDC For 3 Sec.

RESISTIVE / INDUCTIVE LOAD

1A

Silver Nickel

22A

2×10^5

1×10^6

100mV

200A

GENERAL DATA FOR COIL SIDE

Nominal Coil Power : 1.44W (Approx)

Operating Power : 0.92W (Approx)

Operate Time* : 10 milli Seconds

Release Time* : 5 milli Seconds

* At nominal voltage without coil suppression (excluding bounce)

OPERATING CONDITIONS

Ambient Temperature : -30°C to +85°C

Maximum Temperature : 155°C

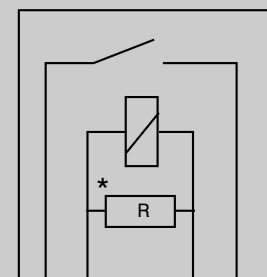
Dielectric Strength : 750VRMS

Insulation Resistance : 100 Meg Ohms Min. At 500 VDC, 25°C RH 50

Vibration Resistance (without change in the switching state > 10μS) : 10-500Hz 20g

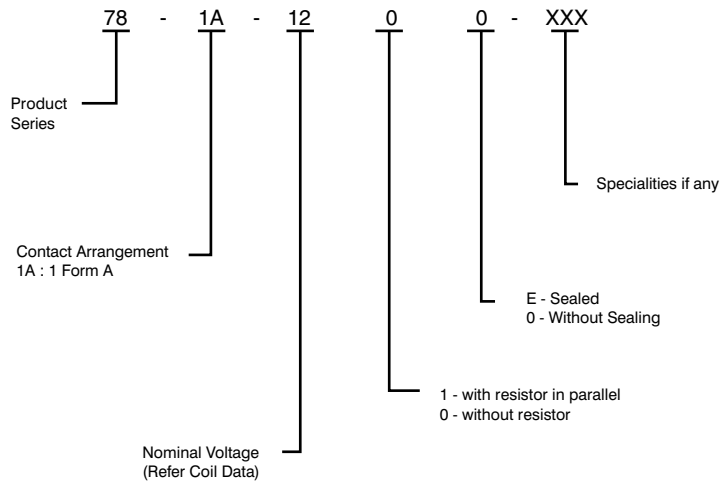
Shock Resistance (without change in the switching state > 10μS) : 20g, 8mS

CIRCUIT DIAGRAM



* parallel resistor or diode optional

HOW TO ORDER

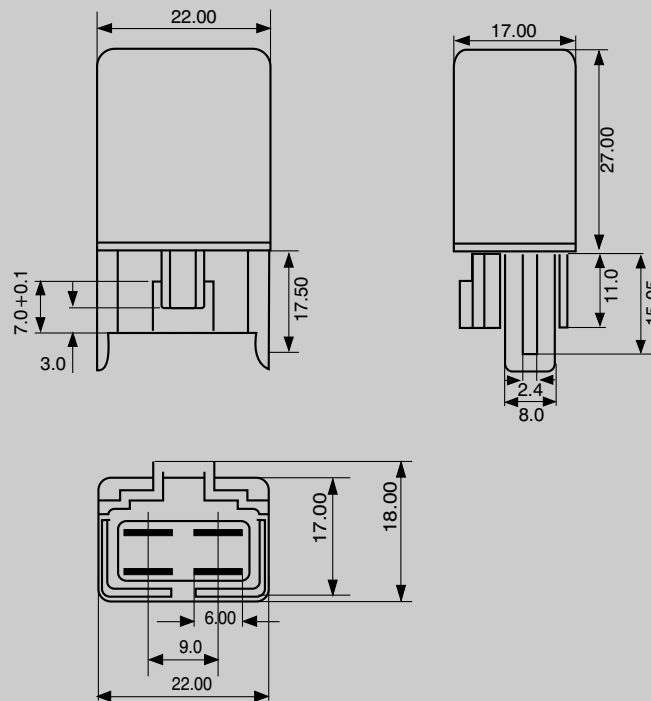


COIL DATA

Nominal Voltage VDC	**Pick-up Voltage VDC (Max)	Drop-out Voltage (Min)	Coil Resistance at 20 °C Ohms ± 10%
12	7.2	1.2	100
24	14.8	2.4	320

**Lower pick-up Voltages available on request

DIMENSIONS



MECHANICAL DATA

COVER RETENTION

Pull	: 20KgF
Push	: 20KgF

TERMINAL STRENGTH

Pull	: 10KgF
Push	: 10KgF
Plug-in Force	: 12.25KgF
Removal Force	: 11.35KgF

AVAILABLE ON REQUEST

- High temperature winding wire
- Special coil resistance & pick-up
- Resistor / diode across coil
- For other custom solutions consult factory

DATA ON VARIOUS TESTS CONDUCTED FOR OPERATING CONDITIONS *

TEST	TEST CONDITION	RESULT
Continuous Energisation test at Extreme temperature Conditions	Relay kept at 100 ⁰ C Coil Voltage : 14 VDC Load given : 20 A @ 12 VDC Duration : 5 Sec. On, 5 Sec. OFF No. of operation : 50000 The above test repeated at - 30 ⁰ C for 50000 operations	Relays successfully completed 100000 operations at given load
Thermal cycling	Relay subjected to :- -30 ⁰ C to + 100 ⁰ C in 2 Hrs. with coil ON + 100 ⁰ C for 2 Hrs. with coil ON + 100 ⁰ C to - 30 ⁰ C in 2 Hrs. with 1 Hrs. Coil ON & 1 Hrs. Coil OFF -30 ⁰ C for two Hrs. with Coil ON No. of Cycles : 3	All operating parameters within the specifications after test
Shock Voltage	Relay is subjected to :- Max. Voltage : 100VDC Shock Wave : Exponential Damping vibration Time : 500 micro Sec. Period : 30 Sec. Test Time : 10 Hrs.	After the test, all operating parameters of the relay are within specification.
Dropping Impact	Relays dropped from a height of 1 Meter to a concrete floor	No change in operating parameters of the relay.
Jump Start	24 VDC for 1 minute conducting normal current at 23 ⁰ C	Withstood successfully
Water Resistance test AS per JIS D 0203 R2	Horizontal Plane:23rev. / Min. Water Pressure:0.03 Mpa Test time:10 Min	No water ingress inside the relay

*Typical values for relays with 12 VDC coll. For higher severity please consult factory