Displays

DEWESoft®

TECHNICAL REFERENCE AND USER MANUAL

DS-DISP-12, DS-DISP-13, DS-DISP-15

1. Table of contents

2. About this document

This is the user's manual for DS-DISP-15 & DS-DISP-13. It includes pictures, technical drawings and how-to instructions.

2.1. Legend

The following symbols and formats will be used throughout the document.

Important
It gives you important information about the subject.
Please read carefully!

Hint
It gives you a hint or provides additional information about a subject.

Example
Gives you an example of a specific subject.

2.2. Online versions

2.2.1. Device Technical Reference Manual

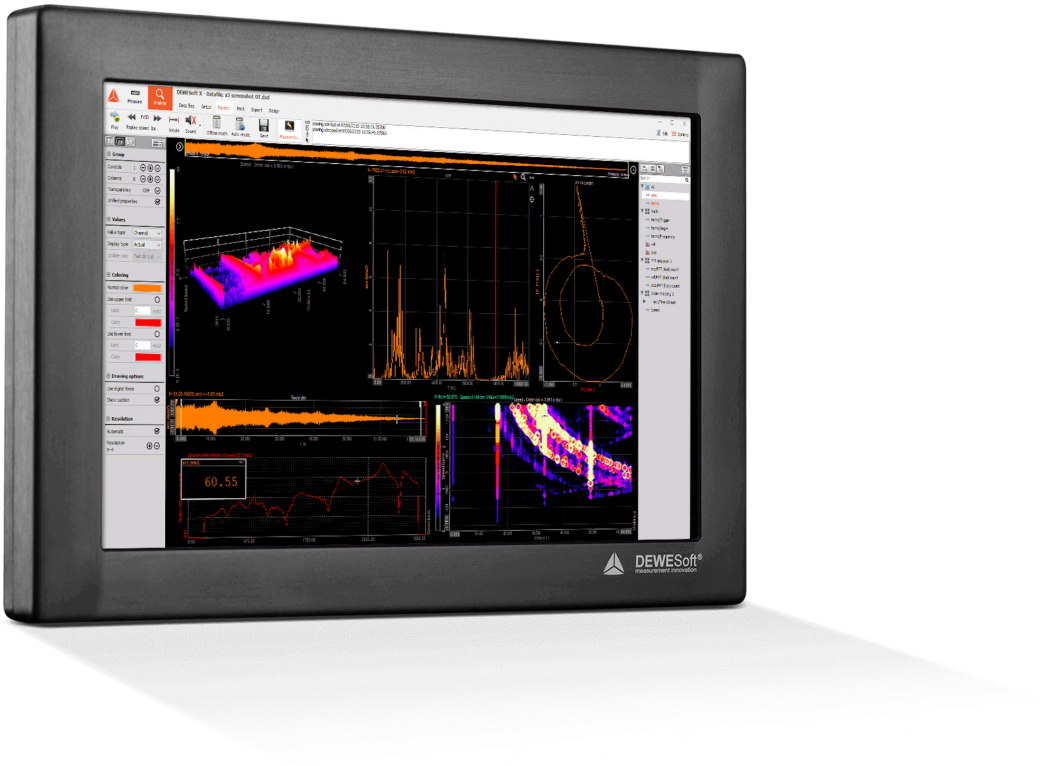
The most recent version of this manual can be downloaded from our homepage:
https://download.dewesoft.com/list/manuals-brochures/hardware-manuals
In the *Hardware Manuals* section click the download link for the *Device® technical reference manual*.

2.2.2. DEWESoft® User Manual

The DEWESoft® User Manual document provides basics and additional information and examples for working with DEWESoft® and certain parts of the program.
The latest version of the DEWESoft® tutorials can be found here:
https://download.dewesoft.com/list/manuals-brochures/software-manuals
In the Software Manuals section click the download link of the DEWESoft X User Manual entry.

3. DS-DISP-12

DS-DISP-12 is a 12'' LED mobile display built into a rugged aluminum chassis for field tests and measurements. It is designed specifically to work with our data acquisition systems such as SBOX, MINITAURs , SIRIUS R2/R4, SIRIUS R8, and KRYPTON CPU.



DS-DISP-12 offers a high-quality and high-brightness LED display that will ensure visibility even in the harshest testing conditions and from wide view angles.

