

PRODUCT DESCRIPTION

RATING (SELECT ONLY ONE)

RATED INPUT	DRIVE MODEL NO.	120V AC APPLICATIONS RATED OUTPUT CURRENT(A)	NOMINAL HP	BASE DTD
200V	A008	6	1	D10
200V	A011	11	3	D30
200V	A017	17.5	5	D40
200V	A027	27	7.5	D50
200V	A036	36	10	D60
200V	A054	54	15	D70
200V	A068	68	20	D80
200V	A080	80	25	D90
200V	A104	104	30	DAD
200V	A008	6	1	A10
200V	A011	11	3	A20
200V	A017	17.5	5	A30
200V	A027	27	7.5	A50
200V	A036	36	10	A60
200V	A054	54	15	A70
200V	A068	68	20	A80
200V	A080	80	25	A90
200V	A104	104	30	AAD
400V	B001	1.8	0.75	B10
400V	B003	3.4	1.2	B20
400V	B004	4.8	3	B30
400V	B008	8	5	B40
400V	B011	11	7.5	B50
400V	B014	14	10	B60
400V	B021	21	15	B70
400V	B027	27	20	B80
400V	B034	34	25	B90
400V	B041	41	30	BA0
400V	B052	52	40	BB0
400V	B065	65	50	BC0
400V	B080	80	60	BD0
400V	B096	96	75	BE0

OPTION TABLE 1

ENCLOSURE TYPE	OPTION DESIG.
NEMA 1 VENTED	V
BLOWERED	B
LOUVERED	L

OPTION TABLE 2

OPTION DESIGNATOR	DESCRIPTION
Y1	2CN OPTION - CM045 METASYS N2 COMMUNICATIONS
Y2	2CN OPTION - CM045 FLN COMMUNICATIONS
Y3	2CN OPTION - CM047 ECHOLON COMMUNICATIONS
Y4	2CN OPTION - CM086 RS-232 TO RS-485 INTERFACE
Y5	2CN OPTION - DS006 ANALOG MONITOR - V/I
SEE TABLE 3 FOR OPTION DESIG.	"RUNNING ON BYPASS" AND "RUNNING ON DRIVE" PILOT LIGHTS
	RFI NOISE SUPPRESSION NETWORK
	ENGRAVED DRIVE CABINET NAMEPLATE
	MANUAL SPEED POT
X	DC BUS LINK REACTOR (BASE NO.'S A1-A9, B1-B9, D1-D9, ONLY)
T	AUTO TRANSFER TO BYPASS UPON DRIVE FAULT
S	SMOKE PURGE
R	INPUT REACTOR
P	PRESSURE TRANSDUCER (3-15 PSI)
F	INPUT FUSED DISCONNECT SWITCH (BASE NO.'S A1-A7, B1-B7, D1-D6 ONLY)
F	INPUT FUSING (BASE NO.'S A8-AB, B8-BE, D7-DA ONLY)
E	INPUT RFI FILTER

OPTION COMBINATION TABLE 3

OPTION	OPTION DESIGNATION															
	1	2	3	4	5	6	7	G	H	J	K	L	N	U	W	
PILOT LIGHTS	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	
RFI NOISE SUPPRESSION NETWORK	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	
ENGRAVED DRIVE CABINET NAMEPLATE	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	
MANUAL SPEED POT	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	

1 = OPTION IS PRESENT

DRIVE OPERATION MODE SELECTION TABLE 5

#002 SETTINGS	RUN/STOP COMMAND	FREQUENCY REFERENCE	SEE NOTE
0	KEYPAD	KEYPAD	9
1	EXT. TERMINALS	KEYPAD	
2	KEYPAD	EXT. TERMINALS	9
3	FACTORY SETTING	EXT. TERMINALS	EXT. TERMINALS
4	KEYPAD	SERIAL COMM.	9
5	EXT. TERMINALS	SERIAL COMM.	
6	SERIAL COMM.	SERIAL COMM.	10
7	SERIAL COMM.	KEYPAD	10
8	SERIAL COMM.	EXT. TERMINALS	10

SPECIAL PARAMETER SETTINGS TABLE 4 (SEE NOTE 8)

