

SPECIFICATIONS:

		ELECTRICAL SPECIFICATIONS			
		M07	M09	M12	M16
ELECTRICAL GENERAL					
	UNITS				
Rated Operating Frequency	Hz	25 ~ 400			
Rated Coil Frequencies		AC: 50Hz, 60Hz, 50/60Hz and DC			
ELECTRICAL UL/CSA APPLICATIONS					
Rated Operating Voltage, Ue	VAC	600			
General Purpose Current Rating	A	18	20	22	22
RATED 1 PHASE OPERATING CURRENT, Ie					
115V	A	7.2	7.2	9.8	16
230V	A	6.9	8	12	12
RATED 1 PHASE OPERATING POWER, Pe					
115V	HP	1/3	1/3	1/2	1
230V	HP	3/4	1	2	2
RATED 3 PHASE OPERATING CURRENT, Ie					
200V	A	6.9	7.8	11	11
230V	A	6	6.8	9.6	9.6
460V	A	7.6	7.6	11	14
575V	A	6.1	9	9	11
RATED 3 PHASE OPERATING POWER, Pe					
200V	HP	1-1/2	2	3	3
230V	HP	1-1/2	3	3	5
460V	HP	5	5	7-1/2	10
575V	HP	5	7-1/2	7-1/2	10
Standard Short Circuit Current	kA	5	5	5	5
Maximum Fuse Size	A	30	30	30	40
High Fault Short Circuit Current	kA	100	100	100	100
Maximum Fuse Size (Class J)	A	15	15	15	20
ELECTRICAL IEC APPLICATIONS					
Rated Insulation Voltage, Ui	V	690			
Rated Operating Voltage, Ue	VAC	690			
Rated Thermal Current, Ith	A	18	20	22	22
RATED AC-1 OPERATING CURRENT, Ie					
At 55° C (131° F)	A	18	20	22	22
RATED AC-3 OPERATING CURRENT, Ie					
220 ~ 240V	A	6.8	9.6	—	—
380 ~ 400V	A	6.3	8.1	11	14.8
415 ~ 440V	A	7	9	12	16
500V	A	5	9	12	12
660 ~ 690V	A	3.5	6.7	9	9
RATED AC-3 OPERATING POWER, Pe					
220 ~ 240V	kW	1.5	2.2	3	4
380 ~ 400V	kW	3	4	5.5	7.5
415 ~ 440V	kW	3	4	5.5	7.5
500V	kW	3	5.5	7.5	7.5
660 ~ 690V	kW	3	5.5	7.5	7.5
RATED AC-4 OPERATING CURRENT, Ie					
220 ~ 240V	A	2.5	4	4	5
380 ~ 400V	A	2.5	4	4	5
415 ~ 440V	A	2.5	4	4	5
RATED AC-4 OPERATING RATINGS, kW (200,000 operations)					
220 ~ 240V	kW	1.1	1.5	2.2	3
380 ~ 400V	kW	2.2	3	4	5.5
415 ~ 440V	kW	2.2	3	4	5.5
500V	kW	3	3	4	5.5
660 ~ 690V	kW	3	4	4	5.5
RATED AC-4 OPERATING RATINGS, A (200,000 operations)					
220 ~ 240V	A	5.8	7.5	10	13.3
380 ~ 400V	A	5.8	7.5	10	13.3
415 ~ 440V	A	5.8	7.5	10	13.3
500V	A	5.4	6.3	7.3	10.8
660 ~ 690V	A	4.1	5	5.5	8.1

ELECTRICAL SPECIFICATIONS (CONTINUED)					
		M07	M09	M12	M16
ELECTRICAL IEC APPLICATIONS (CONTINUED)					
	UNITS				
MAXIMUM ELECTRICAL SWITCHING RATE					
AC-1 & AC-4	Ops./Hr.			300	
AC-3	Ops./Hr.			600	
Electrical Endurance, AC-3 at Maximum Rated 3 Phase Operating Power (@400V)	Ops. (mil.)	1.4	1.3	1.2	1.1
Short Circuit Current Rating with (gG/gL) fuses					
Type 1	A	35	35	35	35
Type 2	A	20	20	25	25

COIL CHARACTERISTICS, MECHANICAL, ENVIRONMENTAL & CONSTRUCTION SPECIFICATIONS					
COIL CHARACTERISTICS					
	UNITS				
Rated Insulation Voltage, U _i	V			690	
OPERATING LIMITS					
50HZ, 60HZ, 50/60HZ					
Operating	xU _c			0.8 ~ 1.1	
Pick-Up	xU _c			0.6 ~ 0.8	
Drop-Out	xU _c			0.4 ~ 0.6	
DC					
Operating	xU _c			0.8 ~ 1.1	
Pick-Up	xU _c			0.4 ~ 0.7	
Drop-Out	xU _c			0.3 ~ 0.5	
COIL CONSUMPTION					
50HZ, 60HZ, 50/60HZ					
Pick-Up	VA			16	
Hold-In	VA			2 ~ 3	
DC					
Pick-Up	W			2 ~ 3	
Hold-In	W			2 ~ 3	
OPERATING TIMES					
AC					
Pick-Up	msec.			20 ~ 30	
Drop-Out	msec.			20 ~ 30	
DC					
Pick-Up	msec.			25 ~ 35	
Drop-Out	msec.			25 ~ 35	
POWER DISSIPATION					
50Hz, 60Hz, 50/60Hz	W			2 ~ 3	
POWER FACTOR					
Closed	cos(φ)			0.27	
Open	cos(φ)			0.8	
MECHANICAL					
Mechanical Endurance	Ops. (mil.)			10	
Maximum Mechanical Switching Rate	Ops./Hr.			2000	
ENVIRONMENTAL					
Ambient Operating Temperature	°C / °F			-25 to +55 / -13 to +131	
Ambient Storage Temperature	°C / °F			-55 to +80 / -67 to +176	
Altitude	m / ft			3,000 / 9,792	
CONSTRUCTION					
INGRESS PROTECTION					
Main Circuits	—			IP20	
Control Circuit Terminations	—			IP20	
Weight	kg. / lbs.			0.18 / 0.40	
TERMINAL CAPACITY					
AWG Wire				2 x 20 ~ 14	
Solid	mm ²			2 x 0.5 ~ 2	
Stranded	mm ²			2 x 0.5 ~ 2	
Tightening Torque	lb-in.			8.8 ~ 10.6	
	Nm			1.0 ~ 1.2	