3.1. Scope of supply

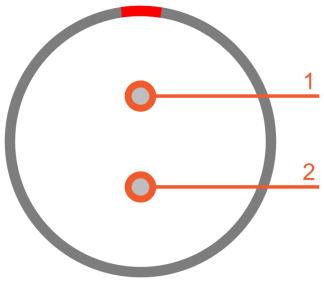
- DS Display 12''
- CASES-XTRABAG-400 + FOAM-DISPLAY-12 (packing)
- CABLE-HDMI-HDMI-3M (video)
- CABLE-VGA-MOB-DISP-3M (video)
- CABLE-DVIm-DVIm-3M (video)
- L1B2m-L1B2f-DISP-3M (power)
- CABLE-USB1S-USB2S-3M (touch screen)

3.2. Specifications

Interfaces and options	DS-DISP-12
Touch Screen	PCAP, Multi-touch
Touch Screen Interface	1x USB 2.0, USB Mini B
Video	1x VGA, 1x DVI, 1x HDMI
Mounting	3x 1/4-20 UNC thread insert on bottom side, VESA mounting compatible on back side
Display	
Type	TFT 12.1''
Resolution	WXGA, 1280 x 800 pixels @ 60Hz
Active display Area	261.1 x 163.2 mm
Luminance	1200 cd/m²
Contrast Ratio	1000:1 (typ.)
Viewing Angle (CR>=10)	-89 ~ +89 (H); -89 ~ +89 (V)
Synchronization Range Horizontal / Vertical	30 ~ 83 kHz / 45 ~ 75Hz
Power Management	VESA DPMS Compliant
Power	
Power supply	9 - 36 V DC
Power consumption	4 W (Min. backlight) - 18 W (Max. backlight) (17 W, 0.7 A @ 24 V)
Environmental	
Operating Temperature	-20 to 60 °C
Storage Temperature	-30 to 80 °C
Humidity	Up to 80 % RH non-condensing at 50 °C
IP rating	IP40
Shock & Vibration	Vibration sweep sinus (EN 60068-2-6:2008) Vibration random (EN 60721-3-2: 1997 - Class 2M2) Shock (EN 60068-2-27:2009) MIL-STD-810D
Physical	
Dimensions	298 x 211 x 50.5 mm
Weight	2.0 kg

3.2.1. Connectors

3.2.1.1. Power IN connector



Power IN Connector 2pin

Pin	Name
1	V+
2	V-

For the power supply DC voltage between 9 and 36 Volts is required.

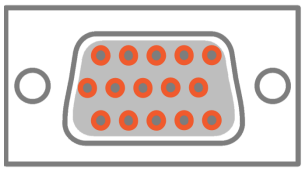
Connector: LEMO 1B series
Power In connector (on the device): EXJ.1B.302.CLA
Mating connector (for the cable): FGJ.1B.302.CLL

3.2.1.2. USB

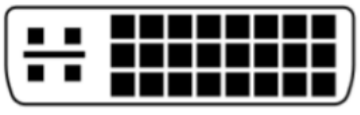
Mini USB B Connector

The USB connector is used to connect the Touch screen controller in the DS-DISP-12 to the PC.

3.2.1.3. Video Inputs



VGA Connector



DVI Connector

Two video connectors are available to connect DS-DISP-12 to the video signal source; either analog VGA or digital DVI signal can be connected.

3.3. Touch controller

3.3.1. Controller as a HID-compliant mouse

Touch screen hardware should be recognised by the OS as a HID-compliant mouse.

Open Control panel, then select System and check in Device Manager to confirm that new HW is recognised correctly.

