VPD-142-H/VPD-142N-H VPD-143-H/VPD-143N-H

Features

- Excellent C/P ratio (cost/performance)
- High-resolution color touch screen
- RTC (Real Time Clock)
- Multiple serial communication interfaces
- Rubber Keypad (VPD-142-H/VPD-143-H)
- GUI design
- Free HMIWorks development tool
- Supports the C programming language and Lader Designer
- ESD Protection: 4 kV
- Front Panel: IP65 Waterproof
- I/O Expansion Boards (XV-Boards)
- Supports the Modbus TCP/RTU communication protocol
- Supports the custom communication protocol(C language)

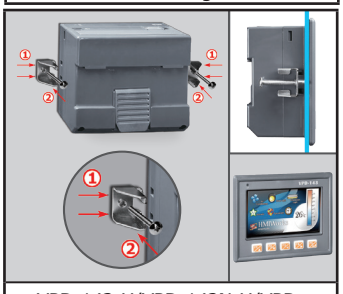
Introduction

VPD industrial touch HMI device series features, 4.3" high resolution color touch screen LCD. With touchscreen capability, it is easy to deploy into all kinds of automation systems, and make them more intuitive and efficient. Either setup new system installations or complete system retrofits, VPD series stands out for its wide variety of communication methods. Its built-in communication ports include RS-232/RS-485, and Ethernet, USB interface, enable integration into the system allowing users to control, monitor I/O at the remote sides and update firmware directly from the central computer. Besides, the built-in non-volatile storage makes VPD series more reliable for rugged environments.

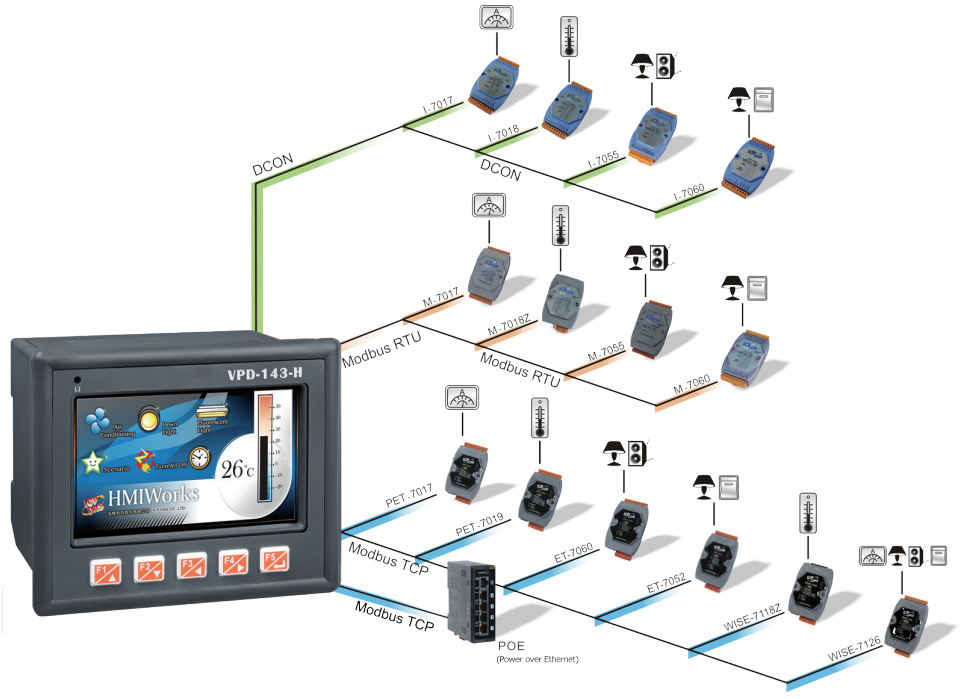
HMIWorks, the free development software for VPD series, provides an easy-to-use environment, and powerful and intuitive programming with graphic capabilities to let users create appealing graphical interface screens in minutes. For PLC users, HMIWorks provides Ladder Designer and C language environment for IT users. Especially, it only takes no more than 30 minutes to learn how to create an application program when using Ladder Designer. With all the features provided, VPD series touch HMI Devices must be the most cost effective HMI Device ever been in the market.

