

LabCon Ultra

Multi-Purpose Temperature Controller with Recording & PC Software

Operation Manual

This brief manual is primarily meant for quick reference to wiring connections and parameter searching. For more details on operation and application; please log on to www.ppiindia.net



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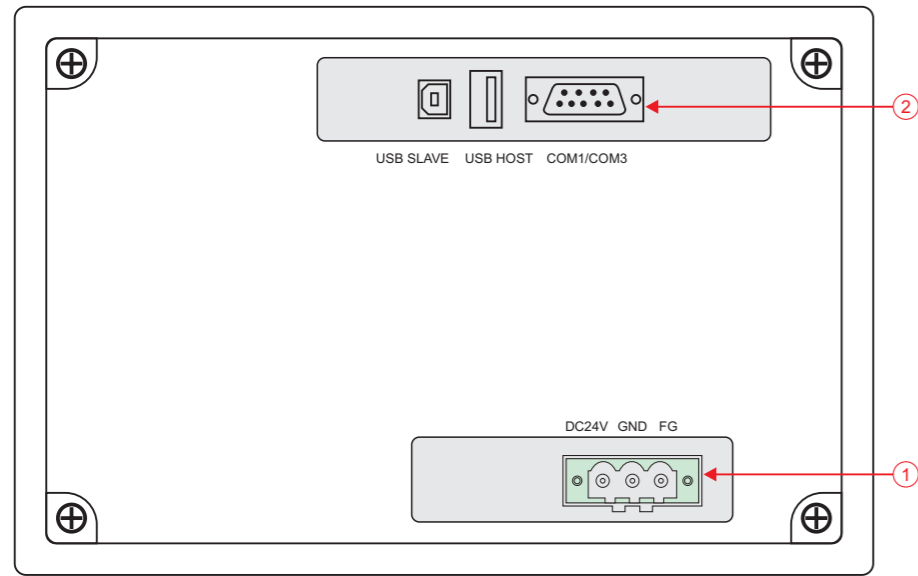
Level	Sub-Level	Parameters	Range (Default)		
Operator		Temperature Set Value	Temp. Setpoint Low Limit to Temp. Setpoint High Limit (Default : 25.0 °C)		
		Temperature Low Deviation Alarm	0.2 to 99.9 °C (Default : 2.0 °C)		
		Temperature High Deviation Alarm	0.2 to 99.9 °C (Default : 2.0 °C)		
		SP Edit on Home Screen	Enable Disable		
		Timer Start / Abort Command	NA		
		Time Interval (HH:MM)	0.00 to 500.00 (Default : 0.10)		
		Zero Offset	-50.0 to 50.0°C (Default : 0.0°C)		
		Recording		Recording Interval	0 to 250 Minutes (Default : 5 Minutes)
'Delete Record' Command	NA				
Clock & Calendar		Calendar Date (DD/MM/YY)	NA		
		Clock Time (HH:MM:SS)	NA		
Supervisory	Control Settings	Set Value (Temperature Control Loop)	Temp. Setpoint Low Limit to Temp. Setpoint High Limit (Default : 25.0)		
		Low Limit (for Temp. Control Set Value)	-199.9 to Temperature Setpoint High Limit (Default : 10.0)		
		High Limit (for Temp. Control Set Value)	For RTD : Temperature Setpoint Low Limit to 600.0 For mA/V : Temperature Setpoint Low Limit to 999.9 (Default : 60.0)		
		Overshoot Inhibit	Enable Disable (Default : Disable)		
		Cutoff Factor	1.0 to 2.0 (Default : 1.2)		
		Control PV Strategy	MAP-0 PV, Average PV if MAP-0 Fails, Average PV (Default : MAP-0 PV)		
		Self Tune	NA		
		Compressor SP	0.0 to 100.0 (Default : 45.0)		
		Cool Hysteresis	0.1 to 99.9 (Default : 2.0)		
		Dual Zone			
		Heat Zone PID Constants			
		Heat Zone Proportional Band	0.1 to 999.9 °C (Default : 50.0 °C)		
		Heat Zone Integral Time	0 to 3600 Sec. (Default : 100 Sec.)		
		Heat Zone Derivative Time	0 to 600 Sec. (Default : 16 Sec.)		
		Cool Zone PID Constants			
		Cool Zone Proportional Band	0.1 to 999.9 °C (Default : 50.0 °C)		
		Cool Zone Integral Time	0 to 3600 Sec. (Default : 100 Sec.)		
		Cool Zone Derivative Time	0 to 600 Sec. (Default : 16 Sec.)		
		Single Zone			
		Proportional Band	0.1 to 999.9 °C (Default : 50.0 °C)		
		Integral Time	0 to 3600 Sec. (Default : 100 Sec.)		
		Derivative Time	0 to 600 Sec. (Default : 16 Sec.)		
Single Zone & Dual Zone					
Output Cycle Time (Sec.)	0.5 to 100.0 Sec. (Default : 10.0 Sec.)				