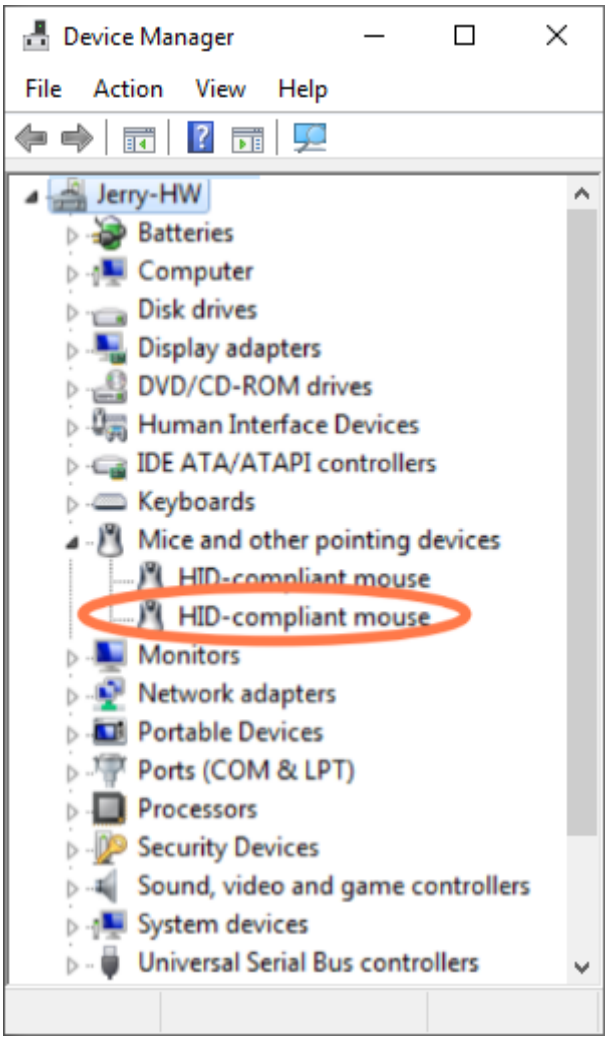


Image 1: Device Manager

3.4. On Screen Display (OSD) & Keypad

3.4.1. Functionality while OSD is closed

Key	Function	Remark
POWER	Switch Power On/Off	
MENU	Open OSD Main Menu/ENTER	
SELECT	Auto-colour	
A	Opens brightness adjustment bar	
B	Input select	

3.4.2. Functionality while OSD is open

Key	Function	Remark
POWER	Switch Power On / Off	
MENU	Leave OSD main menu Select highlighted function	
SELECT	TBD	
A	Select previous menu item	In main menu or in submenu
	Move picture to the left	In H-Position submenu
	Move picture up	In V-Position submenu
	Decrease slider value	
B	Select next menu item	In main menu or in submenu
	Move picture to the right	In H-Position submenu
	Move picture down	In V-Position submenu
	Increase slider value	

4. DS-DISP-15 & DS-DISP-13

DS-DISP presents Dewesoft affordable displays that offer the perfect combination of price and performance. Built for various project needs – DS-DISP-13 and DS-DISP-15 touchscreen monitors are slim, compact, and suitable to be mounted or embedded inside the vehicle or aircraft, or simply used on the field as a portable screen on the go. The touchscreen monitors provide excellent system compatibility, sensitivity, and intuitive operation.

4.1. General overview

4.1.1. Scope of supply

- Display 15'' or 13''
- RAM Double suction cup holder
- 2 Pin power supply cable (max 16.6V)
- AC power supply 12V adapter
- 2XUSB-A to USB-C 2.5m
- HDMI Cable 2.5m

4.1.2. Button symbols meaning

Button	Function	Description
	Power	Press once to turn on the monitor and press again to turn off the monitor. Reset: Press and hold for 5 seconds to reset the OSD settings to default.
	Exit	Press this button to show "Input Source" and then press to switch the input sources. When using the OSD menu, press this button to re to the previous page.
	Menu/ Select	Press this button to launch the OSD panel. When using the OSD menu, press this button to select and enter the next page.
	Increase Brightness/ Up	Press this button to show "Brightness bar". Press and hold this button to increase the brightness continuously. In the OSD menu, press this button to move up or to the left.
	Decrease Brightness/ Down	Press this button to show "Brightness bar". Press and hold this button to decrease the brightness continuously. In the OSD menu, press this button to move down or to the right.
	OSD Menu Unlock	Press both "Up" and "Down" buttons at the same time to release "OSD Menu Lock" and enable the functions of OSD buttons.

Image 2: DS-DISP buttons layout

4.1.3. LED Power indicator

Display shows green light when the display is "On" and shows red light when the display is in stand by. There is no light when the device is "Off".

4.2. Technical specifications

PARAMETER	DS-DISP-15	DS-DISP-13
Resolution	1920x1080 (widescreen 16:9)	1920x1080 (widescreen 16:9)
Color depth	16.7 M Colors	16.7 M Colors
Brightness (typical):	250 (cd/m2)	350 (cd/m2)
Contrast (typical)	700:1	1000:1
View angle	170°(H)/170°(V)(CR>10)	170°(H)/170°(V)(CR>10)
Response time	15ms	15ms
Video input	HDMI-A(HDMI v1.4) x1 , USB Type-C (DP1.2) x1	HDMI-A(HDMI v1.4) x1 , USB Type-C (DP1.2) x1
Audio input	3.5mm mini jack	3.5mm mini jack
USB-C port	Video input + Power delivery 5V DC	Video input + Power delivery 5V DC
DC IN port	12V DC input (0.7A)	12V DC input (0.7A)
Power consumption	8.2W, standby 1.0W, off mode 0.2W	6W, standby 1.0W, off mode 0.2W
Environment cond.	Operation 0 - 50°C, Storage -20 - 60°C	Operation 0 - 50°C, Storage -20 - 60°C
Weight	1200g without RAM mount	840g without RAM mount

