

M-7679 R-PAC QUICK REFERENCE GUIDE

PROTECTION, AUTOMATION AND CONTROL SYSTEM FOR RECLOSER, SWITCH, SECTIONALIZER AND ADVANCED DISTRIBUTION AUTOMATION APPLICATIONS.

Programming Settings using Setpoints



Required Tools:

- PC running Windows 7® or higher
- S-7600 IPScom Communications Software

Download the latest **IPScom software** at:

<https://beckwithelectric.com/products/s-7600/>

Required Documentation:

- M-7679 Instruction Book
- M-7679 Application Guide
- Communications and Cybersecurity A.G.

Download the latest **M-7679 Instruction Book** at:

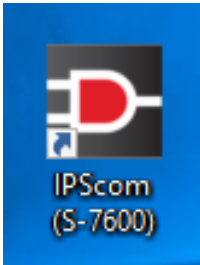
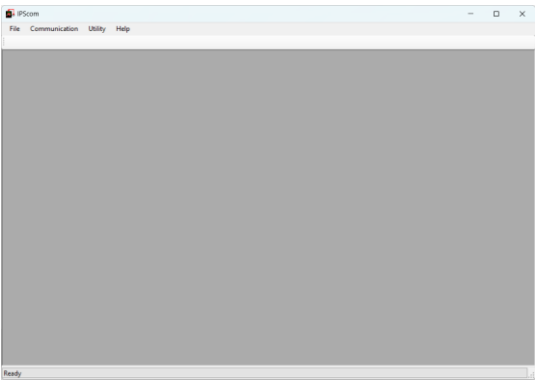
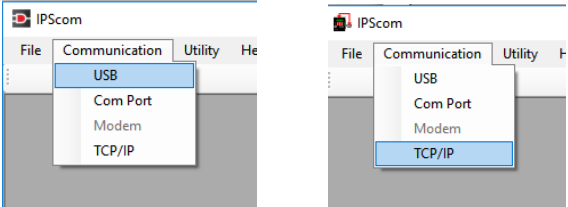
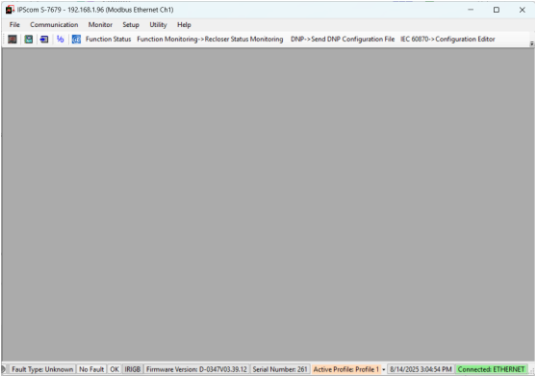
<https://beckwithelectric.com/products/m-7679/>

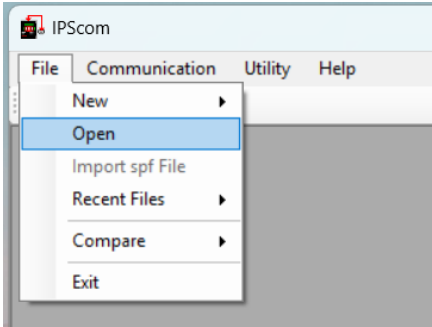
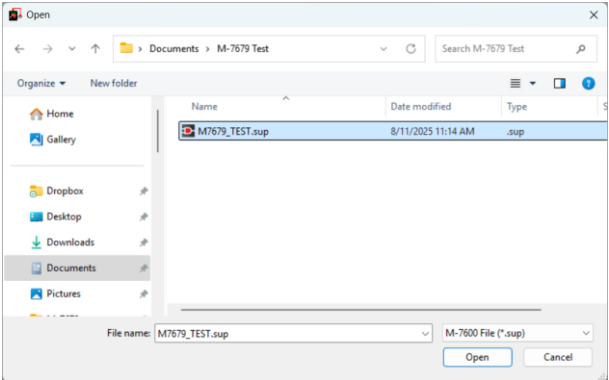
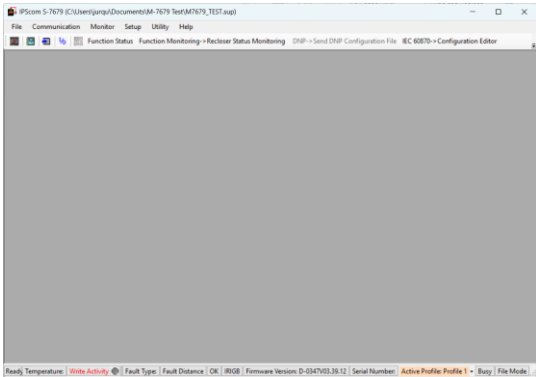
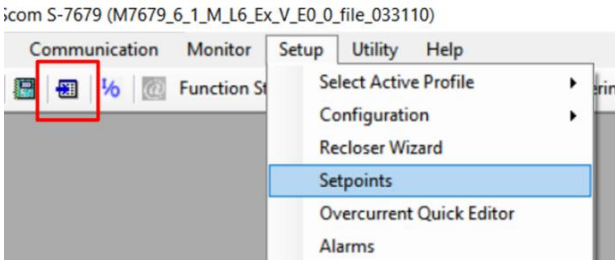


