

TVP-110

User's Manual



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Chapter 1. About this Manual



1.1 Introduction

This is a user manual about TVP-110, which mainly includes introduction, application environment of the product, description of appearance, product characteristics, technical parameters, setting of common functions, machine installation, matters needing attention and after-sales common problem diagnosis. This manual is designed to help users solve problems encountered in the process of use, please be sure to read this manual in detail, so as to better use the TVP-110.

1.2 User and Product Safety

- Never use strong pressure onto the screen or subject it to severe impact, as the LCD panel could become cracked and possibly cause personal injury. If the LCD panel is broken, never touch the liquid inside because the liquid irritates the skin.
- Although the VT has passed the test of IP66 standard for water and dust resistance, avoid prolonged exposure to rain or other concentrated moisture. Such condition exceeds the IP66 standard, and could result in water or other contaminants entering into the VT.
- Use only the original approved AC/DC Adapter with the VT. Use of an unapproved AC/DC Adapter could result in electrical problems, or even cause a fire or electrical shock to the user.
- Do not disassemble the VT. Servicing should be done by supplier only. If the VT or accessories gets damaged due to wrong handling or unauthorized repair, warranty is void. In case the warranty seals are broken, warranty is void too.
- Make regularly back-up of all important data.
- Under no circumstance will supplier be liable for any direct, indirect, consequential or incidental damages arising out of the use or inability to use the hardware and software and/or any data loss, even if supplier has been informed about the possibility of such damages.

1.3 Recycling & disposal instructions



Do not throw this product in the home waste bin.



1.4 Regulatory information



For CE, FCC, RoHS and other Document of Conformities, consult the Contact Window of Darveen Computer.

1.5 Product application scenario

TVP-110 is the latest generation of rugged M12 vehicle terminal for rail train that comes with Intel Celeron J1900 platform processor and Linux , Windows operating system, Darveen's TVP-110 series touch panel PC is a fanless human machine interface (HMI) equipped with a 10.4-inch display with projective capacitive touchscreen aimed at railway applications. The panel's small flat design saves space for easy installation in driver cabins.It is designed for rail train display and control panel.

