DiT Incorporated

TRIPMASTER MOD
Modular EPO Control for Data Centers

FEATURES

- 4,8,12,16 or 20 EPO Relay Outputs.
- Heavy Duty 10 Amp Relay Outputs.
- 3 Independent EPO Input Channels
- High speed EPO Inputs.
- Time Delay protected EPO Inputs.
- Field Adjustable Time Delays.
- Field Selectable Outputs.
- 24VDC output to REPO Switch Lamps
- Key locked EPO Safe/Armed switch (for maintenance work on the EPOCC without tripping the shunt)
- Audible Alert in Safe Mode.
- Expanded Remote Alarm Outputs

OPTIONS

- TM-BTY Battery Backup
- TM-TD Time Delay (s) 1-30 second time delay to prevent accidental shunt tripping
- TM-AD Internet remote alert for Emails, Text Messages, SNMP and MODBUS

RECOGNIZED COMPONENT
INFORMATION TECHNOLOGY EQUIPMENT
51814
CONFORMS TO UL STD 1950

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The TripMaster MOD-DP (Modular) Emergency Power Off Control Center (EPOCC) is designed to handle heavy switching loads with field selectable versatility to provide the best EPO solution for any facility. The TM-MOD-DP simplifies designing EPO control systems by providing individual relay outputs for as few as 4 outputs to as many as 20 isolated high current relay outputs different systems in the data center. Using our standard switches and leds it saves cost over our industrial leds and switches.

The standard design of the TM-MOD-DP eliminates the problems found when using custom designed and site built EPO control systems. The TM-MOD-DP is a perfect control for EPO operations in data centers, clean rooms and telecom rooms. Three independent EPO inputs allows the customer or engineer to easily choose one input for EDPO buttons, another for fire panel input and still another for a time protected input to prevent accidental shutdown. All EPO inputs can be protected using multiple time delays and each can be field selected for the best protection timing.

The relay output modules provide four Form "C" non-powered relay contacts on each board. Each relay contact is protected with individual MOVs for a lifetime of dependable relay operation. The 10 amp continuous duty contacts can control virtually any emergency shut down duty. Each relay output is isolated making it easy to mix control voltages without risky onsite wiring fixes. Simple select the number of EPO control outputs required and use the number of relay output boards to provide the emergency control. Should the facility grow in the future simply add additional relay output boards.

EPO OPERATION
When a remote EPO switch or fire alarm contact is activated a latching relay senses the signal and locks all the output relays modules on that EPO channel in the EPO position. Once in an emergency position, the TM-MOD-DP will require a manual reset to return to normal operation.

Battery Backup
Each TM-MOD-DP is supplied with a DC voltage power supply that provides an input for standard batteries. The TM-MOD-DP also provides charging for the batteries.

Time Delay
The TM-MOD-DP can be equipped with up to three optional adjustable time delays for the EPO latching circuit. The Time delay (TM-TD) will prevent accidental shunt tripping by delaying the EPO shutdown input. This will prevent accidental shut down due to human error when depressing control buttons next to exit doors.

EPO SELECT SWITCH
Operator selectable with the provided key allows the TM-MOD-DP to be placed in the ARMED, OFF or SAFE mode. Armed is for normal operation, OFF disables the panel, SAFE is used for field testing without EPO outputs activating.