Level	Sub-Level	Parameters	Range (Default)																		
Supervisory	SMS Alert	GSM Machine ID	1 to 128 (Default : 1)																		
		Reset GSM Module	NA																		
		Repair Acknowledge 'Control Gadget'	NA																		
		'Switch Main/Standby Outputs'	NA																		
Supervisory	Standby Switching	Lock Position (On / Off)	Solenoid ON Solenoid OFF (Default : Solenoid OFF)																		
		Password Entry	NA																		
Factory	MAP-0 Sensor	Input Type	TC-J, TC-K, TC-P, TC-R, TC-S, TC-B, TC-N, RTD Pt100, 0 to 20 mA, 4 to 20 mA, 0 to 5 V, 0 to 10 V, 1 to 5 V (Default : RTD Pt100)																		
		Signal Range Low	<table border="1"> <thead> <tr> <th>Input Type</th> <th>Settings</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>0 to 20mA</td> <td>0.00 to Signal High</td> <td>0.00</td> </tr> <tr> <td>4 to 20mA</td> <td>4.00 to Signal High</td> <td>4.00</td> </tr> <tr> <td>0 to 5V</td> <td>0.000 to Signal High</td> <td>0.000</td> </tr> <tr> <td>0 to 10V</td> <td>0.00 to Signal High</td> <td>0.00</td> </tr> <tr> <td>1 to 5V</td> <td>1.000 to Signal High</td> <td>1.000</td> </tr> </tbody> </table>	Input Type	Settings	Default	0 to 20mA	0.00 to Signal High	0.00	4 to 20mA	4.00 to Signal High	4.00	0 to 5V	0.000 to Signal High	0.000	0 to 10V	0.00 to Signal High	0.00	1 to 5V	1.000 to Signal High	1.000
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		Display Range Low	-199.9 to Range High (Default : 0.0)																		
		Display Range High	Range Low to 999.9 (Default : 100.0)																		
		Zero Offset	-50.0 to 50.0°C (Default : 0.0°C)																		
Mode	Continuous OFF, Continuous ON, SP Based ON-OFF, PV Based ON-OFF (Default : Continuous OFF)																				
Time Delay	0 to 1000 Sec. (Default : 200 Sec.)																				
Boundary SP	0.0 to 100.0 (Default : 45.0)																				
Zone Select	Single, Dual (Default : Single)																				
Inhibit	Enable, Disable (Default : Enable)																				
Low Alarm Deviation	0.2 to 99.9 (Default : 2.0)																				
High Alarm Deviation	0.1 to 99.9 (Default : 0.2)																				
Hysteresis	0.1 to 99.9 (Default : 0.2)																				
Timer	Enable Disable (Default : Disable)																				
Factory	Heat-Cool Select	On Timer END Heater Off	Yes / No (Default : Yes)																		
		On Timer END Compressor Off	Yes / No (Default : Yes)																		
		Hold Band Type	None, Up, Down, Both (Default : None)																		
		Hold Band Value	0.1 to 999.9 (Default : 0.5)																		
		Start Band Value	0 to 999.9 (Default : 0.5)																		
Factory	Alarm Settings	Power Up recovery	Abort, Restart, Continuous (Default : Abort)																		

