



FlatClient HYG

User Guide Rev. 2.2

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 FLATCLIENT HYG – USER GUIDE

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NOTICE

You find the most recent version of the "General Safety Instructions" online in the download area of this product.

Revision History

Revision	Brief Description of Changes	Date of Issue	Author
1.0	Initial Issue	2020-August-17	hjs
1.1	UV Notice added	2020-December 03	hjs
1.2	RFID option added in chapter 9.1.3.3	2021-February-23	hjs
1.3	Word2016 issues	2021-March-16	hjs
1.4	Added battery caution in French and updated PSU caution in English and French. Included installation and Start up information.	2021-Aug-09	CW
1.5	Cable colors added for IP67 protection cable in Table 12, also added cable colors in chapter 10.3.1	2022-January-12	hjs
1.6	New SAP-numbers 1069-4764 and 1069-5050 in Table 3: Accessories	2022-March-23	hjs
1.7	New processor J3455, accessories modified	2022-April-21	hjs
1.8	Updated Table 3: Accessory List	2022-July-12	CW
1.9	Table 3: Power Supply Kit VESA, power cable's SAP number changed to 1069-4764. Added the new Kontron Logo.	2023-Feb-15	CW
2.0	Updated Table 3: Accessories and added Figure14	2023-Aug-22	CW
2.1	Updated Table 3 Accessories and chapter 10.3.1 and 10.3.2	2023-Oct-12	CW
2.2	Updated Chapter 10.3 Start Up Procedure	2023-Dec-22	CW

Terms and Conditions

Kontron warrants products in accordance with defined regional warranty periods. For more information about warranty compliance and conformity, and the warranty period in your region, visit <http://www.kontron.com/terms-and-conditions>.

Kontron sells products worldwide and declares regional General Terms & Conditions of Sale, and Purchase Order Terms & Conditions. Visit <http://www.kontron.com/terms-and-conditions>.

For contact information, refer to the corporate offices contact information on the last page of this user guide or visit our website [CONTACT US](#).

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Find Kontron contacts by visiting: <https://www.kontron.de/support-and-services>.

Customer Service

As a trusted technology innovator and global solutions provider, Kontron extends its embedded market strengths into a services portfolio allowing companies to break the barriers of traditional product lifecycles. Proven product expertise coupled with collaborative and highly-experienced support enables Kontron to provide exceptional peace of mind to build and maintain successful products.

For more details on Kontron's service offerings such as: enhanced repair services, extended warranty, Kontron training academy, and more visit <http://www.kontron.com/support-and-services/services>.

Customer Comments

If you have any difficulties using this user guide, discover an error, or just want to provide some feedback, contact [Kontron support](#). Detail any errors you find. We will correct the errors or problems as soon as possible and post the revised user guide on our website.

Symbols

The following symbols may be used in this user guide

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

NOTICE indicates a property damage message.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.



Electric Shock!

This symbol and title warn of hazards due to electrical shocks (> 60 V) when touching products or parts of products. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.



ESD Sensitive Device!

This symbol and title inform that the electronic boards and their components are sensitive to static electricity. Care must therefore be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.



HOT Surface!

Do NOT touch! Allow to cool before servicing.



Laser!

This symbol inform of the risk of exposure to laser beam and light emitting devices (LEDs) from an electrical device. Eye protection per manufacturer notice shall review before servicing.



This symbol indicates general information about the product and the user guide.

This symbol also indicates detail information about the specific product configuration.



This symbol precedes helpful hints and tips for daily use.

For Your Safety

Your new Kontron product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new Kontron product, you are requested to conform with the following guidelines.

High Voltage Safety Instructions

As a precaution and in case of danger, the power connector must be easily accessible. The power connector is the product's main disconnect device.

⚠ CAUTION

Warning

All operations on this product must be carried out by sufficiently skilled personnel only.

⚠ CAUTION



Electric Shock!