CONTROL BOARD
The control board supplies all the field terminal blocks for connecting input power, EPO input devices, batteries, alarm outputs and strobe and horn controls. The control board connects and controls the downstream EPOB output boards and connects the optional time delays to the proper EPO input channel.
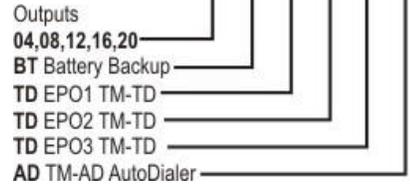
EOPB OUTPUT BOARDS
These heavy duty relay output control boards provide 4 isolated and protected Form C relay outputs per board. The EPOBs are daisy chained together to supply up to 20 total industrial duty outputs for controlling the critical systems in the facility. Each EPOB can be selected to operate on any or all three EPO input channels by using the jumpers provided. This feature allows each EPOB to operate it's control outputs in combination with other EPOBs according to the EPO inputs.
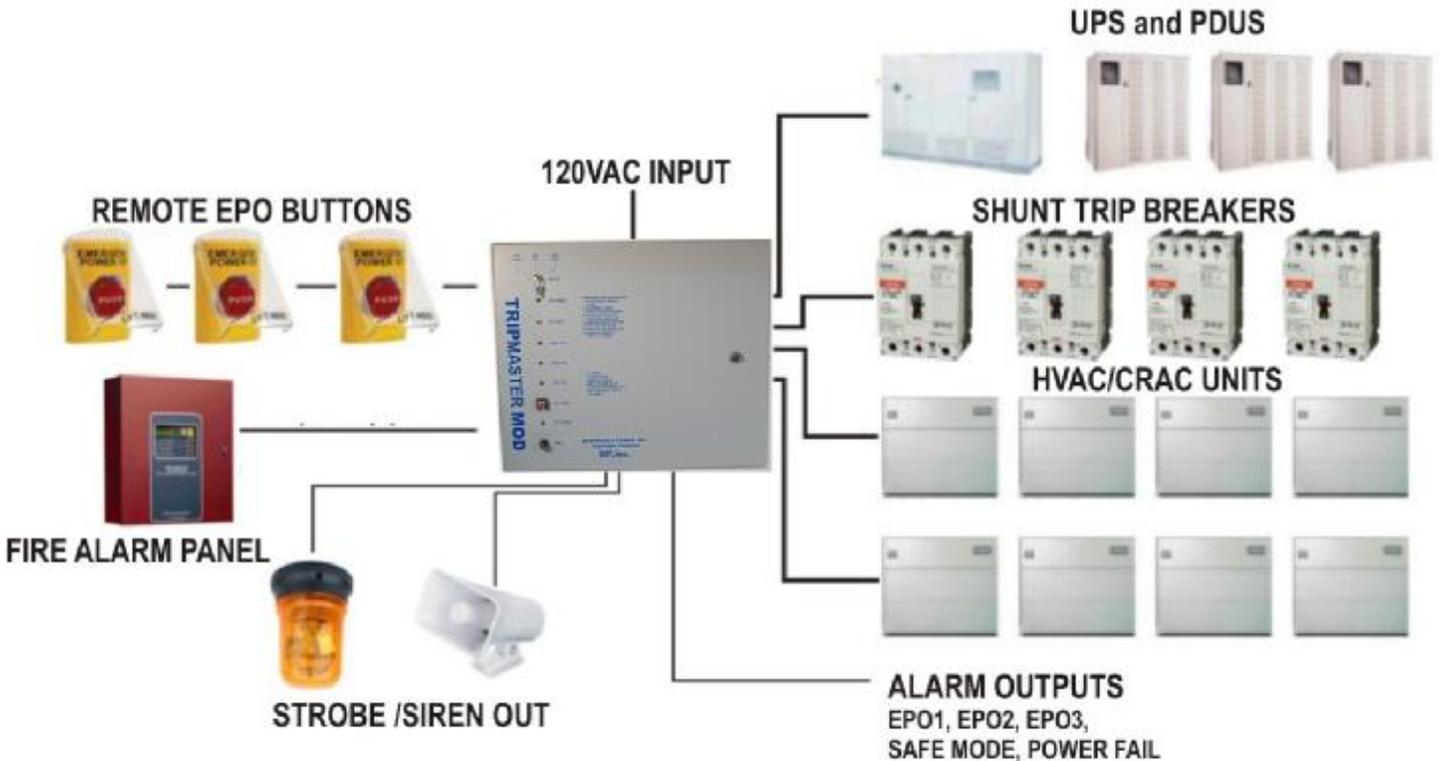
EPO Input Channels
The TM-MOD-DP provides three individual EPO channels for shut down control. All channels can be instant or time delayed. Time delays are field selectable from 0-30 seconds. Each EPO input channel can be selected to operate the EPO output boards. Now the door push buttons can operate HVAC and exhaust fans while the Fire panel can add power shut down for UPSs, PDUs and building Switch Gear. Now it's all selectable in the field without fear of accidental or unwanted shut downs due to faulty coding or PLC failure.

