

# THAYER SCALE

PROCESS MEASUREMENT & CONTROL EQUIPMENT

## ***"PCA" POWER CONTROL ASSEMBLIES***

- Save Time
- Save Money
- Ensure Performance
- Pre-packaged Control Assemblies from THAYER



## MOTOR CONTROL SOLUTIONS

The THAYER series of PCA'S (Power Control Assemblies) accept standard AC power sources and converts them to an adjustable output capable of controlling typical driving devices, such as AC or DC Motors and Vibratory trays. The output of these drives can be controlled manually (Hand) or automatically (Remote) and may be used for any application described in this brochure.

### ALL DRIVES OFFER THE FOLLOWING DRIVE CONTROL FUNCTIONS

DIGITAL INPUTS	ANALOG INPUTS	DIGITAL OUTPUTS
Hand/Off/Remote	Hand Speed Adjust	Hand Mode
Hand Start & Stop	Remote Speed Adjust	Remote Mode
Remote Start & Stop		Run/Stop
Emergency Stop		
Remote Enable		
Motor Thermostat		

Digital Inputs are discrete signals that can be provided from a variety of field sources, such as; selector switches, push buttons, dry contacts or even 120 VAC PLC outputs. Analog Inputs can be programmed to accept a current or voltage signal typically from process control equipment or potentiometers. Digital Outputs are Form A Contacts and are used to report the operating status of the drive.

Standard package offering is open chassis, optional packaging offering include a selection of enclosures. Enclosures have a choice of standard and/or optional mounting and latching styles. Other options include Operator Stations, commonly required by most industries and often referred to as HOA'S. This option can be supplied as part of the enclosure option or as a stand alone unit and include, Hand-Off-Remote Selector Switch, Hand Start and Stop Push Buttons and Hand Speed Adjust Potentiometer. These four basic controls along with the enclosure latching options meet or surpass most facilities safety, maintenance, set-up, calibration and troubleshooting requirements and needs.

Each drive maintains the same control strategy and use many identical sub-components therefore giving them the same functionality inside and out. This concept not only simplifies all aspects of training, operation and calibration it minimizes the amount of spare parts required to perform basic preventative and general maintenance.

## AC OUTPUT POWER CONTROL ASSEMBLY

The Power Control Assembly (PCA) or Drive Controller is designed to accept a standard 380-480VAC 3 Phase 50 or 60 Hertz Power Source. This unit takes the incoming AC line voltage and converts it to an adjustable frequency output by means of an Electronic Drive Controller. The Drive Controller is controlled by either a Manual Speed Potentiometer or by an External Input Speed Signal and can be used in applications that meet the following specification ranges:

½ - 2 Horsepower, 380-480 VAC, 3 Phase Inverter Duty Induction Motors (PCA-V40-480).

NOTE: Refer to User Manual for further details on motor types.

The PCA is a basic analog Drive Controller package. As such, it will be necessary to provide the required operator interface controls or equivalent input contacts.

These are as follows:

- Hand-Off-Remote Selector Switch or Contacts
- Hand Speed Adjust Potentiometer
- Remote Speed Adjust Signal
- Hand Start Push Button or Contact
- Hand Stop Push Button or Contact
- Remote Enable Push Button or Contact
- Remote Stop Push Button or Contact
- Emergency Stop Push Button or Contact
- Motor Thermostat Contact

This assembly is also equipped with several outputs and report back contacts that can be used to monitor the status of the PCA.

These are as follows:

- Instrument Interlock (Used for Thayer Scale Instruments)
- Drive Enabled/Stopped Contacts
- Remote Mode Selected Contact
- Electronic Drive Module Fault Contacts
- Optically Isolated Drive Module Output Contacts
- Drive in Hand Mode Contact (Requires optional operator station)
- Drive in Remote Mode Contact (Requires optional operator interface)
- Programmable Electronic Drive Module Analog Output
- Communication Port, RS485 (DSI)

The PCA is available with many standard and optional features, such as; open chassis and enclosed style options, Local/Remote Operator Station options and communication options. Each assembly contains Protective Fusing, Input/Output Connection Terminal Strip, Electronic Drive Controller, and other related components needed to complete a basic analog drive controller package. Enclosed styles include a Locking Enclosure Power Disconnect and for safety reasons open chassis styles requires the installer provides an external locking disconnect.