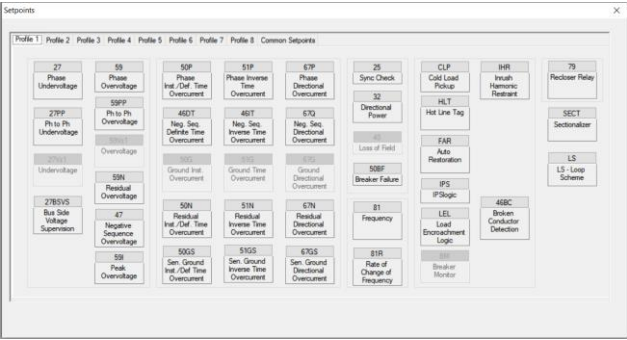
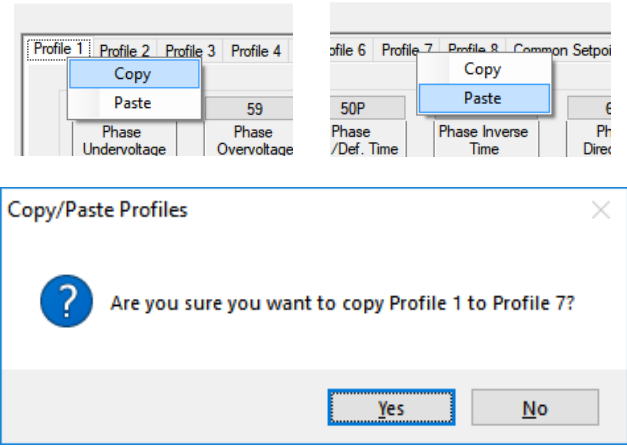
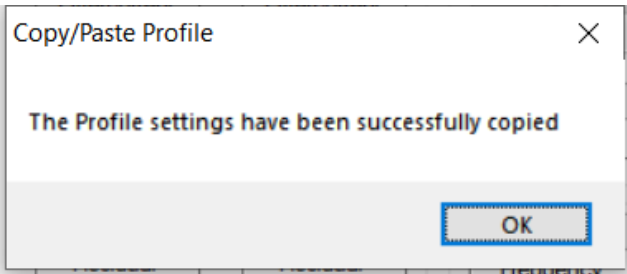
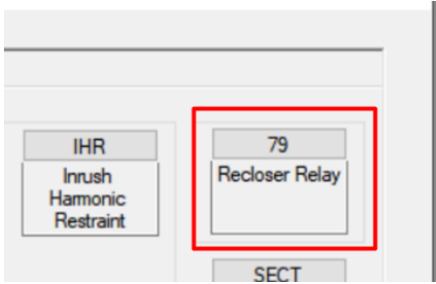
Table of Contents	
Programming Settings using Setpoints	3

