## M-7651A D-PAC



## Protection, Automation and Control System for Power Distribution Applications



### Death or severe electrical shock can occur.

**WARNING:** In no case should the line current circuit be interrupted with the regulator or transformer energized. Do not remove auxiliary current transformers without shorting the current inputs.

Exercise care during installation, operation and maintenance procedures

The equipment described in this guide contains voltages high enough to cause serious injury or death. Only qualified personnel should install, operate, test, and maintain this equipment. Be sure that all personnel safety procedures are carefully followed. Exercise due care when operating or servicing alone.

#### LCD SCREEN

Pressing any pushbutton will wake up the LCD and display the heading corresponding to the "Shortcut" label inside the pushbutton - MNTR, SETP, COMM, CNFG or UTIL.

#### **HMI SHORTCUTS/ARROWS**

**MNTR** – Direct access to the Monitoring Screens and navigates "LEFT".

**SETP –** Direct access to the Setpoints Screens and navigates "UP".

**COMM** – Access to the Communication Screens and navigates "RIGHT".

**CNFG** – Access to the Configuration Screens and navigates "DOWN".

**ENT/UTIL Pushbutton –** Direct access to the Utilities screens and ENTER pushbutton. While navigating through the different HMI menus, the ENT pushbutton is used to:

- Enter the edit mode of a screen
- Store a setpoint or condition in memory
- Enter the sub heading data level
- Reset certain monitoring screens

**EXIT/WAKE Pushbutton** – The **WAKE** Pushbutton is used to wake the LCD from sleep mode and start scrolling through a list of user programmed metered/ calculated values. While navigating through the different HMI menus, the **EXIT** pushbutton is used to Exit a level to the next higher level, cancel data entry or display user lines.

SELECT PHASE Pushbutton - is not operable.

**ALT SETTINGS –** Allows the user to switch the active profile to any of the 8 available profiles.

**RESET –** The Reset pushbutton resets targets and lockouts.

#### **PROGRAMMABLE LEDs**

20 Programmable LEDs that can be customized using IPScom<sup>®</sup> Communications Software "Front Panel Functions" menu.

### **PROGRAMMABLE PUSHBUTTONS**

Pushbuttons that can be customized using IPScom Communications Software "Front Panel Functions" menu.

**TRIP** – Operates the breaker by tripping all three phases at once.

**CLOSE –** Operates the breaker by closing all three phases at once.

**HLT/MAINT.** – Enables the use of the Hot Line Tag/ Maintenance Mode programmed settings for the profile currently in use.

**REMOTE DISABLE –** Blocks and unblocks remote control/operation of the recloser.

**LOCK** – Toggles the Lock/Unlock state of the front panel right side pushbuttons. The TRIP pushbutton remains accessible in the LOCK state.

### USB PORT/SD CARD SLOT

**USB Port –** Used for local programming via PC using IPScom Communications software.

Smart Flash SD Card Slot – Allows the user to: Load and Save Setpoints, Save and Load Clone Files, Save Data Files and Events Records, Use SD Card as a Physical Security Key, and Update Firmware and Bootloader.



Quick access to the M-7651A page to download technical support literature.

# M-7651A D-PAC

#### $(\mathbf{r})$ • IN 1 IN 2 IN 3 IN 4 OUT 1 OUT 2 OUT 3 OUT 4 1 2 1 2 1 2 1 1 2 1 <td + <sup>P/S</sup> (±) 12 ----10 (+тв2 🖉 🖉 ØØØ твз TB1 🖉 $\oplus$ тх⊕⊕ ETHERNET ( вх TIA-232 (+) $(\mathbb{F})$ 0 0 $\oplus$ Ο $\bigcirc$ $\bigcirc$ PORT 3 PORT 2 WARNINGI CONTACT WITH TERMINALS + PORT 4 PORT 1 AUX IN 5 IN 6 IN7 1 2 1 2 1 2 1 2 IN8 (+) IRIG B (+)SN:123456 IIIIIIIIIIIII IΦ=1Α, Ig=50mA, (3)Vy=12Vmax, (3)Vz=12Vmax CONTACT TB6 Æ SEE MANUAL TB8 $( \blacktrightharpoonup \label{eq:started_st$ ) <u>0 0 0 0 0 0 0 0 0</u> TB OUT 5 OUT 6 OUT 7 OUT 8 OUT 9 OUT 10 OUT 11 OUT 12 <sup>2</sup> 1 2 1 2 IN 10 IN 11 HÐ $( \blacksquare )$ $( \blacksquare )$ Vy<sub>2</sub> Vy<sub>3</sub> Vz<sub>1</sub> Vz<sub>2</sub> Vz<sub>3</sub> Nz 16 • I<sub>1</sub> 0 • I3 0 5 1 6 Ny 12 • I<sub>2</sub> 0 3 **П** 4 • Ig 0 7 1 8 \_\_\_\_\_тв5 $(\mathbf{r})$

M-7651A External Connections (Typical configuration, other options are available)



M-7651A External Connections (Unit Serial Numbers 1 to 2000)

