



**VPD-173N**  
**VPD-173X**

**VPD-173N-64**  
**VPD-173X-64**

### Features

- Excellent C/P ratio (cost/performance)
- High-resolution color touch screen
- PoE (Power over Ethernet)
- RTC (Real Time Clock)
- Free HMIWorks development tool
- Supports C programming language and Ladder Designer
- Supports the custom communication protocol (C language)
- Modbus TCP/RTU protocol
- IP65 waterproof front panel
- I/O Expansion Board: XV-board (VPD-173X/VPD-173X-64)



### Introduction

VPD-173 series HMI is designed for building, home and industrial automation. VPD-173 series HMI is equipped with high resolution TFT color touch screen seamlessly integrated with rich I/O modules and presents beautiful, flexible and user-defined picture frame. In short, it is the best choice to upgrade the mechanical switch to intelligent control pads.

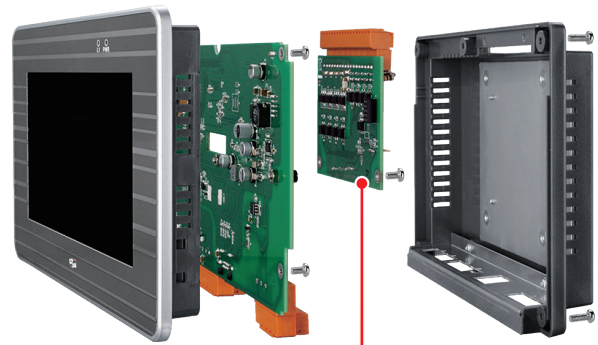
HMIWorks is a free development software for the VPD series HMI devices, which provides Ladder Designer for PLC users, and C language environment for IT users. Especially, it only takes no more than 30 minutes to learn how to create an application program of VPD-series devices when using Ladder Designer.

### Specifications

Models	VPD-173N	VPD-173N-64	VPD-173X	VPD-173X-64
<b>CPU Module</b>				
CPU	32-bit RISC CPU			
Memory Expansion	16 MB SDRAM/16 MB Flash	64 MB SDRAM/64 MB Flash	16 MB SDRAM/16 MB Flash	64 MB SDRAM/64 MB Flash
Real Time Clock (RTC)	Yes			
Buzzer	Yes			
Rotary Switch (0 ~ 9)	Yes			
<b>Communication Interface</b>				
Serial Port	COM1	RS-232 (3-pin) or RS-485 (including Self-Tuner) ; 2500 VDC isolated		
	COM2			
USB 1.1 Client	-		Firmware updates only	
Ethernet	RJ-45 x 1, 10/100 Base-TX			
<b>I/O Expansion</b>				
I/O Expansion Bus	-		Yes, One of XVboards	
<b>MMI (Main Machine Interface)</b>				
LCD	7" TFT (Resolution 800 x 480 , 65535 colors), defective pixels <= 3			
Backlight Life	20,000 hours			
Brightness	250 cd/m2	400 cd/m2	250 cd/m2	400 cd/m2
Touch Panel	4-wire, analog resistive; Light Transmission: 80%			
Reset Button	Yes			
<b>Electrical</b>				
Powered from Terminal Block	+12 ~ 48 Vdc			
Powered from PoE	IEEE 802.3af, Class1 (48 V)			
Power Consumption	3.6W			
<b>Mechanical</b>				
Dimensions (W x L x H)	217 mm x 153 mm x 33 mm			
Installation	Wall Mounting			
Ingress Protection	Front Panel: NEMA 4 /IP65			
<b>Environmental</b>				
Operating Temperature	-10 ~ +60°C			
Storage Temperature	-20 ~ +70°C			
Ambient Relative Humidity	10 ~ 90% RH, non-condensing			

## XV-Board Assembly Drawing

Making VPD series  
have its own I/O to control!