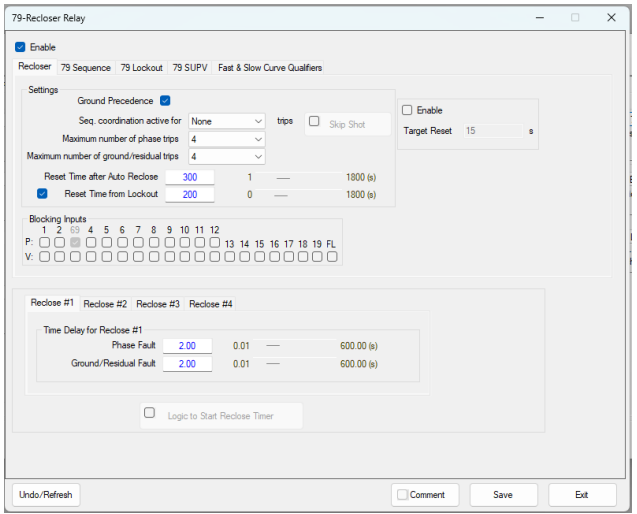
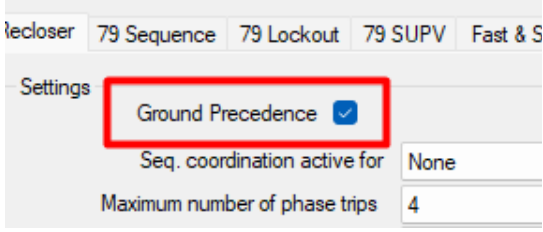
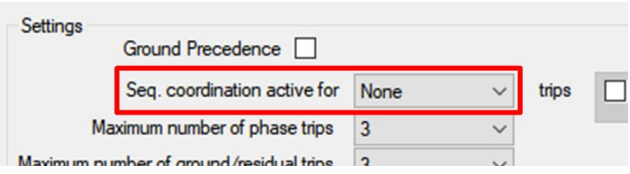
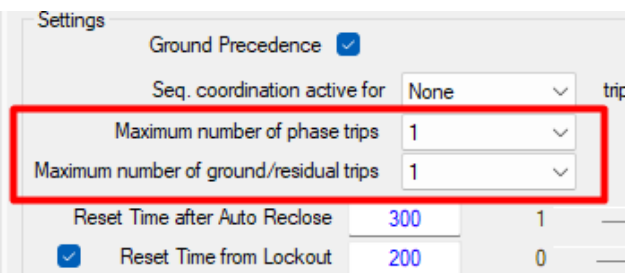
Programming Settings using Setpoints

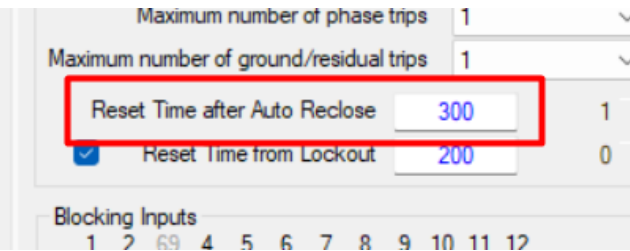
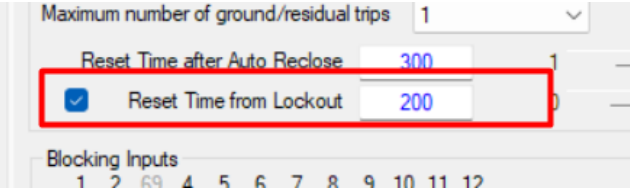
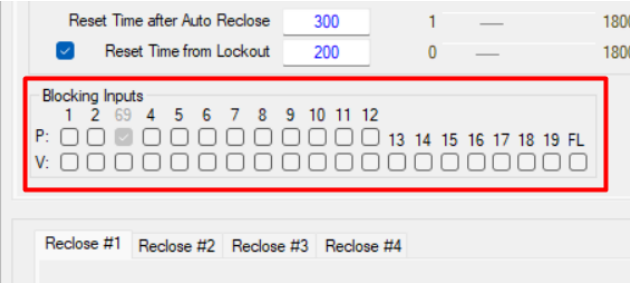
This procedure will guide the user during the process of configuring a reclosing sequence using the advanced method (Setpoints).