4.2.1. DS-DISP-15: Dimensions

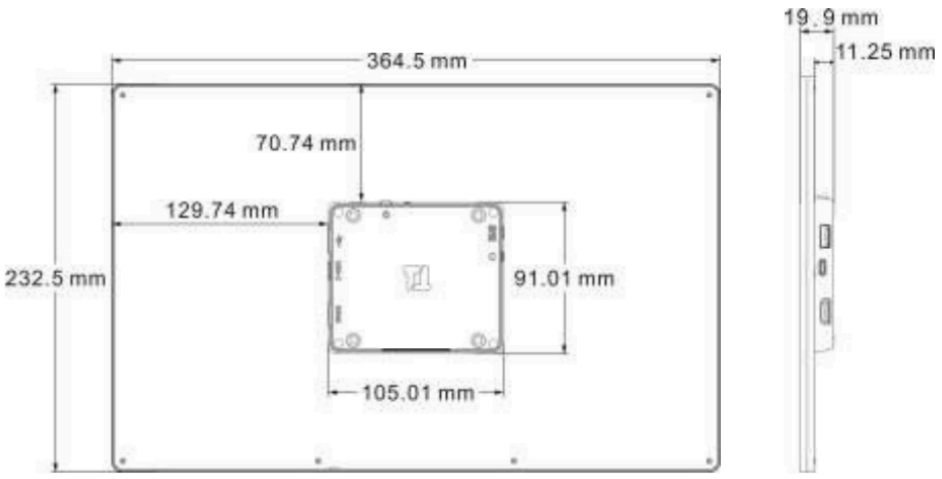


Image 3: DS-DISP-15 technical drawing

4.2.2. DS-DISP-13 Dimensions

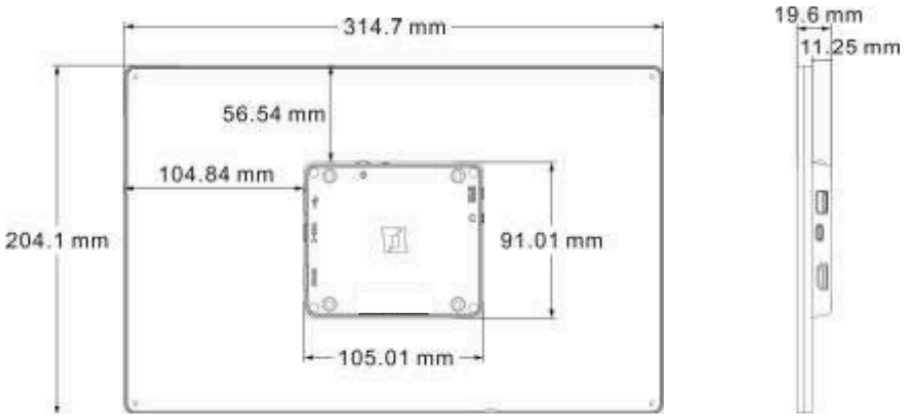


Image 4: DS-DISP-13 technical drawing

4.3. Installation guidelines

4.3.1. USB Type-C Video Input Connection

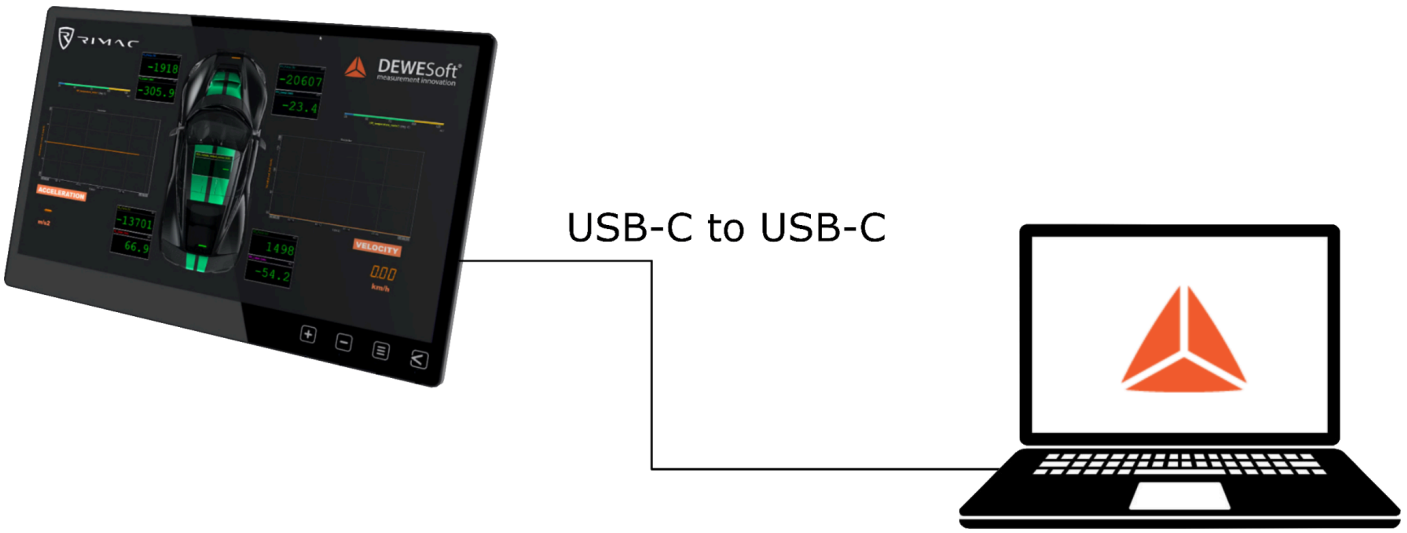


Image 5: USB-C Thunderbolt 3 connection

Important

The USB Type-C ports on computers or other devices must:
1. Support DisplayPort Alternate Mode (USB Type-C (DP Alt)).
2. Be able to stably output 5V 1.6A current to the monitor (if the computer cannot supply sufficient current, please connect a 12V adapter or Dewesoft 2pin power cable to the monitor.)

Important

The USB-C port on the monitor cannot supply power to the computer.

As shown in the image, connect the USB-C video cable to the USB Type-C(DP Alt) Port (Thunderbolt 3 port) on the computer. The computer outputs video, USB signals (touch screen), and 5V current through this cable to the display. There is no need to connect to the adapter when the computer's USB-C port can supply 1.6A current. Otherwise, please connect to the 12V power adapter or 2 Pin Lemo power supply cable, and the display will automatically interrupt the input current from the computer's USB-C port.