PARAMETER	DATA	UNIT	DESCRIPTION/REMARKS
#001	3	N/A	READ/WRITE TO ALL PARAMETERS
#002	SEE TABLE 5	N/A	DRIVE OPERATION MODE SELECTION
#003	460(230)	V	STANDARD MAX VOLTAGE SETTING
	208	V	MAX VOLTAGE SETTING FOR BASE NO. "D..."
#006	1	N/A	REVERSE RUN DISABLED
#007	0	N/A	LOCAL/REMOTE KEY DISABLED
#018	60.0	S	ACCELERATION TIME
#019	60.0	S	DECELERATION TIME
#024	10.0	HZ	KEYPAD SPEED REFERENCE
#033	---	AMPS	MOTOR FULL LOAD AMPS- (MUST BE SET BY CUSTOMER)
#038	5	N/A	REMOTE/LOCAL (USED FOR NORMAL/TEST)
#039	9	N/A	TERMINAL S5 SELECTS AUTO/HAND SPEED REFERENCE SELECT
#040	21	N/A	PID CONTROL DISABLE
#043	1	N/A	TERMINALS F1 AND FV ANALOG INPUT SELECTION
#044	0	N/A	FOR OPTION P 0-10VDC AUTO MODE INPUT, WITH CONTROL BOARD JUMPER J1 CUT
	1	N/A	4-20MADC AUTO MODE INPUT
#055	1	N/A	MOMENTARY POWER LOSS RIDE THROUGH ENABLED
#056	20	%	SPEED SEARCH OPERATION LEVEL
#057	1.0	S	MINIMUM BASE BLOCK TIME
#058	25	%	V/F DURING SPEED SEARCH
#061	1	N/A	DRIVE FAULT RELAY DE-ENERGIZED DURING AUTO RESTART ATTEMPTS
#068	50	%	DC INJECTION BRAKING CURRENT LEVEL
#070	5.0	S	DC INJECTION BRAKING TIME AT START

NOTES:

- * COMPONENTS NOT SUPPLIED BY YASKAWA.
- CUSTOMER WIRING - FOR 0 TO 100 AMPS, USE #0'-75°C COPPER WIRE.
- ABOVE 100 AMPS, USE 75°C COPPER WIRE.
- CUSTOMER CONNECTION POINT ON PANEL MOUNTED TERMINAL BLOCK T81. TORQUE WIRE CONNECTIONS TO 10 LB. IN.
- FACTORY CONNECTION POINT ON DRIVE A1.
- REFER TO THE PRODUCT DESCRIPTION AND ASSOCIATED OPTION TABLES TO DETERMINE WHICH OPTIONS ARE PRESENT.
- 1. CONNECTED TO PANEL. CUSTOMER TO CONNECT PANEL GROUND LUG TO EARTH GROUND.
- 2. MOTOR OVERLOAD RELAY, S12, IS FACTORY SET FOR MANUAL RESET. CUSTOMER TO ADJUST S12 TRIP SETTING FOR THE AC MOTOR'S FULL LOAD AMPS.
- 3. TERMINALS SUPPLIED FOR INSERTION OF NORMALLY CLOSED CUSTOMER SAFETY CONTACTS I.E. FIRESTAT, FREEZE/STAT, WINDING OR BEARING TEMPERATURE ACTIVATED SWITCHES. IF APPLICABLE, REMOVE THE FACTORY INSTALLED JUMPER J1.
- 4. A. TERMINALS SUPPLIED FOR INSERTION OF CUSTOMER SUPPLIED DAMPER ELECTRIC PNEUMATIC VALVE (SOLENOID), WITH A MAXIMUM POWER RATING OF 30VA SEALED AND 87VA INBUH, USED TO CONTROL THE OPENING AND CLOSING OF A SYSTEM DAMPER. IF APPLICABLE, CHANGE DRIVE PARAMETER #004 TO 1.
- B. TERMINALS SUPPLIED FOR INSERTION OF CUSTOMER SUPPLIED, NORMALLY OPEN DAMPER END SWITCH (OPEN=DAMPER CLOSED, CLOSED=DAMPER FULLY OPEN). IF APPLICABLE, REMOVE THE FACTORY INSTALLED JUMPER J2.
- 5. INSULATED TWISTED SHIELDED WIRE IS REQUIRED. 2 CONDUCTOR #16GA. (SOLID ON #6780, OR EQUIVALENT). SHIELD TO CONNECT TO PROPER TERMINAL AS SHOWN. CONNECT THE SHIELD ONLY AT THIS END. STRIP AND ISOLATE THE OTHER END. DO NOT RUN THESE WIRES IN THE SAME CONDUIT AS THE AC POWER AND AC CONTROL WIRES.
- 6. DRIVE PARAMETER #070 IS PROVIDED TO PREVENT THE DRIVE FROM STARTING INTO A SPINNING MOTOR FOLLOWING A TRANSITION FROM THE BYPASS MODE TO THE DRIVE MODE OF OPERATION. CUSTOMER TO FIELD ADJUST #070 FOR THE DECELERATION TO STOP TIME (IN SECONDS) OF THE AC MOTOR FROM MAXIMUM SPEED, WHEN SWITCHING FROM THE BYPASS TO THE DRIVE MODE OF OPERATION.
- 7. WHEN PRESSURE TRANSDUCER (OPTION P) IS PRESENT (SEE OPTION TABLE 2), CONNECT THE PNEUMATIC SIGNAL AS SHOWN ON PAGE 1. SET PARAMETER #044 TO "0", AND CUT JUMPER J1 ON THE DRIVE CONTROL BOARD.
- 8. IF A "2 WIRE" OR "3 WIRE" INITIALIZATION IS PERFORMED ON THE DRIVE, THEN THE DRIVE PARAMETERS NEED TO BE RE-ENTERED, AS SHOWN IN THE SPECIAL PARAMETER SETTINGS TABLES 4 AND 5.
- 9. IF RUN/STOP IS TO BE PERFORMED VIA THE DRIVE KEYPAD, THEN THE CUSTOMER SAFETY INTERLOCK, THE DAMPER CONTROL AND THE DAMPER END SWITCH WILL NO LONGER FUNCTION. CONTACT THE FACTORY, IF THESE FUNCTIONS ARE REQUIRED.
- 10. SERIAL COMMUNICATIONS RUN/STOP CONTROL: THE CUSTOMER MUST ADD A JUMPER J3 BETWEEN POINTS 3 AND 4 ON THE PANEL MOUNTED TERMINAL BLOCK T81, AND THE HAND/STOP/AUTO SWITCH, S2 MUST BE IN THE "AUTO" POSITION, IF SERIAL COMMUNICATIONS IS TO BE USED TO CONTROL THE RUN/STOP OF THE DRIVE.
- 11. HAND/STOP/AUTO SWITCH OPERATION: THE FUNCTION OF THE HAND/STOP/AUTO SWITCH IS TO SELECT SPEED AND RUN/STOP CONTROL. THE AUTO POSITION SELECTS THE AUTO SIGNAL INPUT FOR SPEED AND A CUSTOMER SUPPLIED CONTACT FOR A RUN COMMAND. THE HAND POSITION SELECTS THE CABINET MOUNTED SPEED POT R1 FOR SPEED AND A RUN COMMAND ACTIVATED BY THE BYPASS/OFF/DRIVE SWITCH.
- 12. TEST/NORMAL SWITCH OPERATION: THE FUNCTION OF THE TEST/NORMAL SWITCH IS TO TEST THE DRIVE WHILE IN EITHER THE OFF OR BYPASS MODE. IF THE TEST/NORMAL SWITCH IS IN THE TEST POSITION WHILE OPERATING IN THE DRIVE MODE, THEN THE DRIVE WILL FAULT ON AN "E23". THIS FAULT MAY BE RESET BY FIRST SWITCHING TO EITHER "BYPASS" OR "OFF", AND THEN PRESSING RESET ON THE DRIVE KEYPAD.
- 13. FOR GROUND BYPASSES WITH A CONTROL TRANSFORMER, T1, POWER RATING OF 350VA OR GREATER, A SECONDARY FUSE, F6, IS ADDED.
- 14. SMOKE PURGE, OPTION S, OPERATION: THE FUNCTION OF THE SMOKE PURGE OPTION IS TO CAUSE THE MOTOR TO RUN AT FULL SPEED, ACROSS THE LINE, REGARDLESS OF ANY DRIVE, MOTOR OR CUSTOMER SAFETY FAULTS, WHEN THE CUSTOMER SUPPLIED NORMAL/PURGE SWITCH IS IN THE "PURGE" POSITION. IF THIS OPTION IS USED WITH THE PILOT LIGHTS OPTION, THEN BOTH THE "RUNNING ON DRIVE" AND "RUNNING ON BYPASS" PILOT LIGHTS WILL BE LIT IN THE "PURGE" AND "DRIVE" MODES.

CONTACT SEQUENCE CHART FOR S1

X = INDICATES CONTACT CLOSED

CONTACT	POSITION	MANUF. LOCATION / TYPE
	BYPASS OFF DRIVE	
1	X	1R0
2		X 1L0
3		X 2L0
4		X 3L0

* SCHEMATIC SHOWS THIS POSITION.

CONTACT SEQUENCE CHART FOR S2

X = INDICATES CONTACT CLOSED

CONTACT	POSITION	MANUF. LOCATION / TYPE
	HAND STOP AUTO	
1	X	1R0
2		X 1L0
3	X	2R0
4		X 2L0
5	X	3R0

* SCHEMATIC SHOWS THIS POSITION.

CONTACT SEQUENCE CHART FOR S3

X = INDICATES CONTACT CLOSED

CONTACT	POSITION	MANUF. LOCATION / TYPE
	TEST NORMAL	
1	X	1R0
2	X	1L0
3	X	2R0
4	X	2L0

* SCHEMATIC SHOWS THIS POSITION.

CONTACTS 4 AND 5 PRESENT ONLY WITH OPTION P.

* SCHEMATIC SHOWS THIS POSITION.