MC5S006

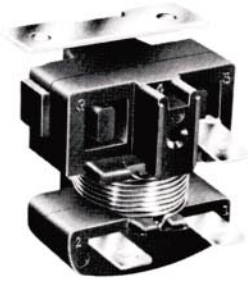
KLIXON®

Motor Starting Relays from Texas Instruments

3CR Series

Current Type Gravity Dependent

- **Complete mounting flexibility — plug-on types fit all compressor pin orientations; bracket-mounted type for convenient mounting in conventional motor applications**
- **Small size for compact installations**
- **Range of contact ratings — up to 15 amp start winding current**
- **Long contact life — designed for more than 1,500,000 cycles at 10 amps, 600,000 cycles at 15 amps**
- **Wide range of stable pick-up and drop-out ratings**
- **Rugged all-welded construction, plated external metal parts and dust-tight phenolic case**



Bracket mounted type 100 series

2-pin plug-on 200 series

3-pin plug-on 300 series

The KLIXON 3CR series current-type motor starting relay is designed for single-phase AC applications with motor start winding currents up to 15 Amps. It is applicable on both split phase and capacitor start motors.

The 3CR relay can be mounted directly on the motor housing or at a convenient location away from the motor. Since the 3CR eliminates the space-consuming centrifugal switch, motor size and weight are reduced.

Typical applications of the 3CR are oil burner motors, refrigerator and freezer compressors, dishwasher motors, and other appliance motors.

Termination

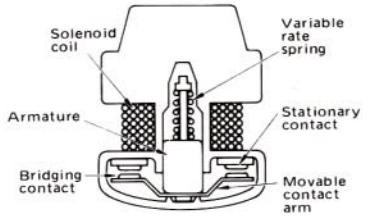
The bracket mounted type is supplied with either male quick-connects or 6-32NC screw terminals for start, main and line connections.

The 2-pin plug-on type is supplied with a male quick connect or 6-32NC screw terminals for line connection.

All 100 and 200 series relays can be supplied with various combinations of screw and quick-connect terminals, leads with or without terminals, and dummy terminals at slight additional cost.

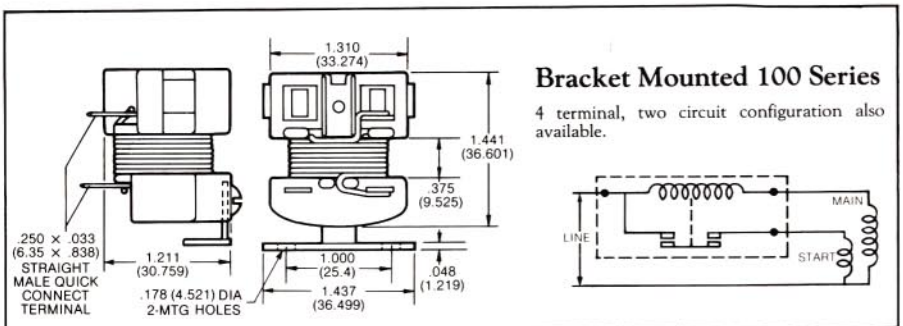
The 3-pin plug-on type has male quick-connects or 6-32NC screw terminals included for the two line connections to the relay.

The 3CR relay utilizes a steel armature centered in a solenoid coil field and bridging-type contact arm which closes by armature movement. All working parts are enclosed in a rugged case and air core construction is used to avoid residual magnetism. A double pair of contacts give two breaks in series to assure longer contact and relay life.



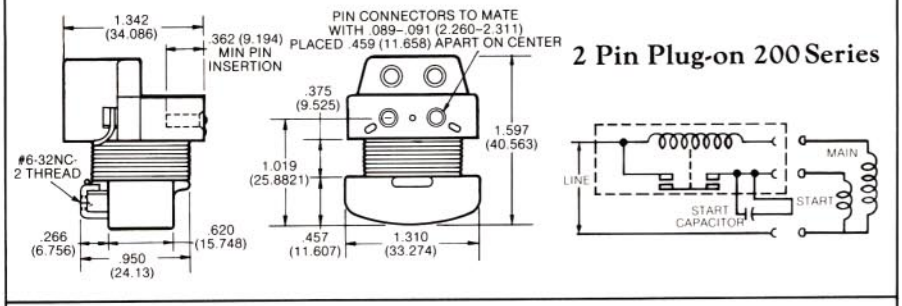
The 3CR relay is normally open with its coil connected in series with the main winding of the motor and its starting circuit in series with the start winding. When voltage is applied to the motor, the high current through the main winding and relay coil creates a magnetic field which lifts or "picks up" the relay armature and closes the start contacts.