5.2. USB Type A and HDMI connection (Sbox, Minitaur, Sirius Rack)

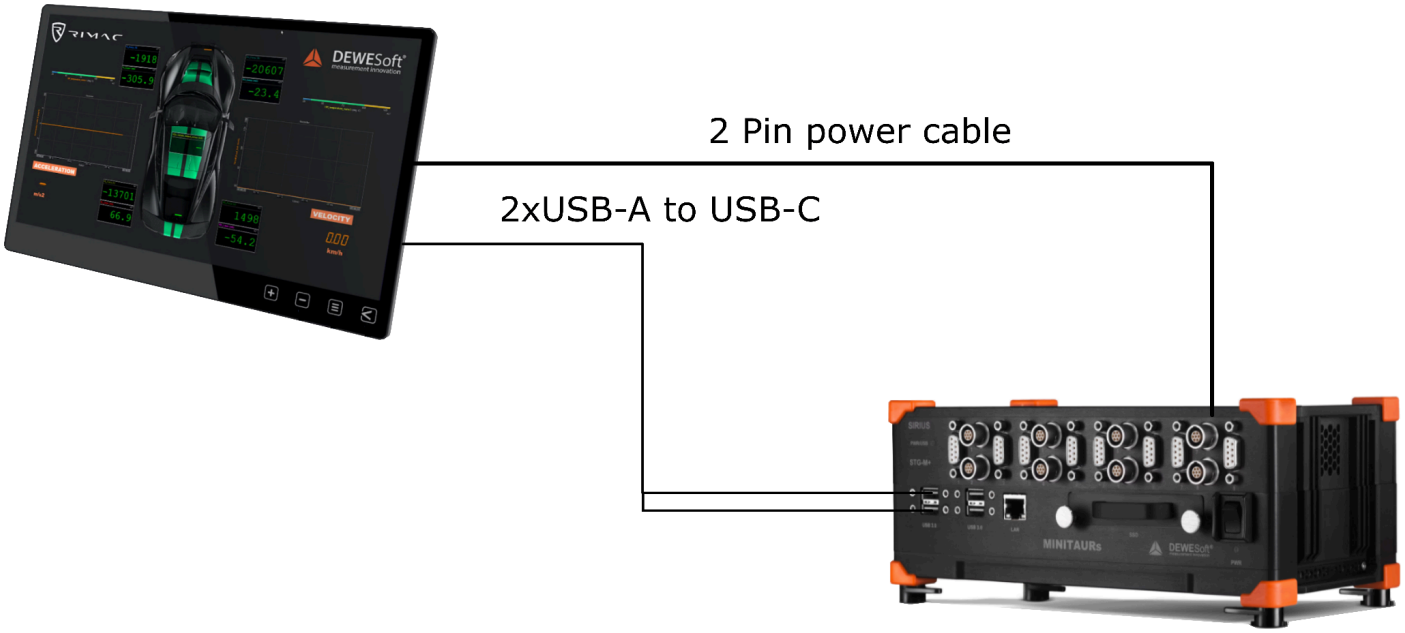


Image 6: 2x USB-A to USB-C connection

Important
OBSIDIAN Cannot power the display over USB C output!

As shown in the image, connect dual USB-A to the computer and USB C cable to the display for power and touch screen and HDMI for video connection. The computer outputs USB signals (touch screen), and 5V current through this cable to the display. There is no need to connect to the adapter when the computer's USB-C port can supply 1.6A current. Otherwise, please connect to the 12V power adapter or 2 Pin Lemo power supply cable, and the display will automatically interrupt the input current from the computer's USB-C port.