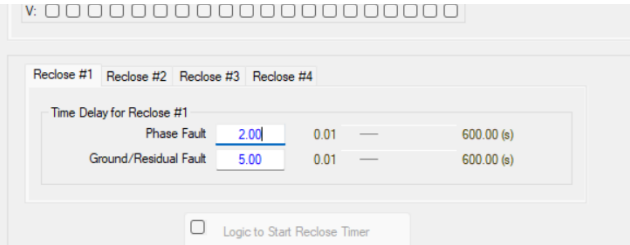
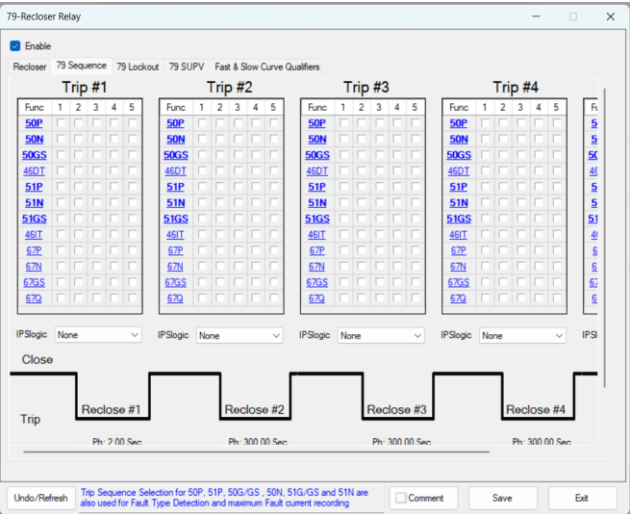
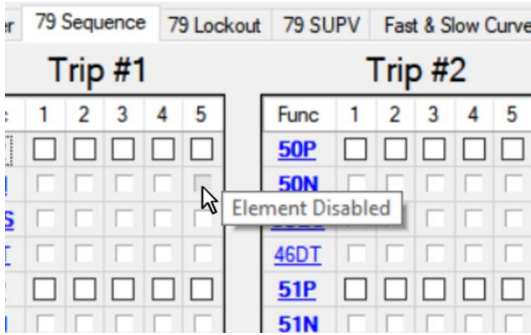
1	Start IPScom Software by double-clicking the corresponding shortcut.	
2	IPScom will display the IPScom Main dialog screen.	
3	If the process will be performed while connected to an M-7679 R-PAC unit, establish a connection to the unit using either USB or TCP/IP mode.	
4	Once the connection is established, IPScom will display the Connected version of the IPScom main screen. Proceed to Step 8.	

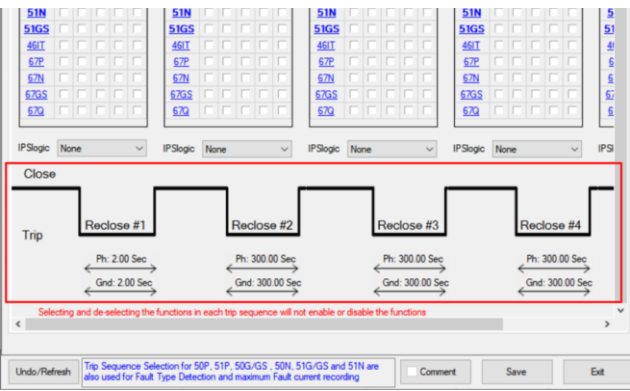
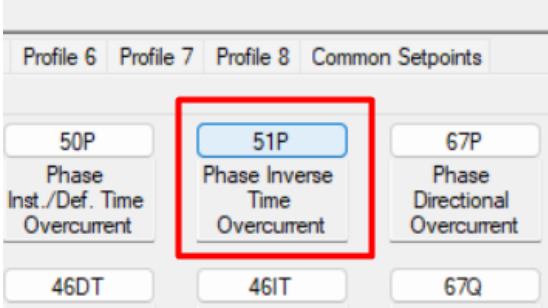
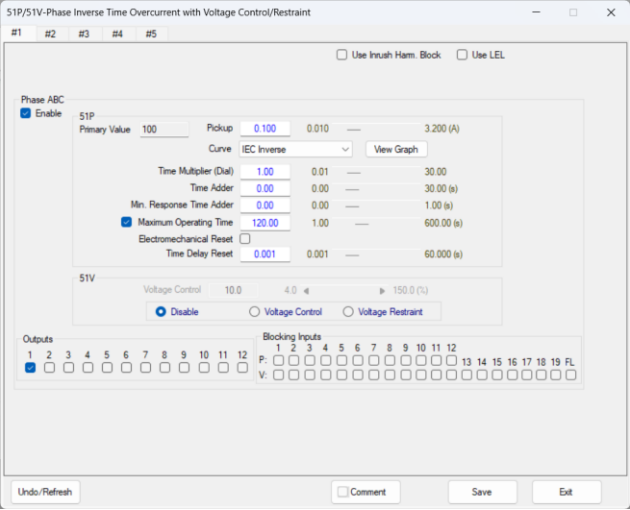
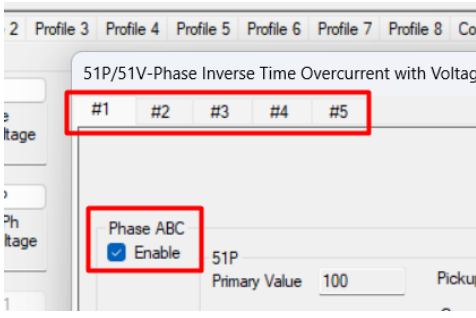
5	If the process will be performed without a connection to an M-7679 R-PAC unit, navigate to File > Open to access an existing configuration file.	
6	IPScom will display the Open Dialog screen. Find the required .SUP file and select OPEN.	
7	IPScom will display the Not-Connected version of the main screen.	
8	Go to Setup / Setpoints or select the Setpoints icon in the Tool bar.	