For RoHS compliance documentation by product, refer to www.c3controls.com.

SPECIFICATIONS:

ELECTRICAL & COIL CHARACTERISTICS SPECIFICATIONS

		C16
ELECTRICAL GENERAL		
	UNITS	
Rated Operating Frequency	Hz	25 ~ 400
Rated Coil Frequencies		AC: 50Hz, 60Hz, 50/60Hz and DC
RATED AC-1 OPERATING CURRENT, Ie		
At 55° C (131° F)	A	16
CONTACT RATINGS		
Rated Voltage, Ue		
IEC	V	690
UL/CSA	V	600
Pilot Duty Rating		
	AC	A600
	DC	Q600
Make/Break		
AC-15		
@240V AC	A	10
@415V AC	A	5
@500V AC	A	4
DC-13		
@24V DC	A	6
@60V DC	A	1.5
@110V DC	A	0.7
@220V DC	A	0.35
Electrical Life	Ops. (mil.)	1
COIL CHARACTERISTICS		
Rated Insulation Voltage, Ui	V	690
OPERATING LIMITS		
50HZ, 60HZ, 50/60HZ		
Operating	xUc	0.8 ~ 1.1
Pick-Up	xUc	0.6 ~ 0.8
Drop-Out	xUc	0.4 ~ 0.6
DC		
Operating	xUc	0.8 ~ 1.1
Pick-Up	xUc	0.4 ~ 0.7
Drop-Out	xUc	0.3 ~ 0.5
COIL CONSUMPTION		
50HZ, 60HZ, 50/60HZ		
Pick-Up	VA	16
Hold-In	VA	2 ~ 3
DC		
Pick-Up	W	2 ~ 3
Hold-In	W	2 ~ 3
OPERATING TIMES		
AC		
Pick-Up	msec.	20 ~ 30
Drop-Out	msec.	20 ~ 30
DC		
Pick-Up	msec.	25 ~ 35
Drop-Out	msec.	25 ~ 35
POWER DISSIPATION		
50Hz, 60Hz, 50/60Hz	W	2 ~ 3
POWER FACTOR		
Closed	cos(φ)	0.27
Open	cos(φ)	0.8

MECHANICAL, ENVIRONMENTAL & CONSTRUCTION RELAY SPECIFICATIONS

		C16
MECHANICAL		
	UNITS	
Mechanical Life	Ops. (mil.)	10
ENVIRONMENTAL		
Ambient Operating Temperature	°C / °F	-25 to +55 / -13 to +131
Ambient Storage Temperature	°C / °F	-55 to +80 / -67 to +176
Altitude	m / ft	3,000 / 9,792
CONSTRUCTION		
INGRESS PROTECTION		
Protection Class		IP20
Weight	kg./lb.	0.18/0.42
TERMINAL CAPACITY		
AWG Wire		2 x 20 ~ 14
Solid	mm ²	2 x 0.5 ~ 2
Stranded	mm ²	2 x 0.5 ~ 2
Tightening Torque	lb-in.	8.8 ~ 10.6
	Nm	1.0 ~ 1.2

For RoHS compliance documentation by product, refer to www.c3controls.com.

AUXILIARY CONTACTS SPECIFICATIONS

		300-MFA, 300-CFA
ELECTRICAL UL/CSA APPLICATIONS		
	UNITS	
Rated Operating Voltage, Ue	VAC	600
PILOT DUTY RATING		
AC		A600
DC		Q600
ELECTRICAL IEC APPLICATIONS		
Rated Insulation Voltage, Ui	V	690
Rated Operating Voltage, Ue	VAC	690
Rated Thermal Current, Ith	A	10
RATED AC-15 OPERATING CURRENT, Ie		
220V	A	10
380 ~ 400V	A	5
RATED DC-13 OPERATING CURRENT, Ie		
24V	A	1.5
CONSTRUCTION		
TERMINAL CAPACITY		
AWG Wire		2 x 20 ~ 14
Solid	mm ²	2 x 0.5 ~ 2
Stranded	mm ²	2 x 0.5 ~ 2
Tightening Torque	lb-in.	8.8 ~ 10.6
	Nm	1.0 ~ 1.2

For RoHS compliance documentation by product, refer to www.c3controls.com.

MOUNTING POSITIONS FOR MINIATURE CONTACTORS AND CONTROL RELAYS