Applications

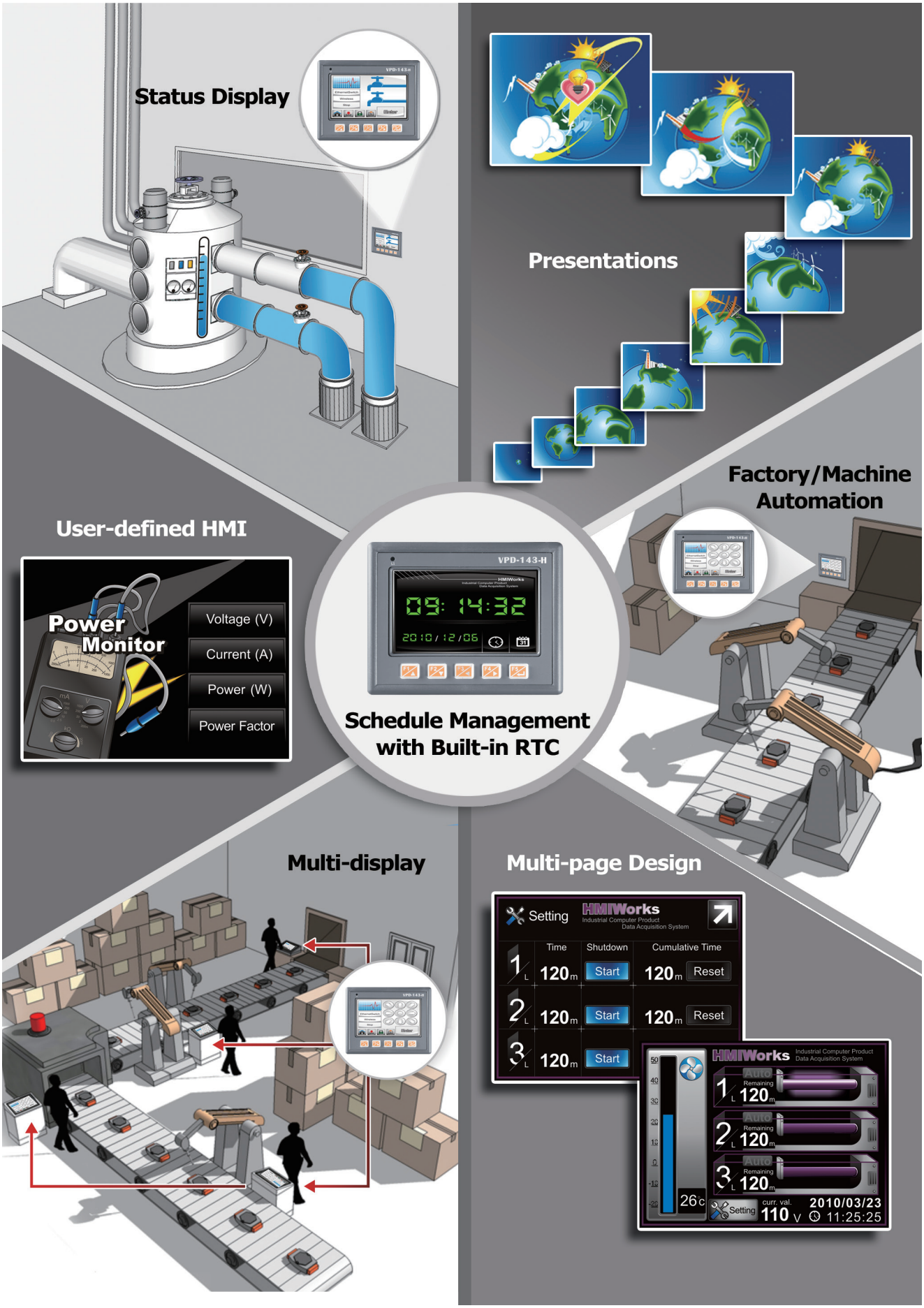
VPD-142-H/VPD-142N-H/VPD-143-H/VPD-143N-H with DIN-Rail Mounting