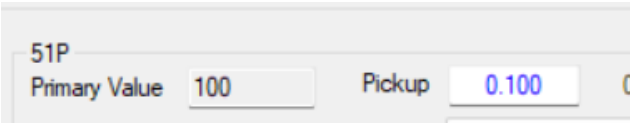
9	IPScom will display the Typical Setpoints screen from which all individual Function Setting dialog screens can be accessed. Selecting a Function Setting button will display the corresponding function dialog screen. Up to eight setpoints profiles may be used, select the adequate profile to be set. Note: The protection functions included in the Setpoints screen may vary depending on the M-7679 R-PAC configuration.	
10	From the Setpoints screen, the user can copy an entire profile to another by right-clicking the source profile tab and selecting Copy, then right-clicking the destination profile tab and selecting Paste. IPScom will prompt the user to confirm the action. Click Yes to begin the copy process.	
11	Once the selected profile has been copied, IPScom displays a confirmation message. Click OK to complete the process.	
12	To start configuring Trip / Reclose Sequence select 79 Recloser Relay from the Setpoints screen	

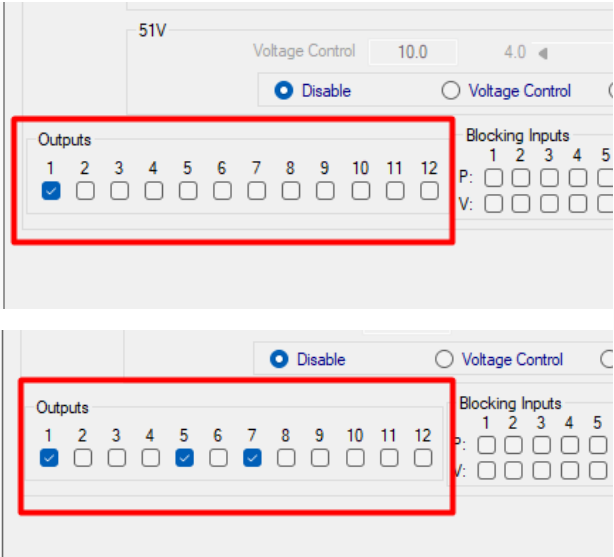
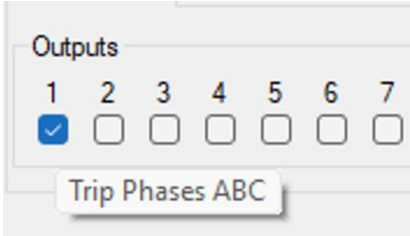
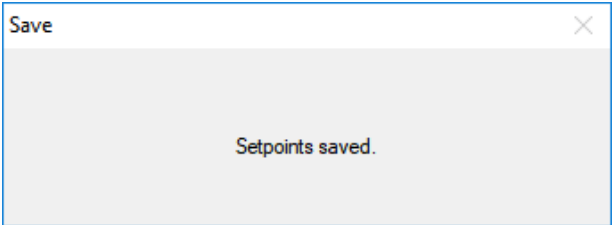
13	IPScom will open the 79-Recloser Relay dialog screen. The Recloser tab, allows the user to set the Reclosing Sequence and Reclose Intervals. The user must set, at least, the following settings: • Max. Number of Trips (Phase & Ground) • Reset time after Auto Reclose • Reset time from Lockout • Reclose Intervals for Phase & Ground	
14	When the Ground Precedence checkbox is selected the residual overcurrent functions will have precedence over the phase overcurrent functions. In case of an unbalanced or ground fault only the residual protection function will operate and will be ruled by the ground operations to lockout setting.	
15	Sequence Coordination settings can also be configured in this screen. This feature is essential when two reclosers are located upstream and downstream the distribution system. It helps prevent unnecessary tripping of the upstream recloser due to faults that should be cleared by downstream recloser. To activate Sequence Coordination, select the number of desired trips from the corresponding dropdown menu. For additional details, refer to the 7679 Recloser Function Application Guide.	