SPECIFICATIONS

TM-MOD-DP-00-00-00-00-00-00

Outputs
04,08,12,16,20
BT Battery Backup
TD EPO1 TM-TD
TD EPO2 TM-TD
TD EPO3 TM-TD
AD TM-AD AutoDialer

TM-BTY	Sealed lead Acid Batteries
TM-TD	Adjustable Time Delay
TM-AD	Ethernet AutoDialer
Electrical	
Power	120VAC @ 3 amps
Relay Outputs	120VACV@10AMPS Cont.or 20
EPO Inputs	3 Independent
Control Switches	
EPO Reset	Push button
EPO Select	Key Lock Switch
Remote Switches	
EPO Input type	N/O Dry Switch or Relay
Dimmensions	
TM-MOD 4, 8, 12, 16, 20	H 17.0″ W 19.0″ D 3.50″
Electrical Knockouts	1/2″ on Top and Bottom
Environmental	
Temperature	0-125 F
Humidity	5-95%Rh Non-condensing
Color	Blue Box/Gray Front

REMOTE EPO BUTTONS — 120VAC INPUT — UPS and PDUS — SHUNT TRIP BREAKERS — HVAC/CRAC UNITS — FIRE ALARM PANEL — STROBE /SIREN OUT — ALARM OUTPUTS EPO1, EPO2, EPO3, SAFE MODE, POWER FAIL

Control Board Components

TB4 Power Input 24VAC from transformer supplied.
TB5 12VDC Battery Input for battery backup.

TB1 EPO 1 Input Normally Open dry contact input. A contact closure will initiate the EPO sequence for this input only.

TB2 EPO 2 Input Normally Open dry contact input. A contact closure will initiate the EPO sequence for this input only.

TB3 EPO 2 Input Normally Open dry contact input. A contact closure will initiate the EPO sequence for this input only.

TB6 Remote Alarm Outputs for signaling other alarm or building control systems on the TripMaster events. Provides a Normally Open dry contact for each alarm event that closes when the alarm is active.

TB8 Strobe/Horn output. Normally Open dry contacts that will close when any EPO input is latched on.

Alarm Silence Button When the TripMaster is placed in the SAFE mode using the key lock switch the audible alert will sound indicating an Off Normal condition. Pressing the silence button will silence the audible while maintenance is preformed.

P8 Output control to EPO Boards.
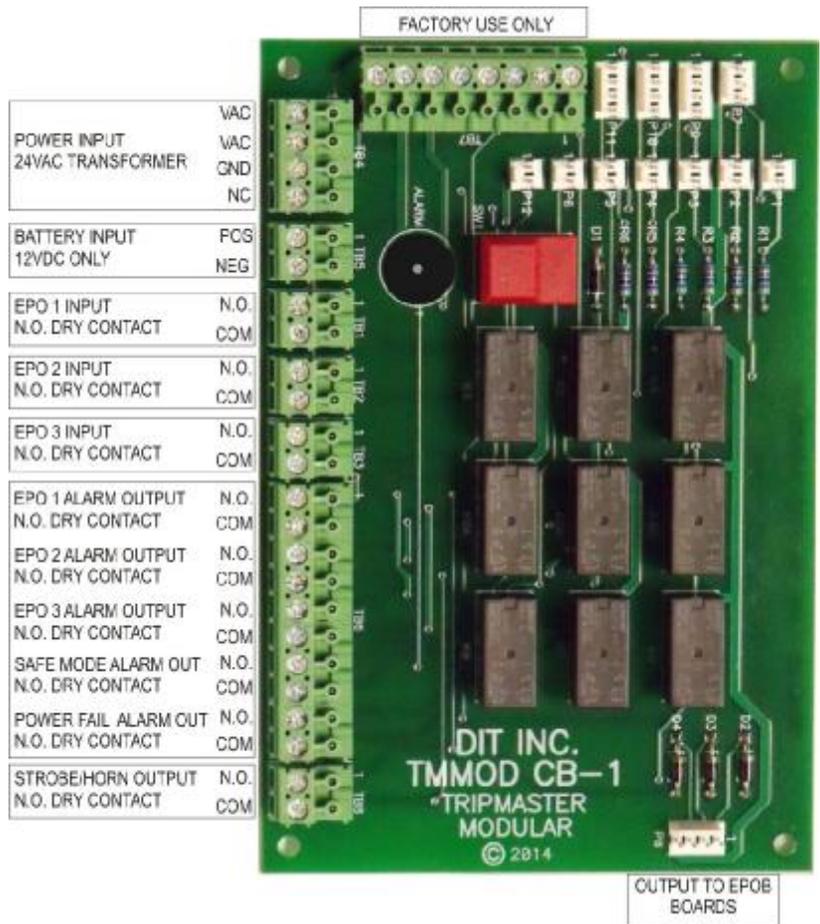
EPOB EPO Board Components