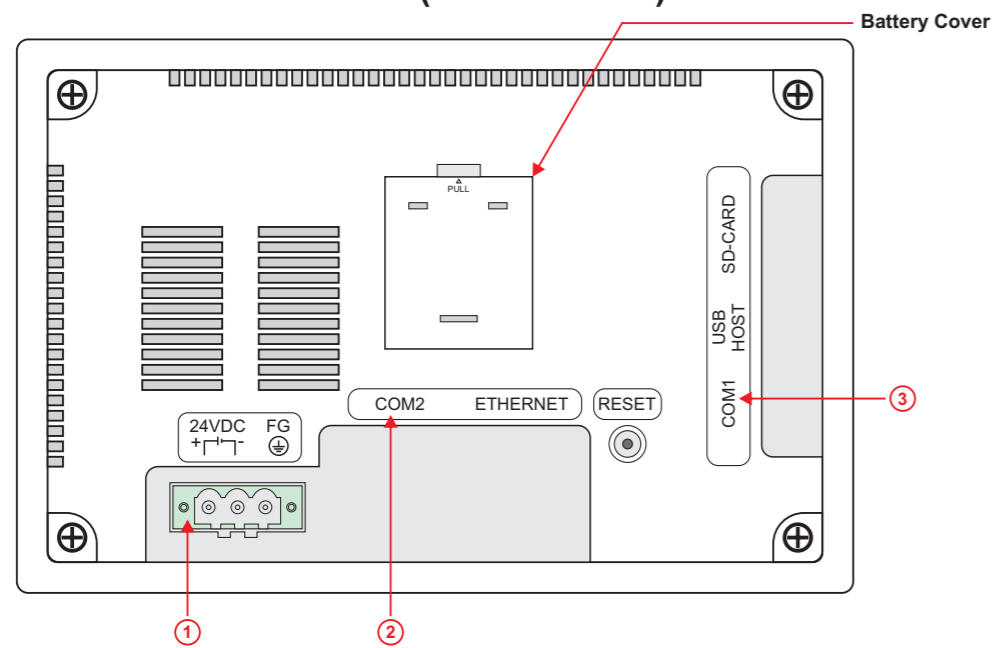
Level	Sub-Level	Parameters	Range (Default)																		
Factory	Power Fail	Detection Enable	No / Yes (Default : No)																		
		Power Fail Logic	Switch Open, Switch Close (Default : Switch Close)																		
Factory	Door Open	Detection Enable	No / Yes (Default : No)																		
		Door Open Logic	Switch Open, Switch Close (Default : Switch Close)																		
		Alarm Delay (Sec.)	0 to 1000 Sec. (Default : 60 Sec.)																		
Factory	Configuration	Select Mapping Inputs	1 MAP (M0), 2 MAP (M0+M1), 3 MAP (M0+M1+M2), 4 MAP (M0+M1+M2+M3), 5 MAP (M0+M1+M2+M3+M4) (Default : 1 MAP (M0))																		
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Timer	Enable Disable (Default : Disable)																				
Factory	Mapping	Fail Detect Time (Min)	0 to 250 Min. (Default : 10 Min.)																		
		Cyclic Time (Hrs.)	0 to 500 Hrs. (Default : 48 Hrs.)																		
Factory	Input Settings	Inhibit Time (Hrs.)	0 to 250 Hrs. (Default : 1 Hrs.)																		
		Heater Output Type (Main & Standby Heater)	SSR 0-20 mA 0-4 mA 0-5 V 0-10 V (Default : SSR)																		
Factory	Standby	Display Range Low	-199.9 to Range High (Default : 0.0)																		
		Display Range High	Range Low to 999.9 (Default : 100.0)																		
Factory	Control Settings	On Timer END Heater Off	Yes / No (Default : Yes)																		
		On Timer END Compressor Off	Yes / No (Default : Yes)																		
Factory	Control Settings	Hold Band Type	None, Up, Down, Both (Default : None)																		
		Hold Band Value	0.1 to 999.9 (Default : 0.5)																		
Factory	Control Settings	Start Band Value	0 to 999.9 (Default : 0.5)																		
		Power Up recovery	Abort, Restart, Continuous (Default : Abort)																		

ELECTRICAL CONNECTIONS

HMI (NEW Version)

