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		**Resistive / Inductive Load**
Contact Configuration	:	1 Form A, 1 NO
Contact Material	:	Silver Nickel
Contact Rating at 23°C - 12VDC	:	22A
24VDC	:	15A
Electrical Life Operations Min.	:	2×10^5
Mechanical Life Operations Min.	:	1×10^6
Contact Voltage Drop at 22 A (Max.)	:	200mV (MAX.)
Maximum Switching Current @ 12.8 VDC For 3 Sec.	:	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

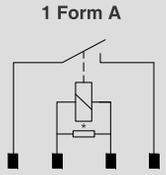
* At nominal voltage without coil suppression (excluding bounce)

OPERATING CONDITIONS

Ambient Temperature	:	-30°C to +100°C
Maximum Temperature	:	155°C
Dielectric Strength	:	500VRMS
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

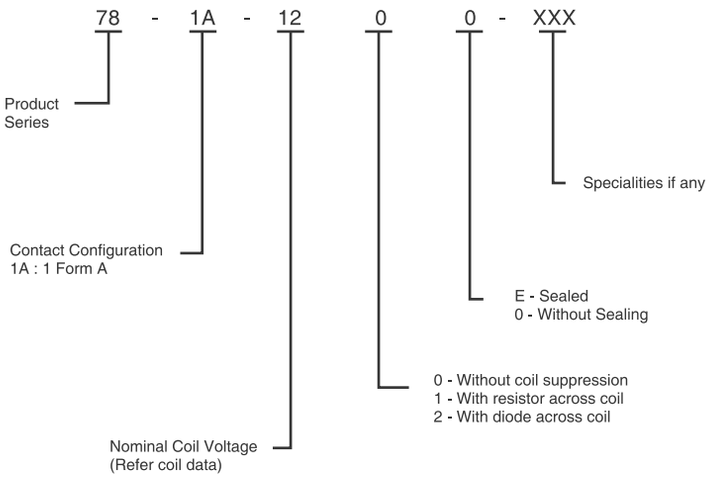
CIRCUIT DIAGRAM

1 Form A



*Parallel resistor or diode optional

HOW TO ORDER

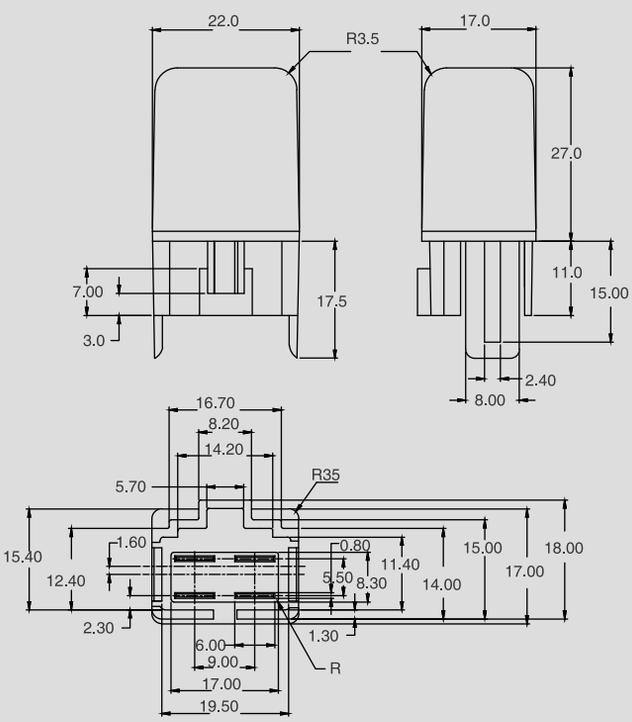


COIL DATA

Nominal Voltage VDC	**Pick-up Voltage VDC (Max)	Drop-out Voltage (Min)	Coil Resistance at 20 ^{0}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

- **For other custom solutions consult factory**

DATA ON VARIOUS TESTS CONDUCTED FOR OPERATING CONDITIONS*		
TEST	**TEST CONDITION**	**RESULT**
Electrical life	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 ingression inside the relay

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