16	The Max. Number of Phase Trips and Max. Number of Ground Trips dropdown menus allow the user to define the maximum number of trips in the reclosing sequence. These settings help control how many times the recloser will attempt to close after detecting a fault, ensuring coordination with system protection requirements.	

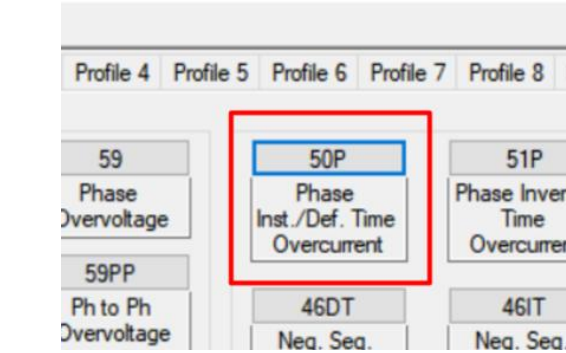
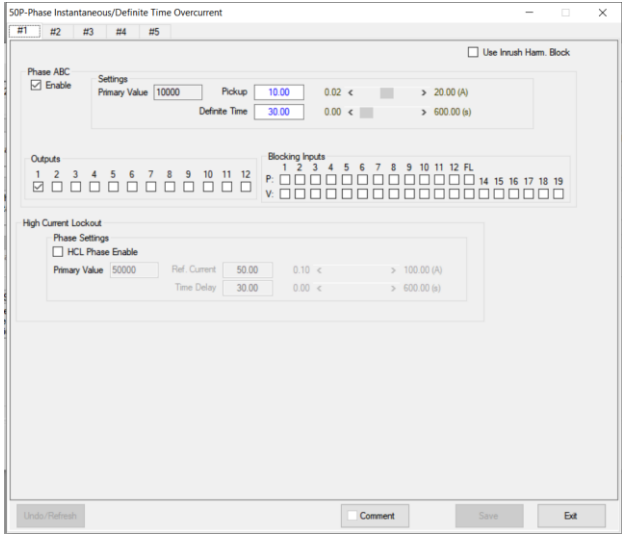
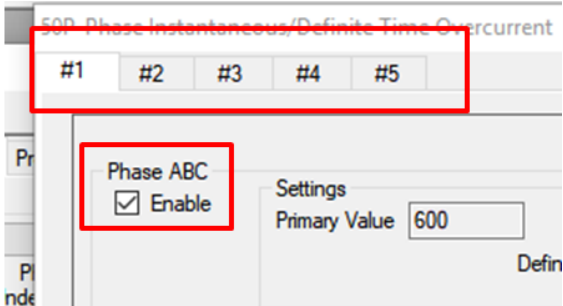
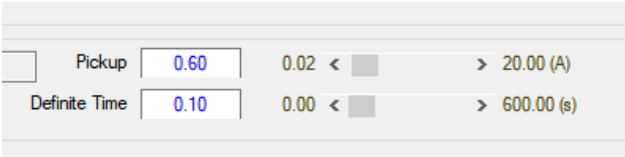
17	The user must set the Reset Time after Auto Reclose timer. Once an auto-reclose operation occurs, the M-7679 R-PAC starts counting this timer. If an overcurrent fault is detected during this period, the reclosing sequence continues: the M-7679 R-PAC performs the corresponding timing and issues a trip command. If no fault is detected, reclosing sequence ends: the M-7679 R-PAC remains closed, the timer resets to zero and the recloser becomes ready for the next sequence.	
18	The user can enable the Reset Time from Lockout setting. When the M-7679 R-PAC is in Lockout state, it can only be closed manually (locally or remotely). Once the breaker is closed, this timer starts counting. If an overcurrent trip occurs during this period, the M-7679 R-PAC immediately trips and goes to Lockout; the reclosing sequence is not executed. If no overcurrent is detected before the timer expires, the recloser remains closed, the timer resets to zero, and the recloser becomes ready for the next reclosing sequence. If the checkbox is unchecked, the unit will reset from Lockout instantaneously.	
19	Physical or Virtual Inputs are available to block the 79-reclosing function. If any physical or virtual input is selected, once the input is asserted the 79 function will be blocked. This means that if the selected input is asserted, under a fault condition no automatic reclose operation will be allowed and once the M-7679 R-PAC detects the fault, the unit will trip and go directly to Lockout state.	

