YASKAWA
A World of Automation Solutions™

Job Name:
Contractor:

Document: C21-OT
Sheet 2 of 2

PRODUCT DESCRIPTION ⇨ _ _ 0 _ _ _ _ _ _ _ T _ _ _ _

RATING (SELECT ONLY ONE)

RATED INPUT	DRIVE MODEL NO. GPD506V–	120% OL APPLICATIONS 100% CONTINUOUS OUTPUT CURRENT(A)	NOMINAL HP	BASE NO.
200V	A006	6	1 / 1.5	D10
	A008	8	2	D20
	A011	11	3	D30
	A017	17.5	5	D40
	A027	27	7.5	D50
	A036	36	10	D60
	A054	54	15	D70
	A068	68	20	D80
	A080	80	25	D90
	A104	100	30	DA0
230V	A006	6	1 / 1.5	A10
	A008	8	2	A20
	A011	11	3	A30
	A017	17.5	5	A40
	A027	27	7.5	A50
	A027	27	10	A60
	A036	36	15	A70
	A054	54	20	A80
	A068	68	25	A90
	A080	80	30	AA0
	A104	104	40	AB0
460V	B001	1.8	0.75	B10
	B003	3.4	1 / 2	B20
	B004	4.8	3	B30
	B008	8	5	B40
	B011	11	7.5	B50
	B014	14	10	B60
	B021	21	15	B70
	B027	27	20	B80
	B034	34	25	B90
	B041	41	30	BA0
	B052	52	40	BB0
	B065	65	50	BC0
	B080	80	60	BD0
	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 – CM043 METASYS N2 COMMUNICATIONS
Y2	2CN OPTION – CM045 FLN COMMUNICATIONS
Y3	2CN OPTION – CM047 ECHELON 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
X	DC BUS LINK REACTOR (BASE NO.'S A1–A9, B1–B9, D1–D8, 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)
	INPUT FUSING (BASE NO.'S A8–AB, B8–BE, D7–DA ONLY)
E	INPUT RFI FILTER

OPTION COMBINATION TABLE 3

OPTION	OPTION DESIGNATION						
	2	4	6	G	J	L	U
PILOT LIGHTS	0	0	0	1	1	1	1
RFI NOISE SUPPRESSION NETWORK	0	1	1	0	0	1	1
ENGRAVED DRIVE CABINET NAMEPLATE	1	0	1	0	1	0	1

1 = OPTION IS PRESENT

NOTES:

✳ COMPONENTS NOT SUPPLIED BY YASKAWA.

— CUSTOMER WIRING. – FOR 0 TO 100 AMPS, USE 60°–75°C COPPER WIRE. ABOVE 100 AMPS, USE 75°C COPPER WIRE.

○ CUSTOMER CONNECTION POINT ON PANEL MOUNTED TERMINAL BLOCK TB1. 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, FREEZESTAT, 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 97VA INRUSH, USED TO CONTROL THE OPENING AND CLOSING OF A SYSTEM DAMPER. IF APPLICABLE, CHANGE DRIVE PARAMETER n004 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 #18GA. (BELDON #8760, OR EQUIVALENT). SHIELD TO CONNECT TO PROPER TERMINAL AS SHOWN. CONNECT THE SHIELD ONLY AT THIS END. STUB 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 n070 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 n070 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.
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 J9 BETWEEN POINTS 3 AND 4 ON THE PANEL MOUNTED TERMINAL BLOCK TB1, 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 DRIVE KEYPAD 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 "EF3". THIS FAULT MAY BE RESET BY FIRST SWITCHING TO EITHER "BYPASS" OR "OFF", AND THEN PRESSING RESET ON THE DRIVE KEYPAD.
13. FOR GPD506 BYPASSES WITH A CONTROL TRANSFORMER, T1, POWER RATING OF 350VA OR GREATER, A SECONDARY FUSE, F6, IS ADDED.
14. AUTO TRANSFER, OPTION T, OPERATION:
    THE AUTO TRANSFER OPTION IS DESIGNED TO AUTOMATICALLY TRANSFER FROM THE DRIVE MODE OF OPERATION TO THE BYPASS MODE OF OPERATION, UPON A DRIVE FAULT CONDITION, WHEN THE BYPASS/OFF/DRIVE SWITCH IS IN THE "DRIVE" POSITION. THIS TRANSFER MAY BE RESET BY SWITCHING THE BYPASS/OFF/DRIVE SWITCH FROM "DRIVE" TO "OFF", WAITING A FEW SECONDS FOR THE KEYPAD LED DISPLAY TO GO BLANK, AND THEN SWITCHING BACK TO "DRIVE", ASSUMING THAT THE CONDITION WHICH CAUSED THE DRIVE TO FAULT HAS DISAPPEARED.

CONTACT SEQUENCE CHART FOR S1
X – INDICATES CONTACT CLOSED

CONTACT	POSITION BYPASS	OFF	DRIVE*	MANUF. LOCATION /TYPE
1	X			1RO
2			X	1LO
3			X	2LO
4			X	3LO
5			X	4LO

* SCHEMATIC SHOWS THIS POSITION.

CONTACT SEQUENCE CHART FOR S2
X – INDICATES CONTACT CLOSED

CONTACT	POSITION HAND	STOP	AUTO*	MANUF. LOCATION /TYPE
1	X			1RO
2			X	1LO
3	X			2RO

* SCHEMATIC SHOWS THIS POSITION.

CONTACT SEQUENCE CHART FOR S3
X – INDICATES CONTACT CLOSED

CONTACT	POSITION TEST	NORMAL*	MANUF. LOCATION /TYPE
1		X	1RO
2	X		1LC
3	X		2RC
4	X		2LC
5		X	3RO

* SCHEMATIC SHOWS THIS POSITION.

SPECIAL PARAMETER SETTINGS TABLE 4 (SEE NOTE 8)

PARAMETER	DATA	UNIT	DESCRIPTION/REMARKS
n001	3	N/A	READ/WRITE TO ALL PARAMETERS
n002	SEE TABLE 5	N/A	DRIVE OPERATION MODE SELECTION
n003	460(230)	V	STANDARD MAX VOLTAGE SETTING
	208	V	MAX VOLTAGE SETTING FOR BASE NO. "D_"
n006	1	N/A	REVERSE RUN DISABLED
n007	0	N/A	LOCAL/REMOTE KEY DISABLED
n018	60.0	S	ACCELERATION TIME
n019	60.0	S	DECELERATION TIME
n024	10.0	HZ	KEYPAD SPEED REFERENCE
n025	6.0	HZ	HAND MODE SPEED REFERENCE
n033	----	AMPS	MOTOR FULL LOAD AMPS– (MUST BE SET BY CUSTOMER)
n038	5	N/A	REMOTE/LOCAL (USED FOR NORMAL/TEST)
n040	21	N/A	PID CONTROL DISABLE
n043	0	N/A	0–10VDC AUTO MODE SIGNAL (FACTORY SETTING)
	1	N/A	4–20MADC AUTO MODE SIGNAL
n055	1	N/A	MOMENTARY POWER LOSS RIDE THROUGH ENABLED
n056	20	%	SPEED SEARCH OPERATION LEVEL
n057	1.0	S	MINIMUM BASE BLOCK TIME
n058	25	%	V/F DURING SPEED SEARCH
n061	1	N/A	DRIVE FAULT RELAY DE–ENERGIZED DURING AUTO RESTART ATTEMPTS
n068	50	%	DC INJECTION BRAKING CURRENT LEVEL
n070	5.0	S	DC INJECTION BRAKING TIME AT START

DRIVE OPERATION MODE SELECTION TABLE 5

n002 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