4.3.3. USB Type A, HDMI and separate power connection (Sbox, Minitaur, Sirius Rack, Krypton CPU)

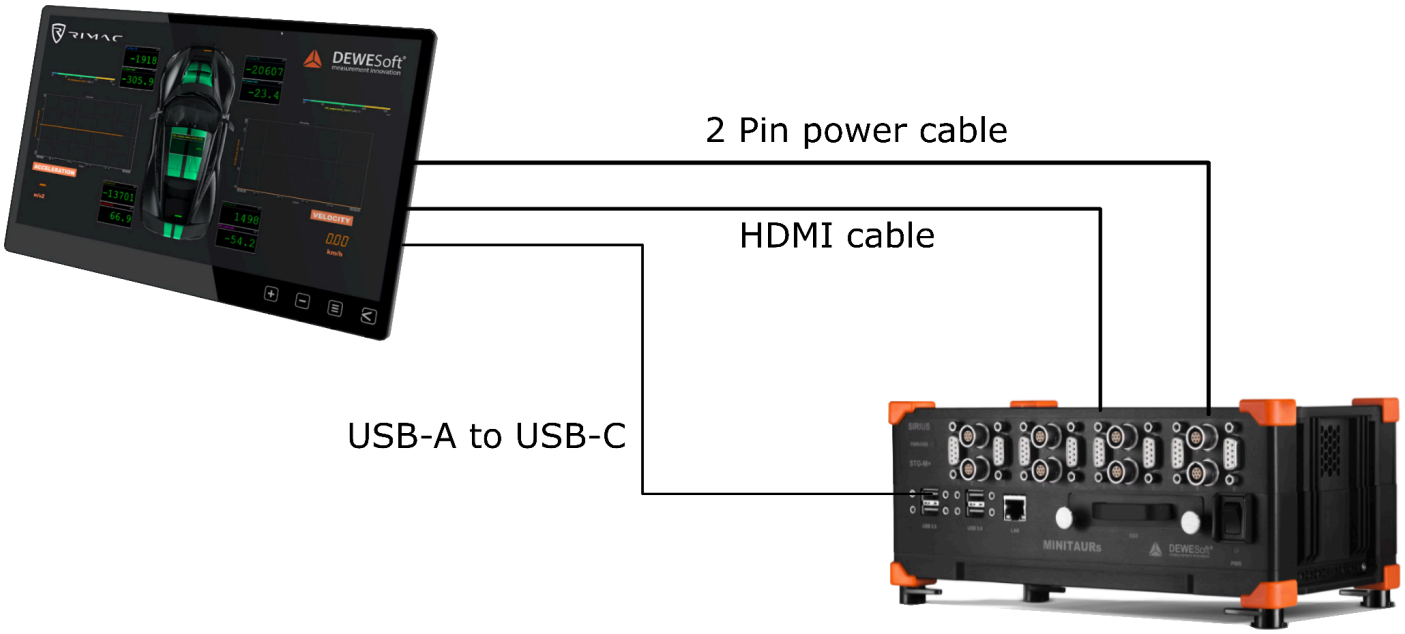


Image 7: Separate power cable connection

As shown in the image , connect dual USB-A to the computer and USB C cable to the display for touch screen, HDMI for video connection and a 12V power adapter or 2 Pin Lemo power supply cable. The computer outputs USB signals (touch screen) via USB A, Video on HDMI and the display gets power . Otherwise, please connect to the 12V power adapter or 2 Pin Lemo power supply cable, and the display will automatically interrupt the input current from the USB-C port.