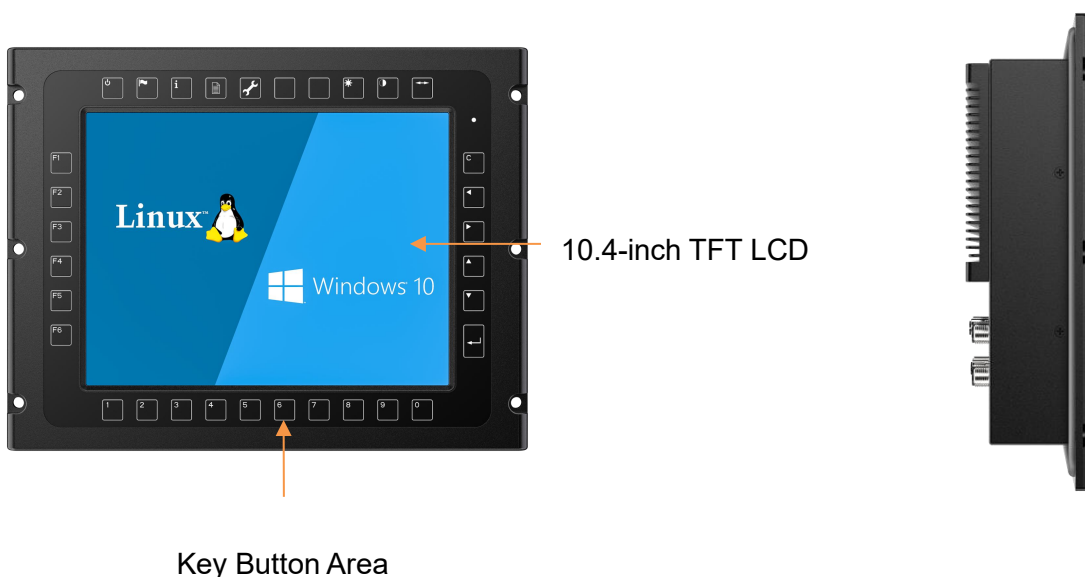
Chapter 2. Description of Product



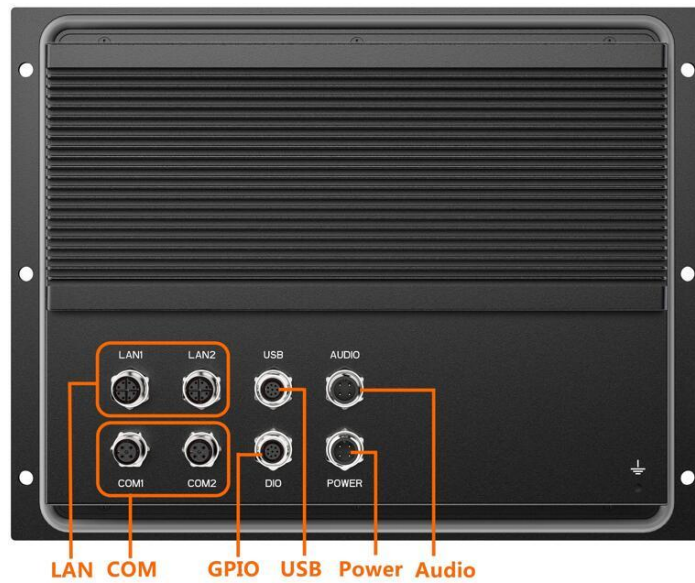
2.1 Overview

Darveen's TVP-110 series touch panel PC is a fanless human machine interface (HMI) equipped with a 10.4-inch display with projective capacitive touchscreen aimed at railway applications. The panel's small flat design saves space for easy installation in driver cabins. The configuration flexibly allows the system to be adjusted for specific applications and train models. Designed to withstand operation in harsh environments, TVP-110 supports a wide operating temperature range (-40~70 °C), and satisfies EN 50155 railway regulations. These features as:

- Intel® Celeron® J1900 CPU (2M Cache, 2.00 GHz)
- 10.4" industrial-grade LCD panel and touch
- M12 Aviation I/O interface
- IP65-rated front panel and fanless design
- Support -40~70°C temperature range
- Support 24/48/72/110Vdc ($\pm 40\%$) power input
- Compliant with UIC 612-01 keyboard layout
- Optional Expansion WiFi, Bluetooth, LTE, GPS, CAN



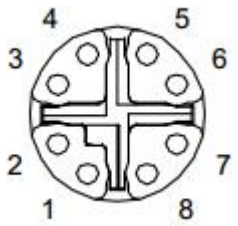
2.2 I/O Interfaces

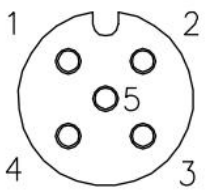


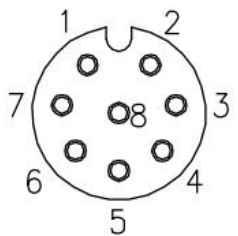
2.3 I/O Definition

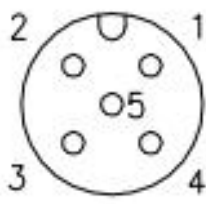


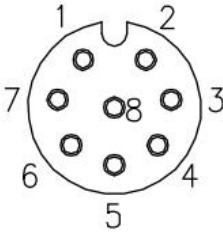
Power	Pin	Definition	Male
M12-A-4P-M	1	DC-	
	2	DC+	
	3	DC+	
	4	DC-	

LAN	Pin	Definition	Female
M12-X-8P-F	1	MDI0-	
	2	MDI0+	
	3	MDI1+	
	4	MDI1-	
	5	MDI3+	
	6	MDI3-	
	7	MDI2-	
	8	MDI2+	