Before installing a non hot-swappable Kontron product into a system always ensure that your mains power is switched off. This also applies to the installation of piggybacks. Serious electrical shock hazards can exist during all installation, repair, and maintenance operations on this product. Therefore, always unplug the power cable and any other cables which provide external voltages before performing any work on this product.

Earth ground connection to vehicle's chassis or a central grounding point shall remain connected. The earth ground cable shall be the last cable to be disconnected or the first cable to be connected when performing installation or removal procedures on this product.

Special Handling and Unpacking Instruction

NOTICE



ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times.

⚠ CAUTION

Handling and operation of the product is permitted only for trained personnel within a work place that is access controlled. Follow the "General Safety Instructions" supplied with the product.

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the product is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the product.

Lithium Battery Precautions

If your product is equipped with a lithium battery, take the following precautions when replacing the battery.

⚠ CAUTION

Caution: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebut les batteries usagées selon les instructions.

General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the product, that are not explicitly approved by Kontron and described in this user guide or received from Kontron Support as a special handling instruction, will void your warranty.

This product should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This also applies to the operational temperature range of the specific board version that must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, only follow the instructions supplied by the present user guide.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the product then re-pack it in the same manner as it was delivered.

Special care is necessary when handling or unpacking the product. See Special Handling and Unpacking Instruction.

Quality and Environmental Management

Kontron aims to deliver reliable high-end products designed and built for quality, and aims to complying with environmental laws, regulations, and other environmentally oriented requirements. For more information regarding Kontron's quality and environmental responsibilities, visit <http://www.kontron.com/about-kontron/corporate-responsibility/quality-management>.

Disposal and Recycling

Kontron's products are manufactured to satisfy environmental protection requirements where possible. Many of the components used are capable of being recycled. Final disposal of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.

WEEE Compliance

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- ▶ Reduce waste arising from electrical and electronic equipment (EEE)
- ▶ Make producers of EEE responsible for the environmental impact of their products, especially when the product become waste
- ▶ Encourage separate collection and subsequent treatment, reuse, recovery, recycling and sound environmental disposal of EEE
- ▶ Improve the environmental performance of all those involved during the lifecycle of EEE



Environmental protection is a high priority with Kontron.

Kontron follows the WEEE directive

You are encouraged to return our products for proper disposal.

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1/ Introduction

With its FlatClient HYG Monitor series, Kontron offers high mechanical flexibility with respect to the design. It can be used as VESA 100 solution as well as a support-arm solution. The support-arm variant offers an IP69K protection, the VESA variant an IP67 protection. The housing is made from stainless steel with a smooth surface for easy cleaning.

The system is service-friendly for the user and is designed for a long life cycle thanks to carefully selected components from renowned manufacturers.

Figure 1: FlatClient HYG



2/ General Safety Instructions

Please read this passage carefully and take careful note of the instructions, which have been compiled for your safety and to ensure to apply in accordance with intended regulations. If the following general safety instructions are not observed, it could lead to injuries to the operator and/or damage of the product; in cases of non-observance of the instructions Kontron Europe is exempt from accident liability, this also applies during the warranty period.

The product has been built and tested according to the basic safety requirements for low voltage (LVD) applications and has left the manufacturer in safety-related, flawless condition. To maintain this condition and to also ensure safe operation, the operator must not only observe the correct operating conditions for the product but also the following general safety instructions:

- ▶ The product must be used as specified in the product documentation, in which the instructions for safety for the product and for the operator are described. These contain guidelines for setting up, installation and assembly, maintenance, transport or storage.
- ▶ The on-site electrical installation must meet the requirements of the country's specific local regulations.
- ▶ If a power cable comes with the product, only this cable should be used. Do not use an extension cable to connect the product.
- ▶ To guarantee that sufficient air circulation is available to cool the product, please ensure that the ventilation openings are not covered or blocked. If a filter mat is provided, this should be cleaned regularly. Do not place the product close to heat sources or damp places. Make sure the product is well ventilated.
- ▶ Only connect the product to an external power supply providing the voltage type (AC or DC) and the input power (max. current) specified on the Kontron Product Label and meeting the requirements of the Limited Power Source (LPS) and Power Source (PS2) of UL/IEC 62368-1.
- ▶ Only products or parts that meet the requirements for Power Source (PS1) of UL/IEC 62368-1 may be connected to the product's available interfaces (I/O).
- ▶ Before opening the product, make sure that the product is disconnected from the mains.
- ▶ Switching off the product by its power button does not disconnect it from the mains. Complete disconnection is only possible if the power cable is removed from the wall plug or from the product. Ensure that there is free and easy access to enable disconnection.
- ▶ The product may only be opened for the insertion or removal of add-on cards (depending on the configuration of the product). This may only be carried out by qualified operators.
- ▶ If extensions are being carried out, the following must be observed:
 - ▶ all effective legal regulations and all technical data are adhered to
 - ▶ the power consumption of any add-on card does not exceed the specified limitations
 - ▶ the current consumption of the product does not exceed the value stated on the product label
- ▶ Only original accessories that have been approved by Kontron Europe can be used.
- ▶ Please note: safe operation is no longer possible when any of the following applies:
 - ▶ the product has visible damages or
 - ▶ the product is no longer functioning
 In this case the product must be switched off and it must be ensured that the product can no longer be operated.
- ▶ Handling and operation of the product is permitted only for trained personnel within a work place that is access controlled.
- ▶ CAUTION: Risk of explosion if the battery is replaced incorrectly (short-circuited, reverse-poled, wrong battery type). Dispose of used batteries according to the manufacturer's instructions.
- ▶ This product is not suitable for use in locations where children are likely to be present

Additional Safety Instructions for DC Power Supply Circuits

- ▶ To guarantee safe operation, please observe that:
 - ▶ the external DC power supply must meet the criteria for LPS and PS2 (UL/IEC 62368-1)
 - ▶ no cables or parts without insulation in electrical circuits with dangerous voltage or power should be touched directly or indirectly
 - ▶ a reliable protective earthing connection is provided

- ▶ a suitable, easily accessible disconnecting device is used in the application (e.g. overcurrent protective device), if the product itself is not disconnect able
 - ▶ a disconnect device, if provided in or as part of the product, shall disconnect both poles simultaneously
 - ▶ interconnecting power circuits of different products cause no electrical hazards
- ▶ A sufficient dimensioning of the power cable wires must be selected – according to the maximum electrical specifications on the product label – as stipulated by EN62368-1 or VDE0100 or EN60204 or UL61010-1 regulations.



For the General Safety Instruction in German or French, visit [Kontron's product web page> Downloads> Manuals>General Safety Instruction.](#)

2.1. Electrostatic Discharge (ESD) Precautions



A sudden discharge of electrostatic electricity can destroy static-sensitive devices or micro-circuitry.

Proper packaging and grounding techniques are necessary precautions to prevent damage. Always take the following general precautions:

1. Always be properly grounded when touching ESD sensitive product(s).
2. Always handle ESD sensitive product(s) by their casing.
3. Switch off power and input signals before inserting and removing connectors or connecting test equipment.

2.2. Grounding Methods

Proper grounding methods are necessary to avoid damage to the product. Always take the following general precautions:

1. Ensure the product is grounded before powering on the product.
2. Connect the product only to an applied ground that meets all applicable local, national and international grounding requirements.
3. When assembling, the first cable to be connected is the ground and when disassembling, the last cable to be removed is the ground cable.

▲ CAUTION

The installation sites applied ground must meet the ground requirements specified in this user guide and in your local, national and international region.

2.3. Instructions for Lithium Battery

If the product is equipped with a lithium battery. When replacing the battery observe the instructions below.

▲ CAUTION

Caution: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions.



Do not dispose of lithium batteries in general trash collection. Dispose of the battery according to the local regulations dealing with the disposal of these special materials, (e.g. to the collecting points for dispose of batteries).