5. Warranty information

Notice
The information contained in this document is subject to change without notice.

Note:
Dewesoft d.o.o. shall not be liable for any errors contained in this document. Dewesoft MAKES NO WARRANTIES OF ANY KIND WITH REGARD TO THIS DOCUMENT, WHETHER EXPRESS OR IMPLIED. DEWESOFT SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Dewesoft shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory, in connection with the furnishing of this document or the use of the information in this document.

The copy of the specific warranty terms applicable to your Dewesoft product and replacement parts can be obtained from your local sales and service office. To find a local dealer for your country, please visit https://dewesoft.com/support/distributors.

5.1. Calibration

Every instrument needs to be calibrated at regular intervals. The standard norm across nearly every industry is annual calibration. Before your Dewesoft data acquisition system is delivered, it is calibrated. Detailed calibration reports for your Dewesoft system can be requested. We retain them for at least one year, after system delivery.

5.2. Support

Dewesoft has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support please contact your local distributor first or Dewesoft directly.

Dewesoft d.o.o.
Gabrsko 11a
1420 Trbovlje Slovenia

Europe Tel.: +386 356 25 300
Web: http://www.dewesoft.com
Email: Support@dewesoft.com
The telephone hotline is available Monday to Friday from 07:00 to 16:00 CET (GMT +1:00)

5.3. Service/repair

The team of Dewesoft also performs any kinds of repairs to your system to assure a safe and proper operation in the future. For information regarding service and repairs please contact your local distributor first or Dewesoft directly on https://dewesoft.com/support/rma-service.

5.4. Restricted Rights

Use Slovenian law for duplication or disclosure. Dewesoft d.o.o. Gabrsko 11a, 1420 Trbovlje, Slovenia / Europe.

5.5. Printing History

Version 2.0.0, Revision 217 Released 2015 Last changed: 23. July 2018 at 16:54.

5.6. Copyright

5.7. Trademarks

We take pride in our products and we take care that all key products and technologies are registered as trademarks all over the world. The Dewesoft name is a registered trademark. Product families (KRYPTON, SIRIUS, DSI, DS-NET) and technologies (DualCoreADC, SuperCounter, GrandView) are registered trademarks as well. When used as the logo or as part of any graphic material, the registered trademark sign is used as a part of the logo. When used in text representing the company, product or technology name, the ® sign is not used. The Dewesoft triangle logo is a registered trademark but the ® sign is not used in the visual representation of the triangle logo.

6. Safety instructions

Your safety is our primary concern! Please be safe!

6.1. Safety symbols in the manual

Warning
Calls attention to a procedure, practice, or condition that could cause the body injury or death

Caution
Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.

6.2. General Safety Instructions

Warning

The following general safety precautions must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. Dewesoft d.o.o. assumes no liability for the customer's failure to comply with these requirements.

All accessories shown in this document are available as an option and will not be shipped as standard parts.

6.2.1. Environmental Considerations

Information about the environmental impact of the product.

6.2.2. Product End-of-Life Handling

Observe the following guidelines when recycling a Dewesoft system:

6.2.3. System and Components Recycling

Production of these components required the extraction and use of natural resources. The substances contained in the system could be harmful to your health and to the environment if the system is improperly handled at its end of life! Please recycle this product in an appropriate way to avoid unnecessary pollution of the environment and to keep natural resources.

This symbol indicates that this system complies with the European Union's requirements according to Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Please find further information about recycling on the Dewesoft web site www.dewesoft.com

Restriction of Hazardous Substances

This product has been classified as Monitoring and Control equipment and is outside the scope of the 2002/95/EC RoHS Directive. However, we take care of our environment and the product is lead-free.

6.2.4. General safety and hazard warnings for all Dewesoft systems

Safety of the operator and the unit depend on following these rules.