Increasing motor speed and related decreasing current through the main winding and relay coil reduce the magnetic force and the armature "drops out" to open the start contacts and disconnect the start winding.

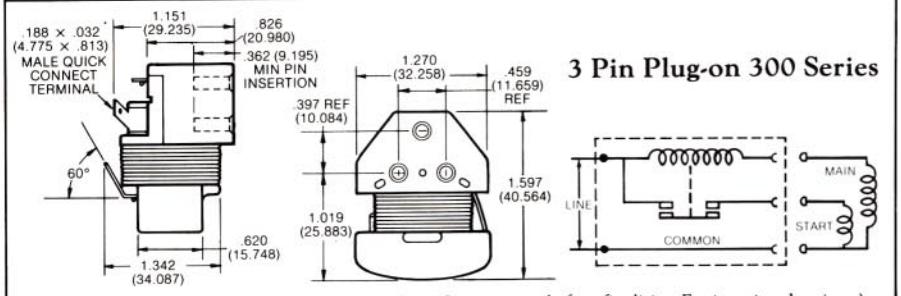


Bracket Mounted 100 Series

4 terminal, two circuit configuration also available.



2 Pin Plug-on 200 Series



3 Pin Plug-on 300 Series

All dimensions are for reference. (Contact Texas Instruments before finalizing Engineering drawings.)

Descriptive Report

UL file #SA3745 6/18/63
CSA file # LR11372-27C Part P

Sample Code:

3CR - 100 - 281

Basic Part Number

Electrical Rating
Pick-up, drop-out & capacity are specified by these three digits.

Physical Configuration
100 Series — Bracket
200 Series — 2 Pin
300 Series — 3 Pin
Variations on types of terminals & leads are specified by last two digits.

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How To Order

1. The basic KLIXON part number is 3CR.
2. Physical configuration — state requirements for special leads, terminals and mounting.
3. Electrical Ratings (see table). Ratings 101B–198B have up to 14 amp start current capacity; 201–298 has 15 amp capacity. Pick-up & drop-out are specified by the last two digits.

Example:

Rating	P.U.	D.O.	Capacity
181	17.90	15.10	10 Amp
281	17.90	15.10	15 Amp

For further information write or call:

Texas Instruments Incorporated
Motor Controls Marketing
Attleboro, Massachusetts 02703
Telephone: (617) 699-3800

KLIXON Rating No.	Relay Operating Characteristics (Amps) Max. Pick-Up	Min. Drop-Out
101	2.34	1.92
102	2.39	1.96
103	2 42	2 00
104	2.48	2.05
105	2.52	2.09
106	2.62	2.18
107	2.73	2.27
108	2.79	2.31
109	2.84	2.36
110	2.88	2.40
111	3.05	2.53
112	3.14	2.56
113	3.25	2.70
114	3.40	2.80
115	3.50	2.90
116	3.68	3.05
117	3.80	3.15
118	3.90	3.20
119	4.00	3.30
120	4.10	3.40
121	4.20	3.50
122	4.30	3.55
123	4.40	3.66
124	4.55	3.75
125	4.70	3.90
126	4.86	4.05
127	5.00	4.15
128	5.10	4.20
129	5.20	4.30
130	5.30	4.40
131	5.45	4.50
132	5.60	4.65
133	5.70	4.75
134	5.80	4.80
135	5.90	4.90
136	6.00	4.95
137	6.10	5.00
138	6.20	5.10
139	6.30	5.25
140	6.40	5.30
141	6.50	5.40
142	6.65	5.50
143	6.80	5.65
145	7.00	5.90
147	7.15	6.00
148	7.30	6.10
150	7.60	6.40
151	7.90	6.60
152	8.10	6.75
154	8.25	6.90
155	8.45	7.05
156	8.60	7.15
157	8.80	7.30
158	9.00	7.50
159	9.20	7.65
160	9.45	7.90
162	9.80	8.10
163	10.16	8.40
165	10.40	8.60
166	10.80	9.00
167	11.00	9.30
168	11.70	9.70
169	12.20	10.20
170	12.70	10.56
171	12.90	10.80
172	13.30	11.10
173	13.90	11.50
174	14.10	11.90
175	14.50	12.10
176	14.90	12.50
177	15.20	12.80
178	15.80	13.30
179	16.80	13.90
180	17.10	14.20
181	17.90	15.10
182	18.40	15.40
183	19.60	16.40
184	20.90	17.40
185	22.10	18.40
186	22.50	18.70
187	23.30	19.40
188	24.00	19.80
189	24.75	20.45
190	25.80	21.50
191	27.20	22.70
192	28.80	23.90
193	30.30	25.10
197	21.80	17.90
198	24.40	20.35

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