## DC OUTPUT POWER CONTROL ASSEMBLY

The Thayer Power Control Assembly (PCA) is designed to accept standard AC Power Sources. This unit takes the incoming AC line voltage and converts it to an adjustable DC voltage by means of an SCR controller. The DC voltage's amplitude is controlled by either a manual speed potentiometer or by remote current signal. The adjustable DC voltage is capable of controlling conventional shunt wound or permanent magnet DC motors.

The controller may be used in applications within the following ranges:

PCA-115 1/4 - 1 Horsepower at 115 VAC single phase input

PCA-230 1/2 - 2 Horsepower at 230 VAC single phase input

NOTE: At input voltages higher than specified above contact factory for options.

The PCA is a basic analog drive controller package. As such, it may be necessary to provide a number of required operator controls or equivalent user contacts.

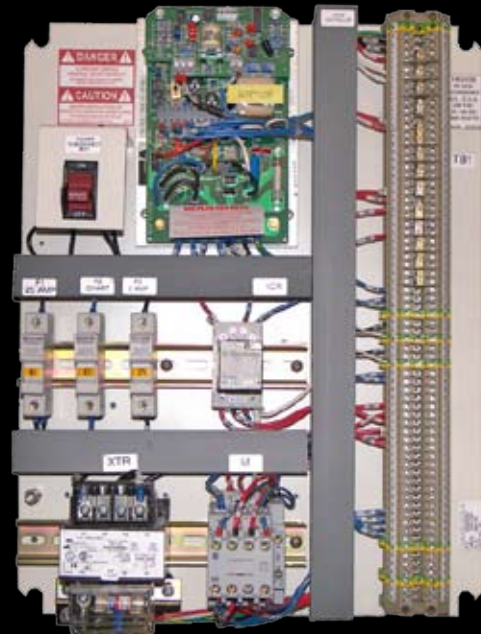
The control functions are as follows:

- Hand / Remote Switch or Contacts
- Hand Speed Adjust Potentiometer
- Remote Speed Adjust Signal (1 - 5 mA or 4 - 20 mA)
- Hand Start Push Button, Switch or Contact
- Hand Stop Push Button, Switch or Contact
- Remote Start Push Button, Switch or Contact
- Remote Stop Push Button, Switch or Contact

The PCA is available in a Nema 4 or 4X wall mount enclosure, or as an open chassis unit designed for customer panel mounting.

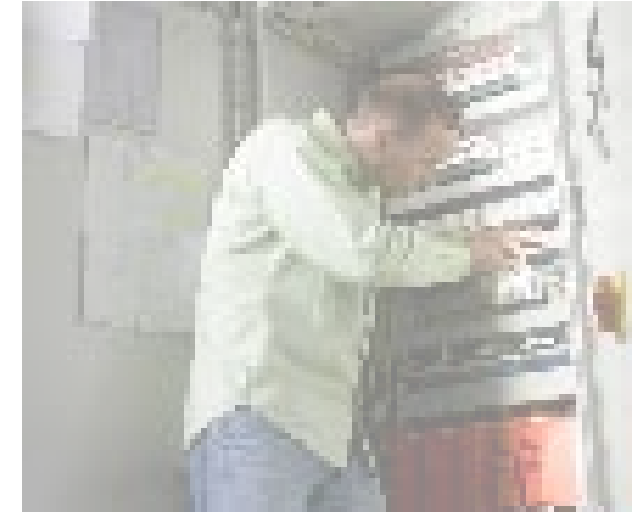
This unit consists of an SCR Controller, Locking Power Disconnect Switch, Motor Starter and other related components needed to complete a basic analog drive controller package.

For explosion proof applications the Power Control Assembly can be fitted with either an X or Z Purge System or NEMA 7/9 explosion proof enclosure depending on application.