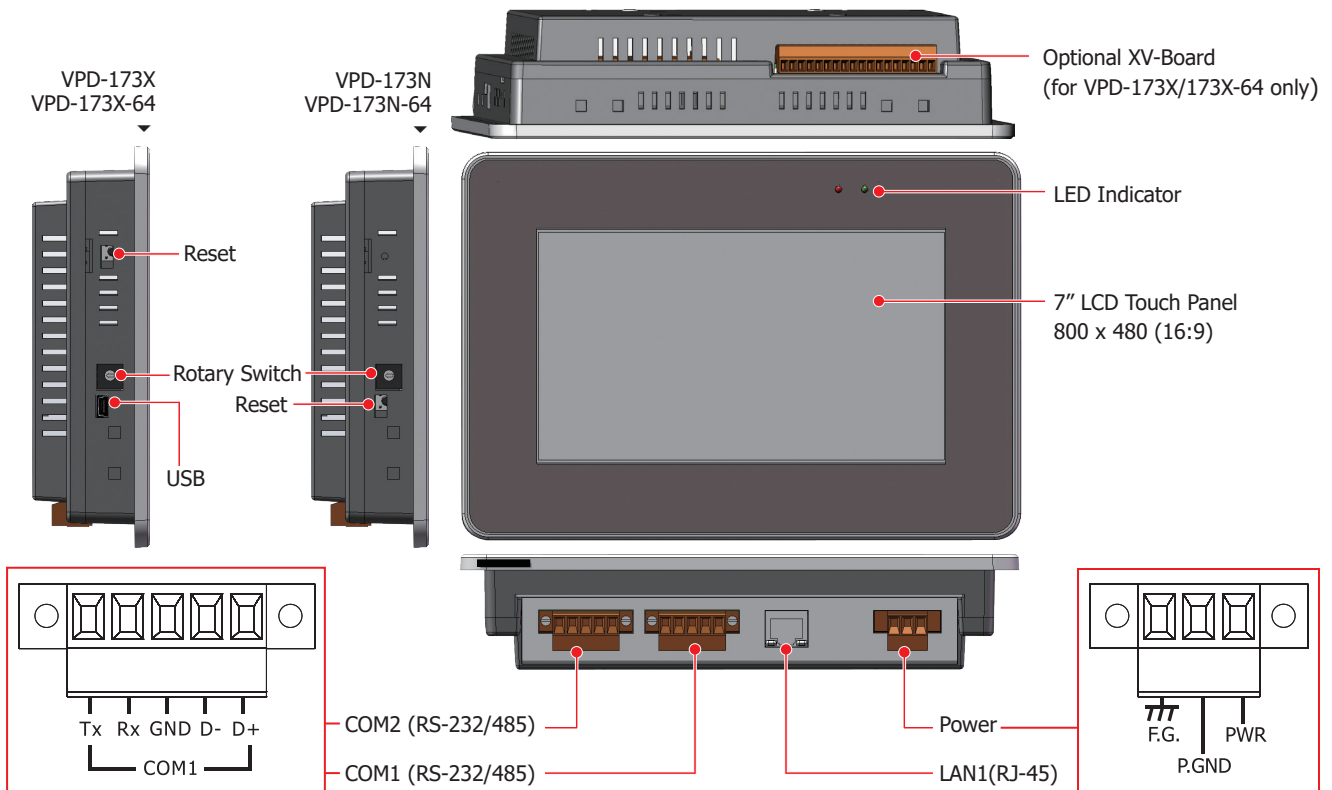


Optional XV-Board  
(VPD-173X/173X-64 Only)