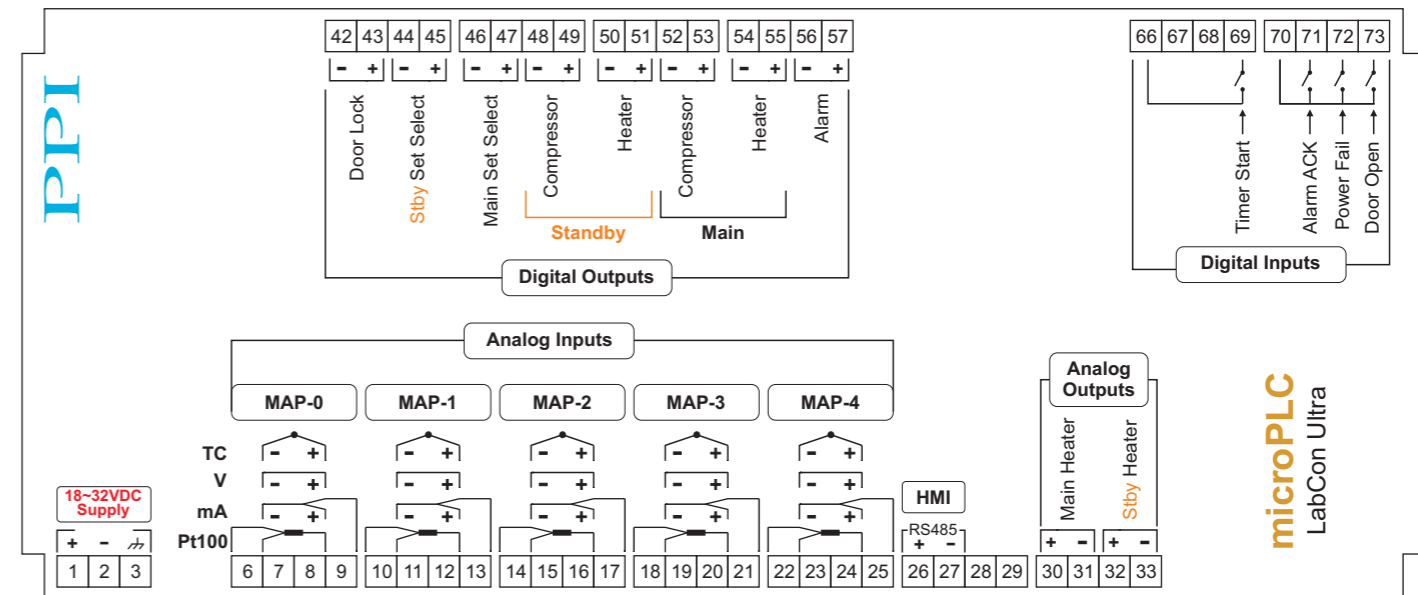


HMI (OLD Version)