3/ Scope of Delivery

This chapter describes the components that are delivered.

Please check that your delivery is complete and contains the items below (according to the ordered unit configuration). If you discover damaged or missing items, please contact your dealer.

Table 1: Scope of Delivery FlatClient HYG support-arm variant

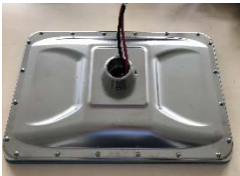

	Qty	Part Number	Part Description
	1	depending on configuration	FlatClient HYG support-arm variant

Table 2: Scope of Delivery FlatClient HYG VESA variant

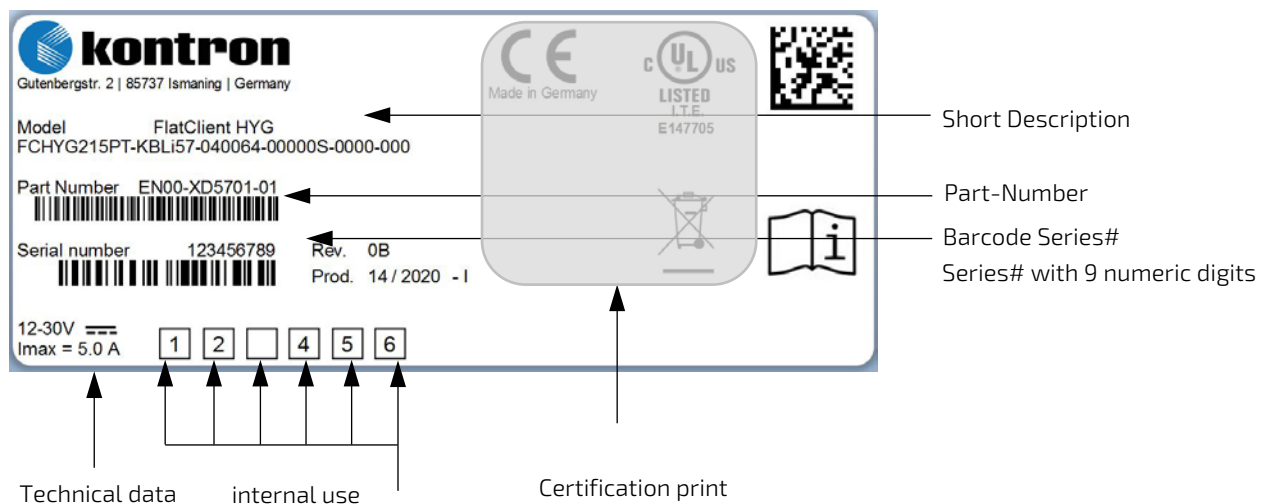
	Qty	Part Number	Part Description
	1	depending on configuration	FlatClient HYG VESA variant

3.1.1. Type Label and Product Identification

Product and package label, size 85 x 35mm, polyester matt silver.

NOTICE Certifications such as UL or FCC can be requested optionally.




Figure 2: Type Label



4/ Accessories

The following components may be ordered for the FlatClient HYG.