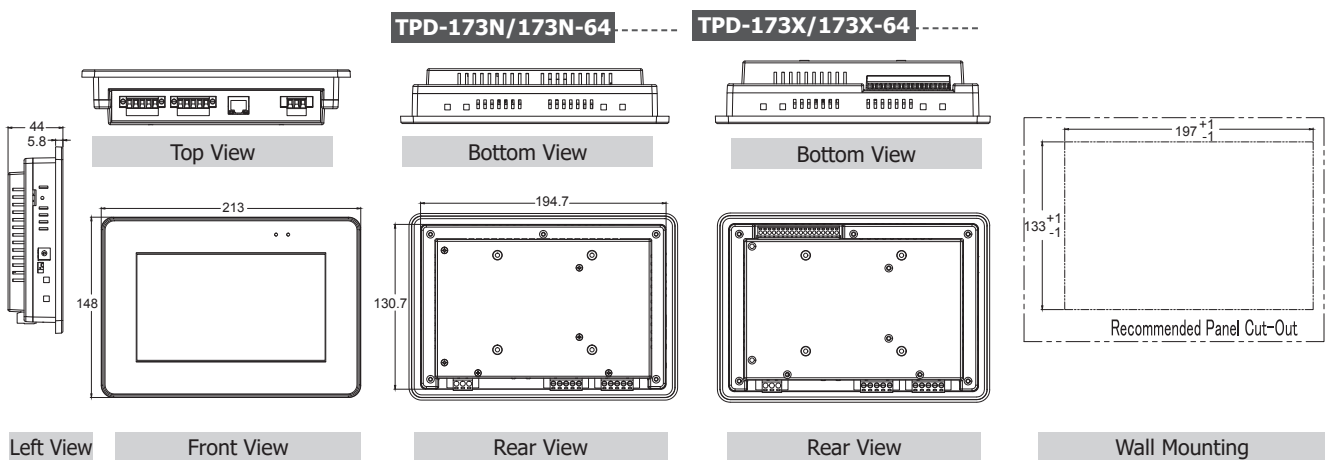
DIO Board						Relay Output Board		
Model	XV107	XV107A	XV110	XV111	XV111A	XV116		
Image								
<b>Digital Input</b>								
Channel	8	8	16			5		
Contact	Wet	Wet	Dry+Wet			Wet		
Sink/Source (NPN/PNP)	Source	Sink	Sink/Source			Sink/Source		
Wet Contact	On Voltage Level +3.5 Vdc ~ +50 Vdc					+3.5 Vdc ~ +50 Vdc		
Off Voltage Level	+1 Vdc Max.					+1 Vdc Max.		
Dry Contact	On Voltage Level -		Close to GND			-		
Off Voltage Level	-		Open			-		
Counters	Channels	8	16			5		
	Max. Count	32-bit (0 ~ 4, 294, 967, 285)				32-bit (0 ~ 4, 294, 967, 285)		
	Max. Input Frequency	50 Hz				50 Hz		
	Min. Pulse Width	10 ms				10 ms		
Input Impedance	10 K $\Omega$ , 0.5 W					10 K $\Omega$ , 0.5 W		
Oversvoltage Protection	70 Vdc					70 Vdc		
<b>Digital Output</b>								
Channel	8			16				
Type	Open Collector	Open Emitter		Open Collector	Open Emitter			
Sink/Source (NPN/PNP)	Sink	Source		Sink	Source			
Load Voltage	+3.5 Vdc ~ 50 Vdc	+10 Vdc ~ 40 Vdc	-	+3.5 Vdc ~ 50 Vdc	+10 Vdc ~ 40 Vdc	-		
Max. Load Current	700 mA/channel	650 mA/channel		600 mA/channel				
Overload Protection	1.4 A			1.4 A				
<b>Relay Output</b>								
Channel						2 (channel0, 1)	4 (channel 2~5)	
Type						Signal Relay	Power Relay	
Form A Relay	Contact Rating						2 A @ 30 VDC 0.24 A @ 220 VDC 0.25 A @ 250 VAC	6 A @ 35 VDC 6 A @ 240 VAC
	Min. Contact Load						10 mA @ 20 mV	100 mA @ $\geq$ 12 V
	Contact Material						Silver Nickel, Gold-covered	Silver Cadmium Alloy
	Operate Time						3 ms (typical)	5 ms (typical)
	Release Time						4 ms (typical)	1 ms (typical)
	Mechanical Endurance						10 <sup>8</sup> ops.	30 X 10 <sup>6</sup> ops.
	Electrical Endurance						2 X 10 <sup>5</sup> ops.	1 X 10 <sup>5</sup> ops.
<b>Isolation</b>								
Intra-module Isolation, Field to Logic	3750 Vdc							
<b>Power Requirements</b>								
Consumption	0.15 W	0.45 W	0.25 W	0.2 W	0.8 W	1.2 W		