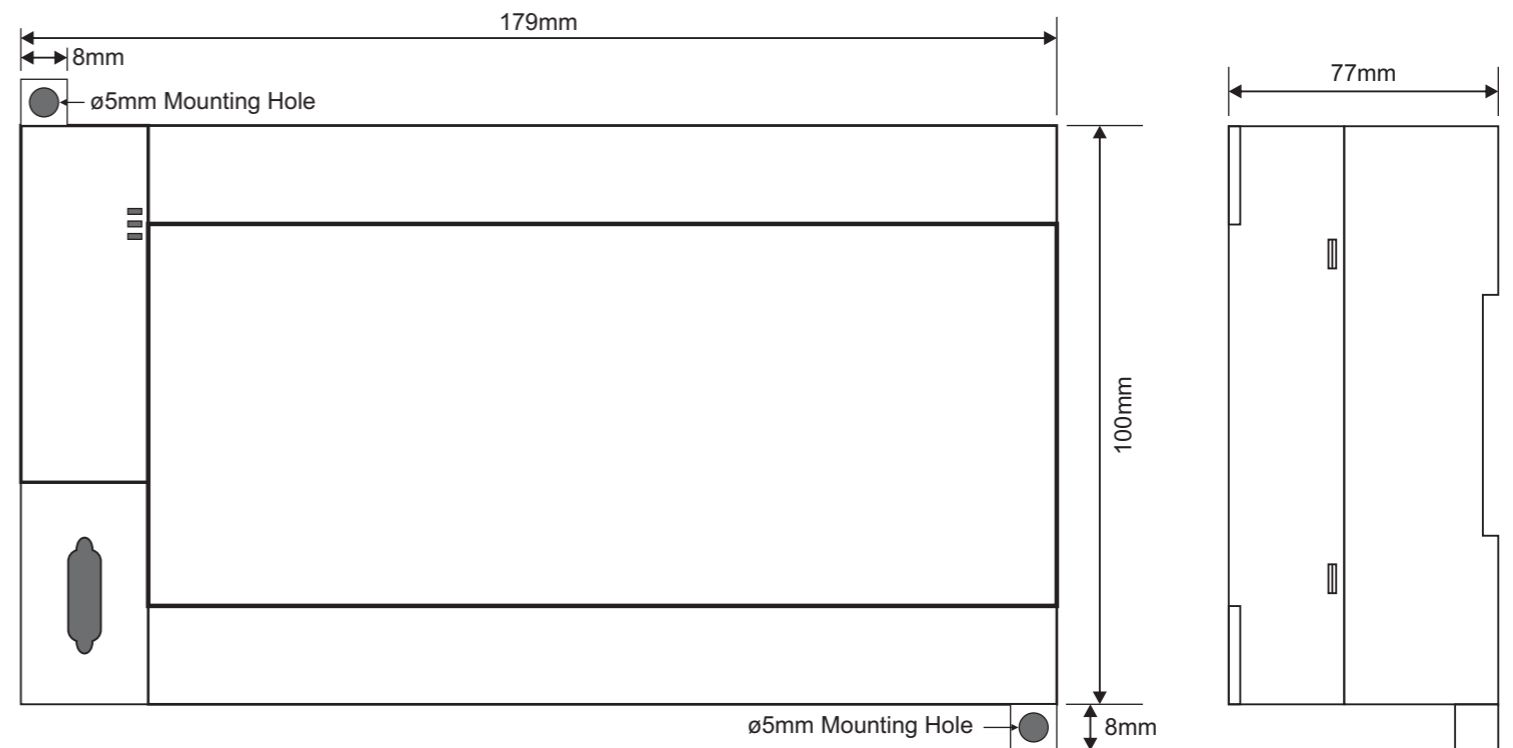


①		3-Pin Male / Female Connector (5.08 mm pitch) Supply Voltage : 20 to 28 VDC (24 V Nominal)
②		9 Pin D Type Connector (HMI New Version) RS485 Serial Communication with Control Unit & PC 15 Pin D Type Connector (HMI Old Version) RS485 Serial Communication with microPLC & Mapping Unit
③		6 Pin PS/2 Connector RS232 Serial Communication with PC