Table 3: Accessories

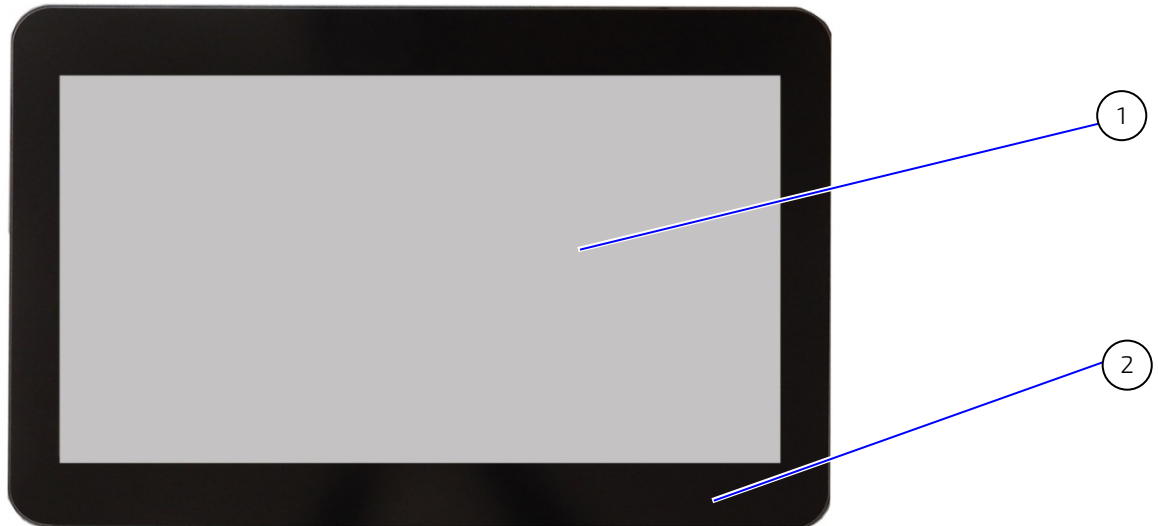
Item	Part	Qty.	Part Number	Part Description
1	Power Supply Kit VESA ^[1]	1	ER40-100010-01	AC/DC Adapter for VESA IP67 Systems (incl. Connector clamp and EU-Powercord and Power connector IP67)
2	Power Supply Kit Support Arm ^[1]	1	ER40-100013-01	AC/DC Adapter for Support arm Systems (incl. Connector clamp and EU-Powercord)
3		1	1070-0104	AC/DC Adapter for VESA IP67 Systems: with M12 power connector with 1,8m cable and AC/DC Adapter (not IP Protected). (EU-Powercord is required).
4		1	ER40-100009-01	AC/DC Adapter (24V/65W)
5		1	1070-9744	Power Cable M12 IP67 protected, Length 2 m
6		1	1069-5050	Power Cable M12 IP67 protected, Length 5 m
7		1	EN05-100009-01	Connector Clap Kit Incl. two 3 pole connector clamps
8		1	1066-7603	Dust CAP USB connector IP67
9		1	1066-7604	Dust CAP Ethernet Connector IP67
10		1	1070-3433	USB Adapter M12 USB-A - USB A
11		1	1066-7601	USB connector Type A IP67, 2 m
12		1	1067-9448	USB Connector Type A IP67, 5m
13		1	1070-3435	USB A double end cable, IP67, 3m
14		1	1066-7661	ETH Connector IP67 incl. 2m cable
15		1	1067-9449	ETH Connector IP67 incl. 5m cable
16		1	840-0059	Powercord EU, 2m, black (CEE7/7-C13)
17		1	840-0115	Powercord UK, 1.8m, black (BS1363A-C13)
18		1	0-0064-4317	Powercord US, 1.8m, black
19		1	1068-6121	Desk stand stainless steel for VESA

^[1] Power Supply Kit VESA and Power Supply Kit Support Arm parts may be purchased separately.