- Use this system under the terms of the specifications only to avoid any possible danger.
- Read your manual before operating the system.
- Observe local laws when using the instrument.
- DO NOT touch internal wiring!
- DO NOT use higher supply voltage than specified!
- Use only original plugs and cables for harnessing.
- You may not connect higher voltages than rated to any connectors.
- The power cable and connector serve as Power-Breaker. The cable must not exceed 3 meters, the disconnect function must be possible without tools.
- Maintenance must be executed by qualified staff only.
- During the use of the system, it might be possible to access other parts of a more comprehensive system. Please read and follow the safety instructions provided in the manuals of all other components regarding warning and security advice for using the system.
- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes or test leads, as these parts are connected to a voltage supply unit.
- Ground the equipment: For Safety Class 1 equipment (equipment having a protective earth terminal), a non-interruptible safety earth ground must be provided from the mains power source to the product input wiring terminals.
- Please note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, please read the corresponding specifications in the product manual carefully.
- The inputs must not, unless otherwise noted (CATx identification), be connected to the main circuit of category II, III and IV.
- The power cord separates the system from the power supply. Do not block the power cord, since it has to be accessible for the users.
- DO NOT use the system if equipment covers or shields are removed.
- If you assume the system is damaged, get it examined by authorized personnel only.
- Adverse environmental conditions are Moisture or high humidity Dust, flammable gasses, fumes or dissolver Thunderstorm or thunderstorm conditions (except assembly PNA) Electrostatic fields, etc.
- The measurement category can be adjusted depending on module configuration.
- Any other use than described above may damage your system and is attended with dangers like short-circuiting, fire or electric shocks.
- The whole system must not be changed, rebuilt or opened.
- DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until the safe operation can be verified by service-trained personnel. If necessary, return the product to Dewesoft sales and service office for service and repair to ensure that safety features are maintained.
- If you assume a more riskless use is not provided anymore, the system has to be rendered inoperative and should be protected against inadvertent operation. It is assumed that a more riskless operation is not possible anymore if the system is damaged obviously or causes strange

noises. The system does not work anymore. The system has been exposed to long storage in adverse environments. The system has been exposed to heavy shipment strain.

- Warranty void if damages caused by disregarding this manual. For consequential damages, NO liability will be assumed!
- Warranty void if damage to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding the system is prohibited due to safety and permission reasons (CE).
- Be careful with voltages >25 VAC or >35 VDC! These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not be covered!
- Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.
- Prevent using metal bare wires! Risk of short circuit and fire hazard!
- DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy over-voltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details please refer to the specifications.
- Make sure that your hands, shoes, clothes, the floor, the system or measuring leads, integrated circuits and so on, are dry.
- DO NOT use the system in rooms with flammable gasses, fumes or dust or in adverse environmental conditions.
- Avoid operation in the immediate vicinity of high magnetic or electromagnetic fields, transmitting antennas or high-frequency generators, for exact values please refer to enclosed specifications.
- Use measurement leads or measurement accessories aligned with the specification of the system only. Fire hazard in case of overload!
- Lithium ion batteries are classified as not hazardous when used according to the recommendations of the manufacturer described in Battery Safety Data Sheet, which is available for download from this link.
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatize the system unpowered to room temperature.
- Do not disassemble the system! There is a high risk of getting a perilous electric shock. Capacitors still might be charged, even if the system has been removed from the power supply.
- The electrical installations and equipment in industrial facilities must be observed by the security regulations and insurance institutions.
- The use of the measuring system in schools and other training facilities must be observed by skilled personnel.
- The measuring systems are not designed for use in humans and animals.
- Please contact a professional if you have doubts about the method of operation, safety or the connection of the system.
- Please be careful with the product. Shocks, hits and dropping it from already- lower level may damage your system.
- Please also consider the detailed technical reference manual as well as the security advice of the connected systems.
- This product has left the factory in safety-related flawlessness and in proper condition. In order to maintain this condition and guarantee safety use, the user has to consider the security advice and warnings in this manual.

EN 61326-3-1:2008
IEC 61326-1 applies to this part of IEC 61326 but is limited to systems and equipment for industrial applications intended to perform safety functions as defined in IEC 61508 with SIL 1-3.

The electromagnetic environments encompassed by this product family standard are industrial, both indoor and outdoor, as described for industrial locations in IEC 61000-6-2 or defined in 3.7 of IEC 61326-1.

Equipment and systems intended for use in other electromagnetic environments, for example, in the process industry or in environments with potentially explosive atmospheres, are excluded from the scope of this product family standard, IEC 61326-3-1.

Devices and systems according to IEC 61508 or IEC 61511 which are considered as “operationally well-tried”, are excluded from the scope of IEC 61326-3-1.

Fire-alarm and safety-alarm systems, intended for the protection of buildings, are excluded from the scope of IEC 61326-3-1.

7. Documentation version history

Version	Date	Notes
V24-1	8.1.2024	Initial version - DS-DISP-12 - Release of DS-DISP-13, DS-DISP-15
V24-2	30.1.2024	Removed USB C cable from scope of supply for Disp 15 & 13
V24-3	16.2.2024	Added Scope Of Supply for DS-DISP-12