microPLC Electrical Connections

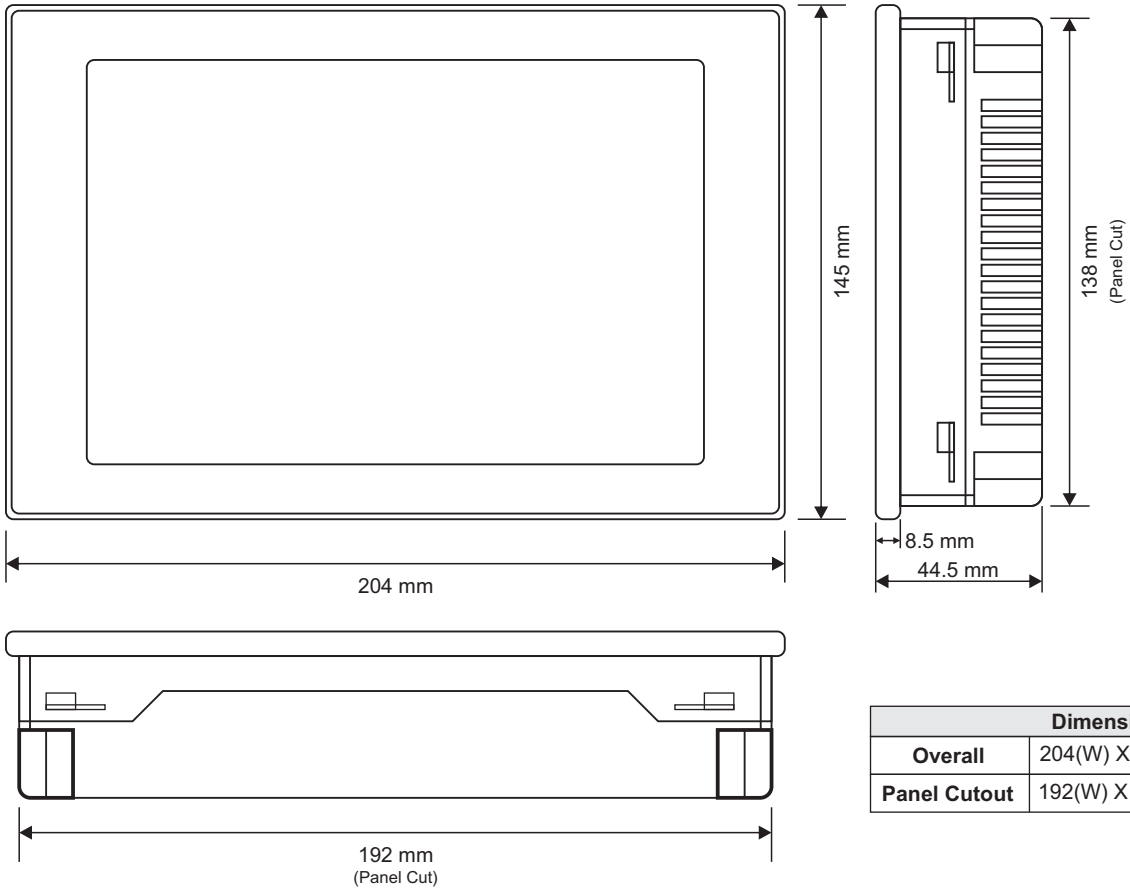


microPLC Mounting



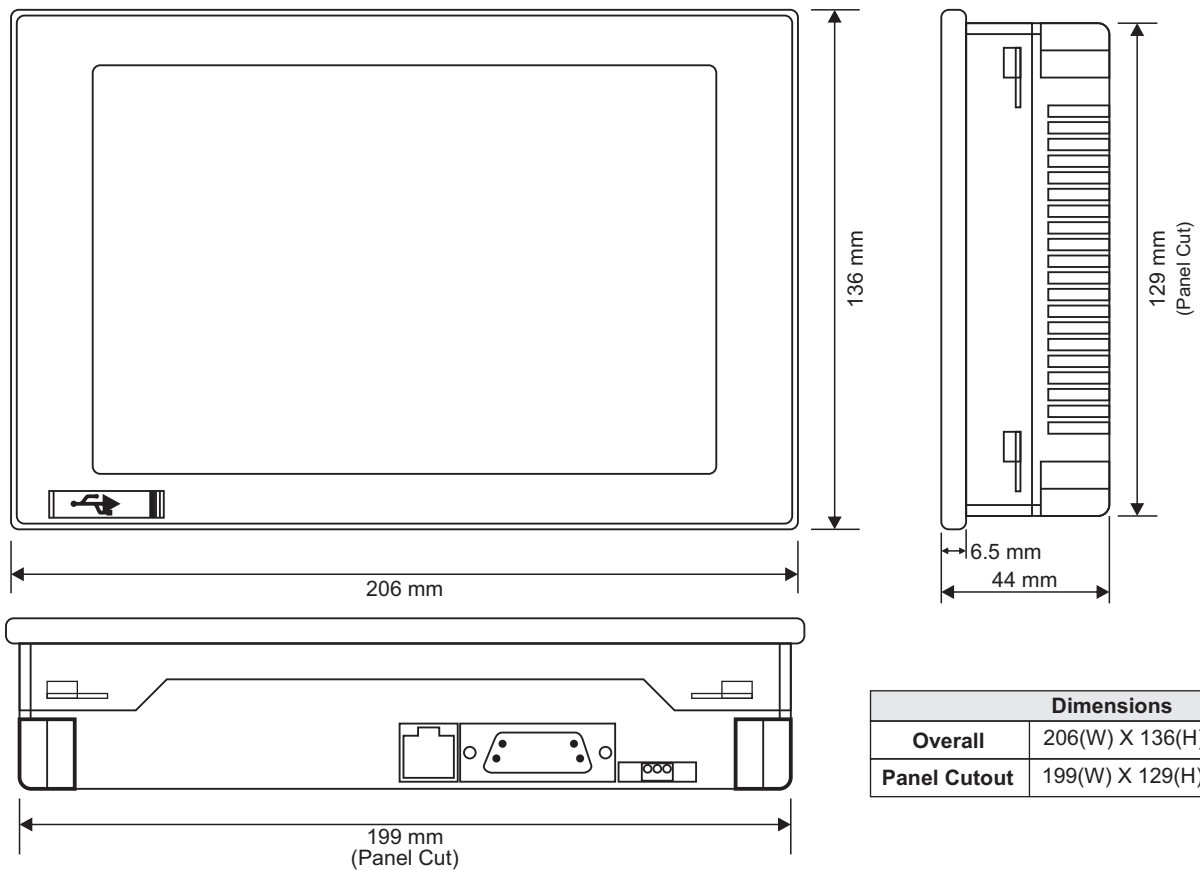
MECHANICAL MOUNTING

New Version



Dimensions	
Overall	204(W) X 145(H) X 44.5(D), mm
Panel Cutout	192(W) X 138(H), mm

Old Version



Dimensions	
Overall	206(W) X 136(H) X 44(D), mm
Panel Cutout	199(W) X 129(H), mm