# Quick Start Guide





**Optional TIA-485 Communications Module** 

	M-76	51	A D-F
		Ν	N-7651A
S	Vertical	V	Mounting
s	Horizontal	Н	
s	60Hz	6	Fraguanay
S	50Hz	5	Frequency
S	Low (18-60 Vdc)	L	Power
S	High (90-315 Vac/Vdc)	н	Supply
s	1 A (3)	1	Phase Current
s	5 A (3)	5	Inputs (I1, I2, I3)
S	1 A	1	
s	5 A	5	Ground
S	200 mA SEF	Н	Current
S	50 mA SEF	М	Input (Ig)
S	10 mA SEF	L	
S	(4) LEA-High or VT (300 Vac Max)	H4	
S	(4) LEA-Low (12 Vac Max)	L4	
S	(3) LEA-Low (12 Vac Max) and (1) LEA-High or VT (300 Vac Max)	X4	Voltage
\$	(6) LEA-High or VT (300 Vac Max)	H6	Inputs
\$	(6) LEA-Low (12 Vac Max)	L6	]
\$	(3) LEA-Low (12 Vac Max) and (3) LEA-High or VT (300 Vac Max)	X6	
s	(4) Configurable LV Inputs 9~180V AC/DC, and (4) Configurable Dry Type Outputs	SL	
s	(4) Configurable HV Inputs 180~300 Vdc, 180-280 Vac, and (4) Configurable Dry Type Outputs	SH	UO Ontinno
\$	(8) Additional LV Inputs 9~180V AC/DC, and (8) Additional Dry Type Outputs	EL	
\$	(8) Additional HV Inputs 180~300 Vdc, 180-280 Vac, and (8) Additional Dry Type Outputs	EH	

**Optional Arc Flash module** 



**Optional Analog Output Module** Port 1 Only

#### Style Selection Table <u>5 H4 SL 0 0 00 0 0 0</u> 0 None S CSR X Customer Specific Requirement 0 Standard (DNP3.0 & MODBUS) S 4 IEC 60870-5-104 \$ Optiona 6 IEC 61850 (Requires an Ethernet port) \$ Protocols | 9 IEC 61850 + IEC 60870-5-104 (Requires an Ethernet port) 0 None S 2 TIA-232 Port \$ 4 TIA-485 Port \$ S Serial Fiber Optic ST Port \$ V Serial Fiber Optic V-pin Port \$ B Bluetooth Class 1 Transceive 00 None (none/none) C0 1 x RJ-45 10/100 MBps Ethernet Port (RJ-45/none) \$ F0 1 x ST Fiber Optic Port 100 Base-FX (FO/none) CC 2 x RJ-45 10/100MBps Ethernet Port (RJ-45/RJ-45) PORT 2/ PORT 3 CF 1 x RJ-45 10/100MBps Ethernet Port + 1 x ST Fiber Optic Port 100 Base-FX (RJ-45/FO) FF 2 x ST Fiber Optic Port 100 Base-FX (FO/FO) \$ 0 None 2 TIA-232 Port 4 TIA-485 Port \$ PORT S Serial Fiber Optic ST Port \$ V Serial Fiber Optic V-pin Port \$ A Analog Output Module \$ 0 None S Multi-Shot Autoreclose Α (Three-Phase Ganged Operation Arc Flash Protection Special F 4 AF Inputs + 4 HS Outputs unctions tandard Multi-Shot Autoreclose, Three-Phase Ganged plus Arc Flash Protection ptional With Price Adder G 4 AF Inputs + 4 HS Outputs Consult Factory







Phase

´x.x

beainnina

econdary Metering

Ground/Neutral

| Press ENT to View

| Press ENT to View

Press ENT to View

| Min Vz1\*

|Max Vz1\*

Min Ig

Max Ig













Cycles back to beginning



Power and Demand

Demand Voltage A

Demand Voltage B

Demand Voltage C

X.XX V

X.XX V

Press ENT to View Cycles back to beginning



Cycles back to beginning

At any menu screen:

Press EXIT to go to the Menu Header.

Press either  $\leftarrow \rightarrow$  to move sideways to the adjacent Menu Header

■NOTE: HMI menu items are available based on the control options purchased.













**Demand History** 

Max Ia (Ib,Ic)

Min Pa (Pb,Pc)

Max Pa (Pb,Pc)

Min Qa (Qb,Qc)

Max Qa (Qb,Qc)

Min Sa (Sb,Sc)

Max Sa (Sb,Sc)

Press ENT to View

Press ENT to View

Press ENT to View

Press ENT to View

Cycles back to

beginning

Press ENT to View

Press ENT to View

Press ENT to View





CONFIGURATION

At any menu screen:

Press EXIT to go to the Menu Header.

Press either  $\leftarrow \rightarrow$  to move sideways to the adjacent Menu Header

■NOTE: HMI menu items are available based on the control options purchased.



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Press EXIT to go to the Menu Header.

Press either  $\leftarrow \rightarrow$  to move sideways to the adjacent Menu Header.

■NOTE: HMI menu items are available based on the control options purchased.



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Press EXIT to go to the Menu Header.

Press either  $\leftarrow \rightarrow$  to move sideways to the adjacent Menu Header.

Technical Support www.beckwithelectric.com / (727) 544-2326 Email Support: beckwithelectricsupport @ hubbell.com

■NOTE: HMI menu items are available based on the control options purchased.