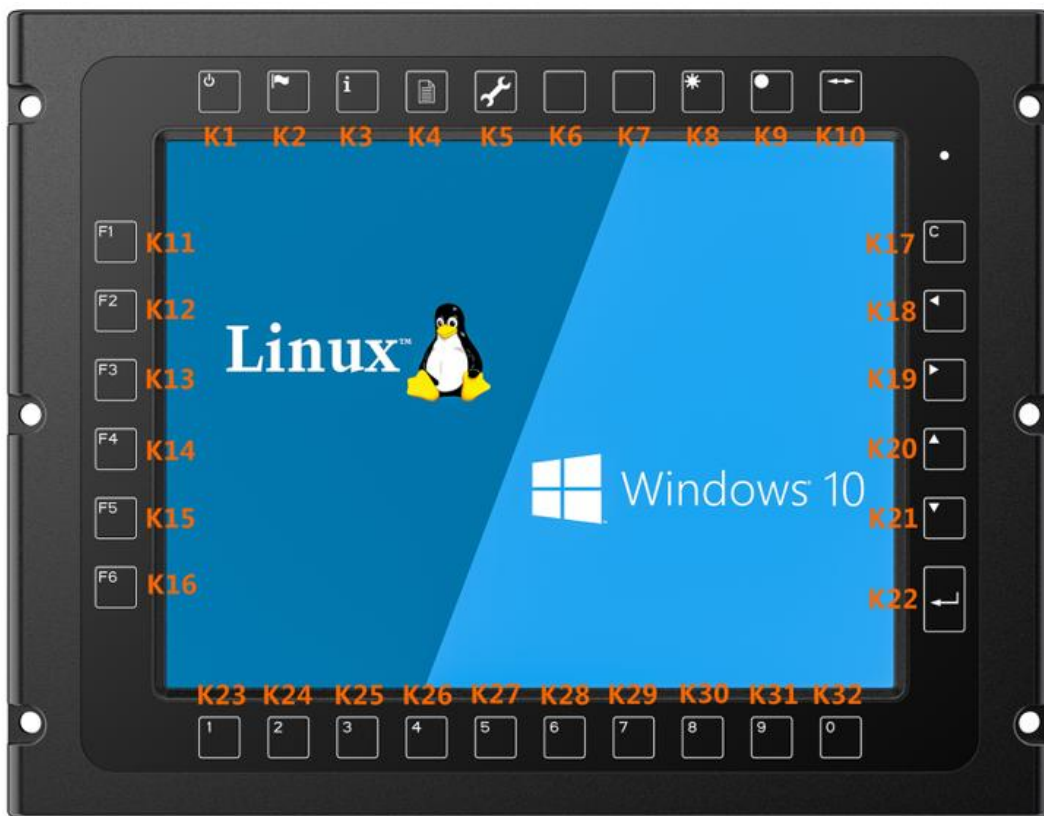
COM	Pin	Definition	Female
M12-A-5P-F	1	422_T- / 485-	
	2	422_T+ / 485+	
	3	422_RX-	
	4	422_RX+	
	5	GND	

USB	Pin	Definition	Female
M12-A-8P-F	1	VCC1	
	2	D1-	
	3	D1+	
	4	GND	
	5	VCC2	
	6	D2-	
	7	D2+	
	8	GND	

































Audio	Pin	Definition	Male
M12-A-5P-M	1	Line-out_R	
	2	Mic-in_R	
	3	Mic-in_L	
	4	Line-out_L	
	5	GND	

GPIO	Pin	Definition	Female
M12-A-8P-F	1	VCC	
	2	DI1	
	3	DI2	
	4	DI3	
	5	DI4	
	6	DO1	
	7	DO2	
	8	GND	

2.4 Key Definition



- * Press the power button (K1) for less than 1 second: Backlight on/off
- * Press and hold the power button (K1) for 5 seconds: System reboot

Key	Icon	Definition	Key	Icon	Definition
K1		Backlight on/off; Reboot *	K17		ESC
K2		Shift F2	K18		Left
K3		Shift F3	K19		Right
K4		Shift F4	K20		Up
K5		Shift F5	K21		Down
K6		Shift F6	K22		Enter
K7		Shift F7	K23		1
K8		Shift F8	K24		2
K9		Shift F9	K25		3
K10		Shift F10	K26		4
K11		F1	K27		5
K12		F2	K28		6
K13		F3	K29		7
K14		F4	K30		8
K15		F5	K31		9
K16		F6	K32		0

2.5 System Specifications

The TVP-110 detailed specifications as follows. Unless otherwise noted, all the specifications are subject to change without prior notification.