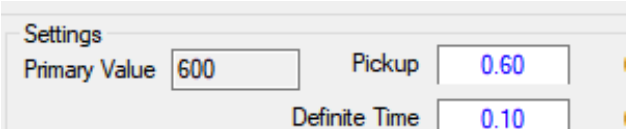
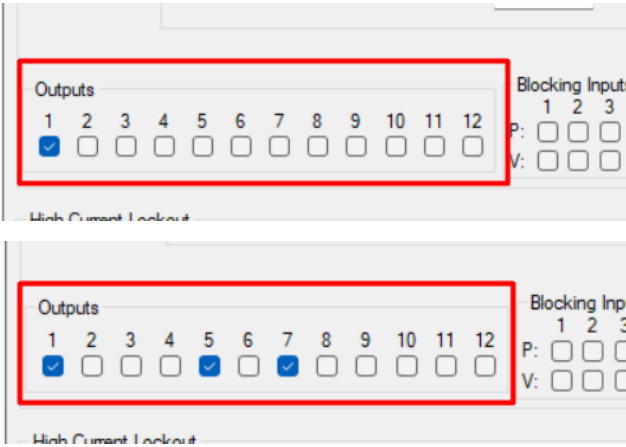
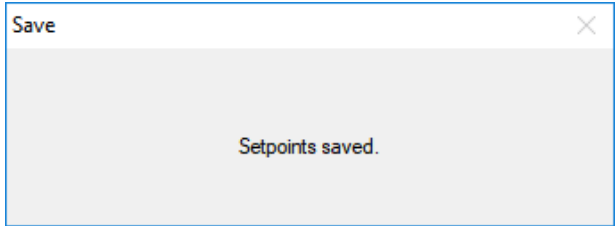
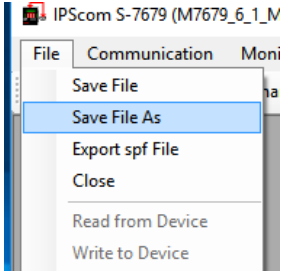
20	In this screen, the user can configure the Reclose Intervals. A Reclose Interval defines the time the recloser remains open during the Trip/Reclose sequence. Different Reclose Intervals can be set by selecting the corresponding tab. IPScorn automatically enables or disables the available Reclose Intervals based on the configured Maximum Number of Trips.	
21	In the Recloser Relay dialog screen select the 79 Sequence tab. This section will allow the user to select the protection functions that will increment the Auto-Reclose cycle for up to 5 Trips.	
22	Checkboxes are only available if the corresponding protection function element is Enabled AND a Trip Output has been selected for that element. If a protection element is not enabled or does not have a trip output selected, IPScorn will display an Element Disabled popup when hovering over the checkbox and will be not available to choose.	
23	IPLogic may also be used to generate a trip during the sequence, using the corresponding dropdown menu located just below each trip in sequence matrix.	