VPD-142-H/VPD-142N-H/VPD-143-H/VPD-143N-H Panel Mounting



Applications

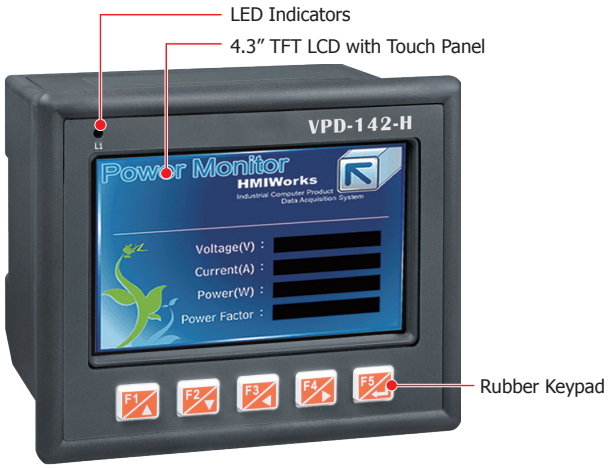


Specifications

Models	VPD-142-H	VPD-142N-H	VPD-143-H	VPD-143N-H
CPU Module				
CPU	32-bit RISC CPU			
Memory Expansion	16 MB SDRAM / 16 MB Flash			
Real Time Clock (RTC)	Yes			
Buzzer	Yes			
Rotary Switch (0~9)	Yes			
Communication Interface				
Serial Port 1	One set of RS-232 (3-pin) / RS-485 (including Self-Tuner)			
Serial Port 2	One set of RS-232 (3-pin) / RS-485 (including Self-Tuner)			
USB 1.1 Client	Firmware updates only			
Ethernet	-		RJ-45 x 1, 10/100 Base-TX	
I/O Expansion				
I/O Expansion Bus	Yes, One of XVboards			
MMI (Main Machine Interface)				
LCD	4.3" TFT(Resolution 480 X 272 X 16), defective pixels <= 3			
Backlight Life	20,000 hours			
Brightness	400 cd/m2			
LED Indicator	Yes			
Touch Panel	Yes			
Reset Button	Yes			
Rubber Keypad	5 keys (Programmable)	-	5 keys (Programmable)	-
Electrical				
Powered from Terminal Block	+12 ~ 48 VDC			
Powered from PoE	-		IEEE 802.3af, Class1 (48 V)	
Power Consumption	2.5 W			
Mechanical				
Dimensions (W x L x H)	131 mm x 105 mm x 54 mm			
Ingress Protection	Front Panel: IP65			
Installation	DIN-Rail Mounting and Panel Mounting			
Environmental				
Operating Temperature	-20 ~ +50°C			
Storage Temperature	-30 ~ +80°C			
Ambient Relative Humidity	10 ~ 90% RH, non-condensing			

Appearance

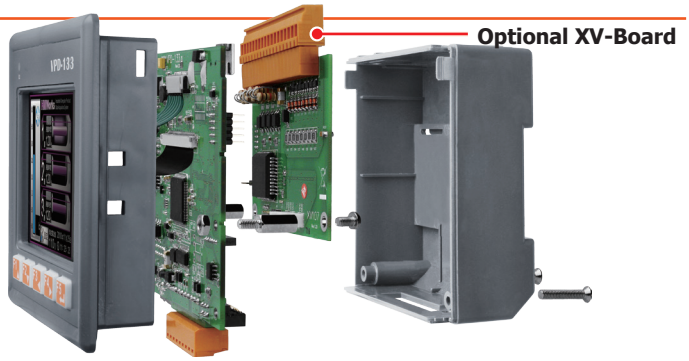
VPD-142-H/143-H Front View



VPD-142N-H/143N-H Front View

XV-Board Assembly Drawing

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

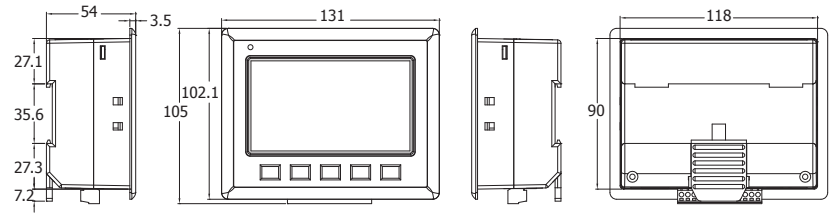


DIO Board							Relay Output Board	
Model		**XV107**	**XV107A**	**XV110**	**XV111**	**XV111A**	**XV116**	
Image								
Digital Input								
Channel		8	8	16	-	-	5	
Contact		Wet	Wet	Dry+Wet			Wet	
Sink/Source (NPN/PNP)		Source	Sink	Sink/Source			Sink/Source	
Wet Contact	On Voltage Level	+3.5 VDC ~ +50 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 KΩ, 0.5 W					10 KΩ, 0.5 W	
Overvoltage Protection		70 VDC					70 VDC	
Digital Output								
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			
Relay Output								
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 @ ≧ 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						10^8 ops.	30 X 10^6 ops.
	Electrical Endurance						2 X 10^5 ops.	1 X 10^5 ops.
Isolation								
Intra-module Isolation, Field to Logic		3750 VDC						
Power Requirements								
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					
Analog Input					
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		10 Hz	
	Fast Mode	200 Hz		200 Hz	
Input Impedance		20 MΩ		20 MΩ	
Overvoltage Protection		120 VDC		120 VDC	
Analog Output					
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
Universal Digital Input/Output					
Channel		-		DI+DO=8 (by Wire)	-
Digital Input					
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
Digital Output					
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 10^6 ops./1 x 10^5 ops.			
Isolation					
Intra-module Isolation, Field to Logic		2000 VDC			
Power Requirements					
Consumption		1.6 W		0.8 W	1.6 W

