



Calamba Water District

Lakeview Subdivision, Halang, Calamba, Laguna
 Tel. Nos. 545-2863, 545-1614, 545-7895, 545-1389
 TeL/Fax. (049) 545-9752

VARIABLE FREQUENCY DRIVE SPECS.

50Hp, 460V, 3-phase, 60Hz.

- 1) 250 AT Main circuit breaker
- 2) With Direct on-line stop and start (By-pass)
- 3) BW control for liquid water level indicator
- 4) Selector switch for Auto and manual
- 5) Terminal connector from VFD and submersible cable
- 6) light indicator for running and stop
- 7) Start and running contactor
- 8) Lightning arrester

MAINS SUPPLY (L1, L2, L3)

Supply Voltage	1 or 3 x 200 -240 Volts $\pm 10\%$ 1 or 3 x 380 -480 Volts $\pm 10\%$
Supply Frequency	50/60Hz
True power factor	≥ 0.9
Switching on input supply L1, L2, L3	1 - 2 times/min.

OUTPUT DATA (U,V, W)

Output Voltage	0 - 100% of supply voltage
Switching on output	Unlimited
Ramp times	1 - 3600 sec.
Close loop	1 - 132 Hz

DIGITAL INPUTS

Programmable digital inputs	6 (can be use as digital outputs)
Logic	PNP or NPN
Voltage level	0 - 24 V
Thermistor input	1

ANALOG INPUT

Analog inputs	2
Modes	Voltage or current
Voltage level	0 - 10V (Scaleable)
Current level	0/4 - 20 mA (Scaleable)

PULSE INPUT

Programmable pulse input	2
Voltage level	0 - 24 VDC (PNP positive logic)
Pulse input accuracy	(0.1 - 110 kHz)
Utilize some of the digital inputs	

ANALOG OUTPUT

Programmable analog outputs	1
Current range at analog output	0/4 - 20 mA
Max. load (24 V)	130 mA

RELAY OUTPUTS

Programmable relay outputs (240VAC, 2 A and 400VAC, 2 A)	2
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FIELD BUS COMMUNICATION

Standard built in: FC Protocol Modbus RTU	Optional:
	PROFIBUS
	DeviceNet
	EtherNet/IP
	Modbus TCT IP
	ProfiNet

TEMPERATURE

Ambient temperature	Up to 55° C
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ENCLOSURE	IP55 or IP66
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APPLICATION

- a) Real time clock with battery back-up
- b) General purpose I/O option:
3 digital inputs, 2 digital outputs, 1 analog current output,
2 analog voltage inputs.
- c) Relay option/cascade controller option:
3 relay outputs
- d) External 24VDC supply option:
24 VDC external supply can be connected to supply control
and option cards.

e) Brake chopper option:

Connected to an external brake resistor, the brake chopper limits the load on the intermediate circuit in case the motor acts as generator

f) Analog sensor input option with up to 3 temperature sensor inputs


POWER OPTION

a) Advance harmonic filters: for application where reducing harmonic distortion is critical.

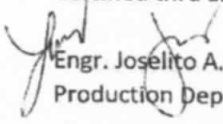
b) dU/dt filters for providing motor isolation protection.

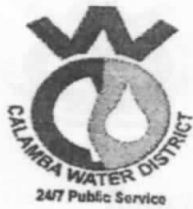
c) Sine filters (LC filters): for noise less motor

Prepared by:


Pedro M. Estalar
Water Maint. Head

Certified thru and correct


Engr. Joselito A. Gillera
Production Department Head



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VFD WITH PHASE CONVERTER WITH BOX ENCLOSURE AND CONTROL BY THE FOLLOWING STUFF 30HP & 40HP, 230 VOLTS


- 1) 150 AT Main circuit breaker
- 2) With Direct on-line stop and start
- 3) BW control for liquid water level indicator
- 4) Selector switch for Auto and manual
- 5) Terminal connector from VFD and submersible cable
- 6) light indicator for running and stop
- 7) Running contactor
- 8) Lightning arrester
- 9) Over/under voltage relay
- 10) On - time delay

CAPACITY	: 30 Hp, 40Hp
INPUT	: 230Volts Single phase
OUTPUT	: 230Volts 3-phase
VOLTAGE	: 200-230VAC (+10% to -15%)
FREQUENCY	: 50/60Hz (±5%)

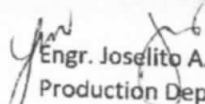
Equipped with following

- 1 1 Analog Input (0-10V, 4-20mA)
- 2 2 Programmable Multi-function Inputs
- 3 2 Operation Control Inputs (FWD/REV)
- 4 1 Analog output (0-10VDC)
- 5 1 Multi-function Output relay
- 6 3 digit, 7 segment LED display
- 7 150% rated current for 1 minute
- 8 200% instantaneous overcurrent
- 9 Electronic overload protection and stall prevention
- 10 Ground fault and shot circuit protection