24	At the bottom of the screen, IPScorm will show a graphical outline of the reclosing sequence with the respective Reclose Intervals. Once all the 79 settings have been programmed, select Save and Exit.	
25	The user must configure the overcurrent functions to be included in the 79 Sequence. The following functions are available for use in the reclosing sequence: Instantaneous Overcurrent (50), Inverse Time Overcurrent (51) and Directional Overcurrent (67). To configure the 51P Phase Inverse Time Overcurrent, select the corresponding button in the Setpoints screen of the desired profile.	
26	IPScorm will display the Phase Inverse Time Overcurrent with Voltage Control/Restraint screen. In this screen, the user will be able to set all the corresponding 51P settings for each of the elements that will be included in the 79 Sequence.	
27	The 51P function has 5 available elements. The user can choose the Element to configure by clicking the corresponding tab. Once the user has selected the Element, make sure that it is enabled by checking the Enable checkbox.	

28	The following settings are available for the 51P element: • Pickup: the minimum value of current at which the relay begins to operate. • Curve: this dropdown menu includes over 50 protection curves. • Time Multiplier (Dial): shifts the entire curve up or down • Time Adder: adds set amount of time to the curve • Minimum Response Time Adder: minimum time required to trip • Maximum Operating Time (optional): sets a maximum operating time before tripping; however, the unit will always compare the original curve operating time to the maximum time and will use the faster one.	
29	The Pickup value must be set in secondary amps. IPScm will automatically display the corresponding primary value based on CT ratio defined in the System Setup.	
30	The M-7679 R-PAC provides more than 50 standard time-overcurrent curves, along with four user-programmable curves. All available curve options can be selected from the Curve dropdown menu.	

31	The Physical Outputs are located in the lower-left section of the screen. For three-phase ganged configurations, ensure that Output 1 is selected. For independent-phase configurations, Outputs 1, 5 and 7 must be selected.	
32	When hovering the mouse over each output, IPScom displays a tooltip indicating the function currently assigned to that output.	
33	If necessary, select the required physical (P) or virtual (V) blocking inputs. When asserted, the blocking inputs will block the 51 Protection function avoiding the function to operate.	
34	Once the 51P settings have been programmed, select Save and Exit. IPScom will display a confirmation message.	

35	If the 79 Sequence includes any 50P function, go to the Setpoints screen and select the corresponding 50P button.	
36	IPScorm will display the Phase Instantaneous / Definite Time Overcurrent screen. In this screen, the user will be able to set all the corresponding 50P settings for each of the elements that have been selected in the 79 Sequence.	
37	The 50P function has 5 available elements. The user can choose the Element to configure by clicking the corresponding tab. Make sure that the desired Element is enabled by selecting the Enable checkbox.	
38	The following settings are available for the 50P element: • Pickup: the minimum value of current at which the relay begins to operate. • Definite Time: a fixed time delay after which the relay operates.	

39	The Pickup value must be set in secondary amps. IPScom will automatically display the corresponding primary value based on CT ratio defined in the System Setup.	
40	The Physical Outputs are located in the lower-left section of the screen. For three-phase ganged configurations, ensure that Output 1 is selected. For independent-phase configurations, Outputs 1, 5 and 7 must be selected.	
41	Once the 50P settings have been programmed, select Save and Exit. IPScom will display a confirmation message.	
42	If the process is performed in offline mode (without connecting to a unit), all settings are saved to a temporary file. To retain them, go to File > Save File As. IPScom will display a dialog box allowing the user to assign a name and save the .SUP file. If the process is performed while connected to a unit, all settings are automatically saved to the device.	
End of Procedure.		



Scan for quick access to M-7679
technical literature.



6190 118th Avenue North
Largo, FL 33773-3724 U.S.A.



BeckwithElectric.com
HubbellPowerSystems.com