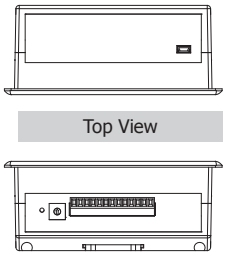
Dimensions (Units: mm)

VPD-142-H/VPD-143-H



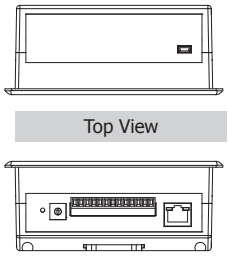
Left View | Front View | Right View | Rear View

VPD-142-H



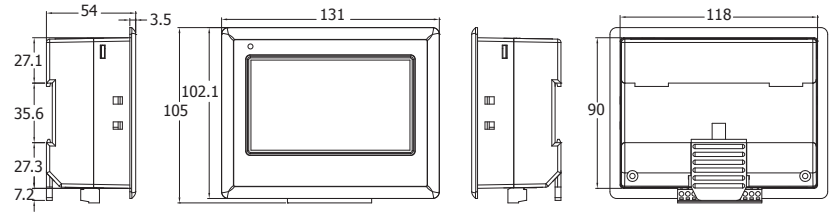
Top View | Bottom View

VPD-143-H



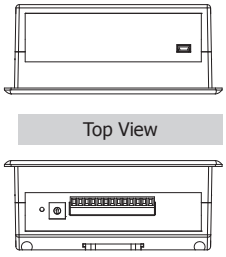
Top View | Bottom View

VPD-142N-H/VPD-143N-H



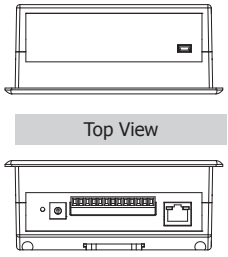
Left View | Front View | Right View | Rear View

VPD-142N-H



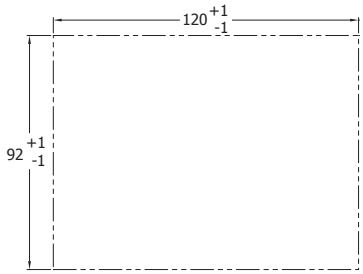
Top View | Bottom View

VPD-143N-H



Top View | Bottom View

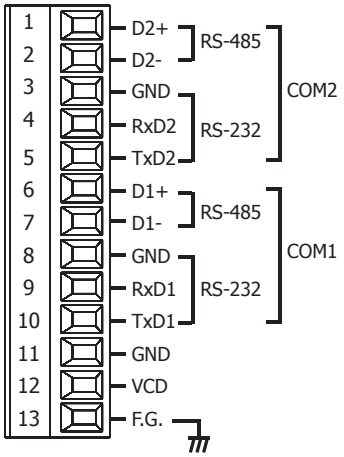
VPD-142-H/142N-H/143-H/143N-H



Recommended Panel Cutout

Pin Assignments

VPD-142-H/142N-H/143-H/143N-H



Ordering Information

VPD-142-H CR	4.3” Touch HMI device with RS-232/RS-485, USB, RTC, Rubber Keypad, support XV-board (RoHS)
VPD-142N-H CR	4.3” Touch HMI device with RS-232/RS-485, USB, RTC,support XV-board (RoHS)
VPD-143-H CR	4.3” Touch HMI device with Ethernet, RS-232/RS-485, USB, RTC, Rubber Keypad, support XV-board (RoHS)
VPD-143N-H CR	4.3” Touch HMI device with Ethernet, RS-232/RS-485, USB, RTC, support XV-board (RoHS)

Accessories

 CA-USB10	USB to 5P Mini-USB, 28AWG, 1.5 m
 MDR-60-24 CR	24 VDC/2.5A, 60 W Power Supply with DIN-Rail Mounting (RoHS)
 DIN-KA52F CR	24 VDC/1.04 A, 25 W Power Supply with DIN-Rail Mounting (RoHS)