Multifunction Board				
Model	XV306	XV307	XV308	XV310
Image				
<b>Analog Input</b>				
Channel	4		8	4
Sensor Type	+/- 1 V, +/- 2.5 V, +/- 5 V, +/- 10 V, 0 ~ 20 mA, 4 ~ 20 mA, +/-20 mA ( Jumper selectable )		+/- 1 V, +/- 2.5 V, +/- 5 V, +/- 10 V, 0 ~ 20 mA, 4 ~ 20 mA, +/-20 mA ( Jumper selectable )	
Resolution	16-bit	-	16-bit	
Sampling Rate	Normal Mode		10 Hz	
	Fast Mode		200 Hz	
Input Impedance	20 MΩ		20 MΩ	
Overvoltage Protection	120 Vdc		120 Vdc	
<b>Analog Output</b>				
Channel		2		2
Range	-	0 V ~ +5 V, ±5 V, 0 V ~ +10 V, ±10 V, 0 mA ~ +20 mA, +4 mA ~ +20 mA (Jumper Selectable)	-	0 V ~ +5 V, ±5 V, 0 V ~ +10 V, ±10 V, 0 mA ~ +20 mA, +4 mA ~ +20 mA (Jumper Selectable)
Resolution		12-bit		12-bit
Voltage Output Capability		10 V @ 20 mA		10 V @ 20 mA
Current Load Resistance		500 Ω		500 Ω
<b>Universal Digital Input/Output</b>				
Channel		-	DI+DO=8 (by Wire)	-
<b>Digital Input</b>				
Channel	4		-	4
Sink/Source (NPN/PNP)	Sink/Source		Source	Source
Wet Contact	On Voltage Level	+3.5 ~ +50 Vdc	+1 Vdc Max.	-
	Off Voltage Level	+1 Vdc Max.	+4 ~ 30 Vdc	-
Dry Contact	On Voltage Level	-	Close to GND	Close to GND
	Off Voltage Level	-	Open	Open
Counters	Max. Count	32-bit (0~4,294,967,285)		
	Max. Input Frequency	50 Hz		
	Min. Pulse Width	10 ms		
Overload Protection	70 Vdc		60 Vdc	60 Vdc
<b>Digital Output</b>				
Channel	4		-	4
Type	Power Relay (Form A)		Sink	Source
Load Voltage			3.5 ~ 50 Vdc	+10 ~ +40 Vdc
Max. Load Current			700 mA	650 mA/channel
Overload Protection			60 Vdc	47 Vdc
Contact Rating	6 A @ 35 Vdc 6 A @ 240 VAC			
Min. Contact Load	100 mA @ ≥ 12 V		-	-
Operate/Release Time	5 ms (typical)/1 ms (typical)			
Mechanical/Electrical Endurance	30 x 10 <sup>6</sup> ops./1 x 10 <sup>5</sup> ops.			
<b>Isolation</b>				
Intra-module Isolation, Field to Logic	2000 Vdc			
<b>Power Requirements</b>				
Consumption	1.6 W		0.8 W	1.6 W

## Appearance & Pin Assignments






## Dimensions (Units: mm)



## Ordering Information

<b>VPD-173N CR</b>	7" Touch HMI device with two serial ports, RTC, Ethernet (PoE) (16 MB Flash, RoHS)
<b>VPD-173N-64 CR</b>	7" Touch HMI device with two serial ports, RTC, Ethernet (PoE) (64 MB Flash, RoHS)
<b>VPD-173X CR</b>	7" Touch HMI device with two serial ports, USB, RTC, Ethernet (PoE) and support XV-board (16 MB Flash, RoHS)
<b>VPD-173X-64 CR</b>	7" Touch HMI device with two serial ports, USB, RTC, Ethernet (PoE) and support XV-board (64 MB Flash, RoHS)

## Accessories

 1C016	2.4 mm Screw driver
 NS-208PSE CR	Unmanaged Industrial PoE (Power over Ethernet) Ethernet Switch (RoHS)
 MDR-60-24 CR	24 VDC/2.5 A, 60 W Power Supply with DIN-Rail Mounting (RoHS)