## Performance Tested at THAYER

- *Pre-tested with actual product upon request.*
- *Pre-engineered for conveyor performance.*
- *Engineered for optimal motor performance.*
- *Washdown controls available.*



CUSTOM CONTROL CABINETS

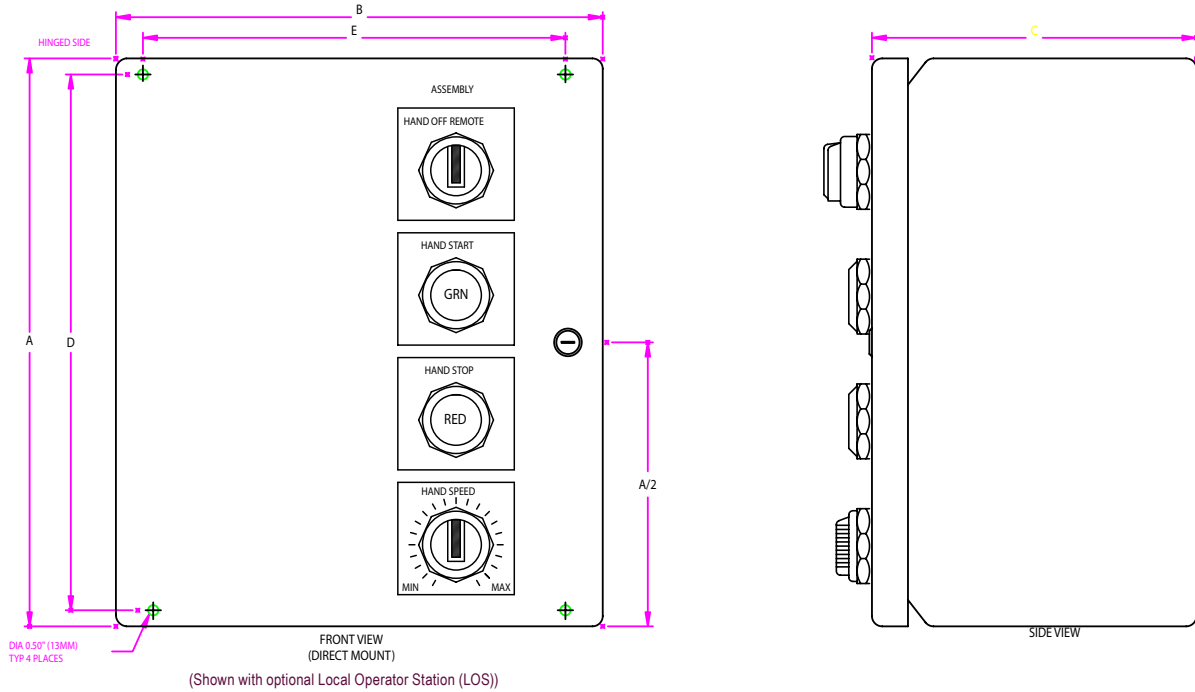


PCA ASSEMBLY fitted with panel purging system for explosion proof application



REMOTE OPERATOR STATION FOR MOUNTING AT THE EQUIPMENT

ENCLOSURE DIMENSIONING DETAILS  
SEE TABLE FOR DETAILS



STANDARD ENCLOSURE DIMENSION TABLE

MODEL NUMBER	UNIT DESCRIPTION	ENCLOSURE SIZE A x B x C	ENCLOSURE MOUNTING D x E	PANEL SIZE H x W x D
PCA-VDC-120 PCA-VDC-240	DC DRIVE DC MOTORS	20.00 X 16.00 X 8.00 (508 X 406 X 203)	18.50 X 14.50 (470 X 368)	18.25 X 14.25 X 6.00 (464 X 362 X 152)
PCA-VIB-120 PCA-VIB-240	AC DRIVE VIBRATORY FEEDERS			
PCA-LRF-120	DC DRIVE BRUSHLESS DC MOTORS			
PCA-V40-480 PCA-V70-480	VFD DRIVE AC INVERTER MOTORS	24.00 X 20.00 X 8.00 (610 X 508 X 203)	22.50 X 18.50 (572 X 470)	22.25 X 18.25 X 7.00 (565 X 464 X 178)



THAYER SCALE-HYER INDUSTRIES, INC.

91 Schoosett St., Pembroke, MA 02359  
Ph: 781-826-8101 Fax: 781-826-7944  
e-Mail: Sales@ThayerScale.com  
WEB: www.ThayerScale.com

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MADE IN USA