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Reduce – Voltage Auto-transformer Starter with complete accessories

QUANTITY	CAPACITY	VOLTAGE	PHASE/Hz
1-unit	30Hp	230volts	3 - phase 60
3-units	50Hp	230volts	3 - phase 60
2-units	30Hp	460volts	3 - phase 60
3-units	50Hp	460volts	3 - phase 60

MOTOR CONTROL SPECIFICATIONS and ACCESSORIES

Auto transformer type reduce voltage magnetic starter with breaker, running, shorting and running contactor, thermal overload relay, over/under voltage relay, anti single phasing/ phase failure relay, liquid level control with sensing electrodes, transient surge suppressor (TVSS), relays, start/stop pushbutton, meterings with ATS / VTS, H-O-A selector switch indicating pilot lights, on delay timer enclose in NEMA 12 enclosure.

QUANTITY	CAPACITY	VOLTAGE	PHASE/Hz
12-units	10Hp	230volts	1 - phase 60

Direct on line magnetic starter with combination circuit breaker, magnetic contactor, thermal overload relay, over/under voltage relay, liquid level control with sensing electrodes, transient surge suppressor (TVSS), relays, start/stop pushbutton, meterings, H-O-A selector switch indicating pilot lights enclose in NEMA 12 enclosure.

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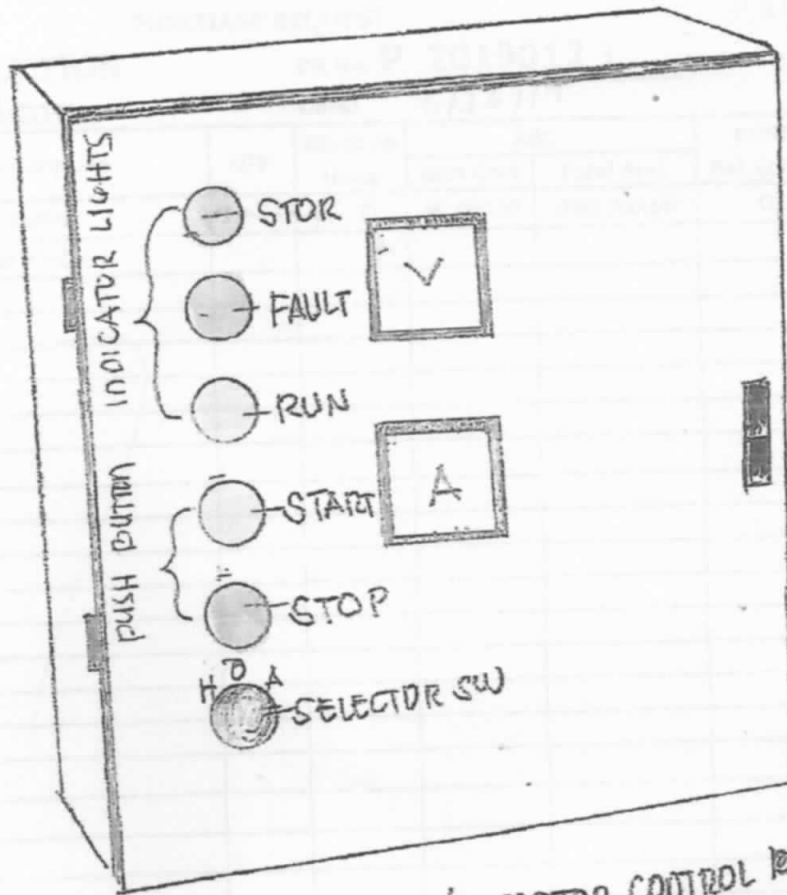

Pedro M. Estalar

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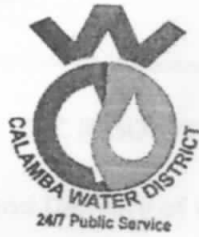
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Manager - Production Department



10 HP, 230V, 1 ϕ MOTOR CONTROL BOX
DESIGN



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MANUAL TRANSFER SWITCH SPECIFICATIONS

Features (150 x 150 Ampere trip)

Standard units include the following:

- Two molded case switches with inherent arc quenching
- Mechanical walking beam interlock
- Line and load lugs for copper wire only
- Common load bus
- UL 1008 listed (non-automatic transfer switch)
- Instantaneous trip
- 100% rated

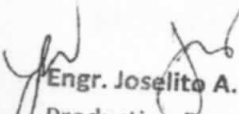
Options

- Configured as service entrance equipment
- Nema 1 or 3R
- 100% rated neutral and ground
- Enclosure locking means
- Auxiliary contacts & shunt trips (3 pole only)
- Optional interrupting ratings
- Electrical operator modification kit
- Portable generator receptacle for alternate source (Camload Connects 400A)
- Overcurrent trips

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