TB1 EPO Relay output terminal block. 4 isolated relay outputs may be connected to facility equipment for emergency power off control.

M1-8 MOVs to protect relay contacts during switching.

K1 EPO Relay. Provides four dry relay contacts to TB1. Each relay contact is rated at 10amps/120vac continuous.

P1-2 Connectors used to connect the EPOB to the CB1 control board and pass on the connection to other EPOBs.

LED1 Lights when the K1 relay is on.

EPO Select Jumper Selects which EPO input will operate the K1 EPO relay. The K1 relay will not make close unless the jumpers are set. See the options below.

No EPO Selected
EPO 1 Only Selected
EPO 2 Only Selected
EPO 3 Only Selected
EPO 1 and EPO 2 Selected
EPO 2 and EPO 3 Selected
EPO 1 and EPO 3 Selected
EPO 1, EPO 2, EPO 3 Selected

EPO Inputs

The TripMaster Mod offers three EPO inputs. Each input is independent of the others. Each input can have an optional time delay (TM-TD) or operate instantly. All EPO inputs require a normally open (N.O.) dry contact to operate. When any EPO input is closed the CB1 control board will either start a time delay or instantly latch the input. At the end of the time delay the EPO input will latch. A LED will light on the panel and a set of remote alarm contacts will close to alert other monitoring and control systems. Depending on how the EPO Boards (EPOB) are programmed, the EPOBs selected to operate with the EPO input will close and shutdown the wired facility equipment.

Now one off-the-shelf control panel can easily shutdown the facility HVAC equipment with one EPO input while shutting down the power systems with another and finally shutting down every system when a fire alarm is present.

Fire Alarm Panels

An alarm contact or module from the FACP signals the TripMaster of a shutdown.

Remote EPO Switches

A wide variety of REPO switches can be used at exit door. They can be individual or ganged together.

Time Delays allow for protection against accidental EPO events. Our delays are adjustable from 0-5minutes. They are factory set for 10 seconds. When an EPO input is present the TD starts timing. At the end of the time delay the EPO event will latch and shutdown facility equipment. If during the time delay the EPO input is reset the TD will stop and reset and NOT shutdown the wired equipment. Simple, safe assurance.

SAFE Mode

The TripMaster MOD come standard with a key locked selector switch to place the control in the SAFE mode for installation or maintenance. While in the SAFE mode no EPO output boards will operate allowing remote EPO switches to be added or tested without fear of shutdown the facility. When in the SAFE mode an LED will light on the panel front and an audible alarm will sound to alert personnel of the override. A set of contacts will also close to signal any other building monitor, guard station or BMS system of the override. To return to normal simply use the key to return to ARMED mode. An LED on the panel from indicates the system is ARMED and normal mode.

TripMaster Auto-Dialer

The optional (TM-AD) allows the TM-MOD to remotely announce alarms using the Internet to email, cell phones, SMTP or MODBUS. This option requires an Ethernet connection to the Internet provided by others. The alarm inputs to the TM-AD are factory pre-wired. Six total alarm types can be sent to remote cell phones or tablets as text messages. Emails can be sent to remote PCs or direct connection to other facility monitoring or control systems using SNTP or MODBus. TM-AD is field programmed via web browser and the TM-AD stores historical data logging of alarm events.

The TM-AD optional can be added at the factory on order or as a separate panel to existing field systems.

Alarm Notifications

EPO1, EPO2 and EPO3 Activate, EPO SAFE Mode and Power Fail plus 1 spare alarm.

Notification Types

Email, Text Message, SNMP Traps, MODBUS/TCP Slave and HTTP Web page.

Contact DiT, Inc or one of our sales representatives for more information, pricing and delivery.