TVP-110	
Processor	- Intel® Quad-Core Celeron J1900 (2.0GHz)
Memory	- 1 x SO-DIMM DDR3L-1333/1600 (up to 8GB)
Storage	- 1 x Full-size Mini-PCIe for mSATA SSD
Operating System	- Windows 7 - Windows 10 IoT Enterprise LTSC - Linux
Display	- 10.4 inch (4:3) TFT LCD - 500 cd/m ² Brightness - SVGA 1024 x 768 Resolution
Touch Panel	- Projective multi-touch capacitive screen
Input / Output Ports	- 2 x RS-422/485, 2500Vdc isolation - 2 x USB2.0 - 2 x GbE LAN, 2500Vdc isolation - 1 x GPIO, 4 in & 2 out, support 3.3V output, 2500Vdc isolation - 1 x Line-out - 1 x Mic-in - 1 x DC-in
Audio	- 1 x Line-out, 1 x Mic-in (M12 A-coded, 8-pin male)
Keys	- 32 keys (See the manual for the definition)
Power System	- DC Input: DC 110V (± 40% , Default, optional 24/48/72V) - Power Consumption: 28W Typ.
Dimensions and Weight	- Dimensions (W x D x H): 305 x 235 x 65 mm - Weight(N.W.) : 3.2 kg
Certification	- CE, FCC, EN50155:2017

2.6 Environment Standard

Operating Temperature	-20 to 70°C
Storage Temperature	-40 to 70°C
Relative Humidity	10 ~ 90% @ 40°C (non condensation)
Mounting Mode	Panel-mount
Vibration	IEC 61373
Water & Dust proof	Front panel meet IP65

Chapter3. Accessories and Package



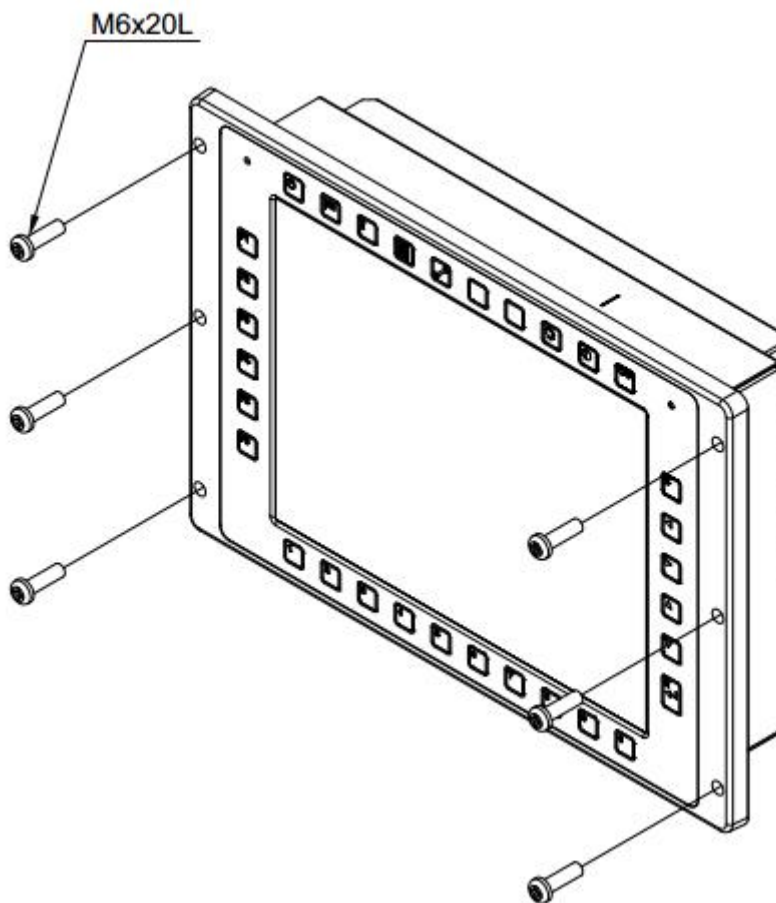
3.1 Check the package

Open the package and check all the parts are inside without shortage and damage.

Packing List:

1	1 x TVP-110
2	Convert Cables
3	1 x Certificate
4	1 x Warranty Card

3.2 Installation





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