5/ Product Description

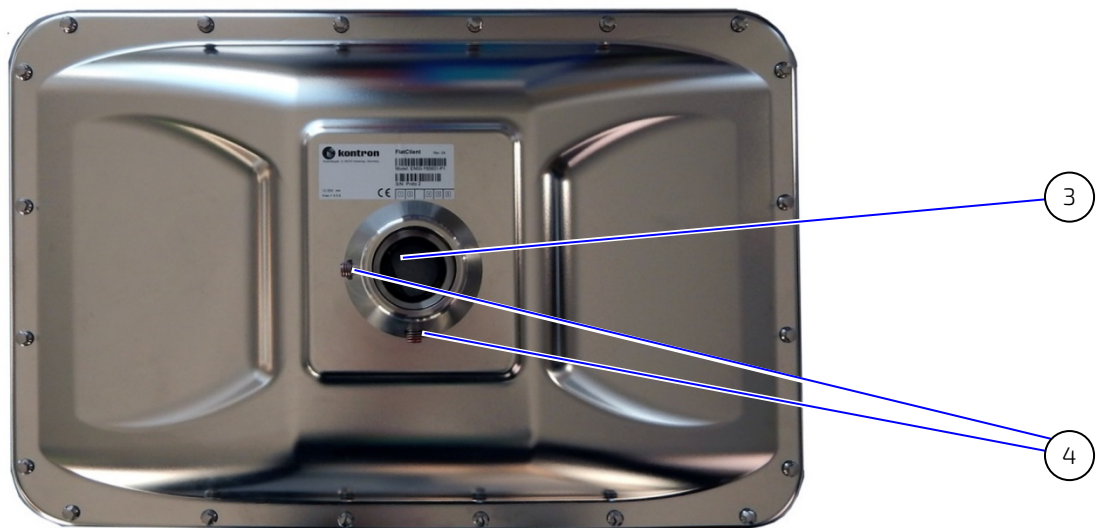
5.1. Product Views

Figure 3: Front View FlatClient HYG



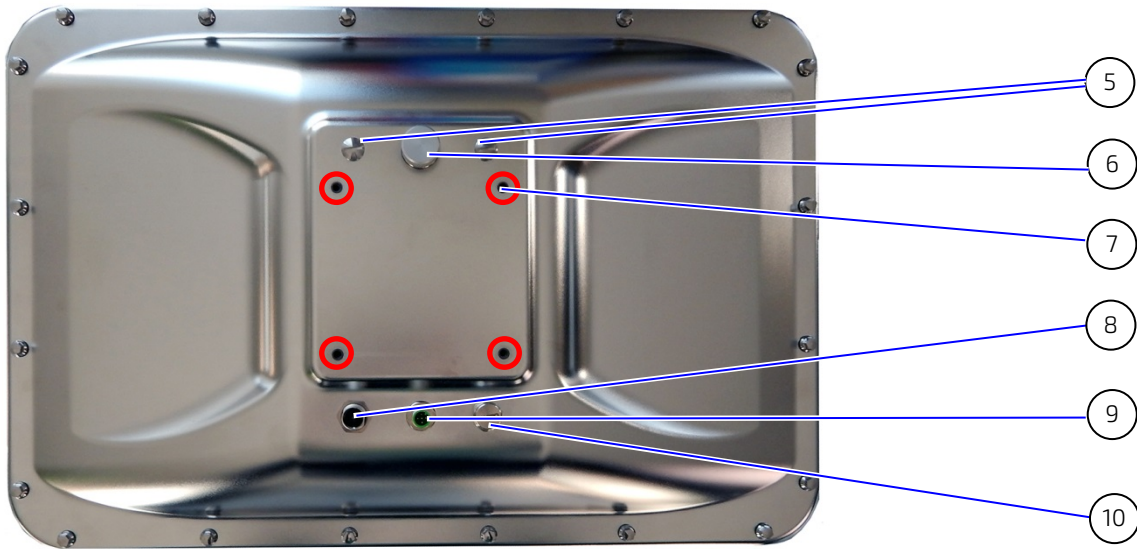
- 1 TFT Display with PCAP touch
- 2 RFID (optional)

Figure 4: Rear View Arm Mount Version



- 3 Mounting arm (Rittal 6664.500)
- 4 2x Support arm bracket fastening screws

Figure 5: Rear View VESA Mount Version



- 5 2x stub for optional connectors
- 6 1x USB
- 7 VESA 100 (red circles, use M4 screws with a maximal penetration 8 mm and typical 1.3 Nm torque)
- 8 1x LAN
- 9 Power Connector
- 10 Vent

5.2. Block Diagrams

Figure 6: FlatClient HYG Arm Version Block Diagram Board

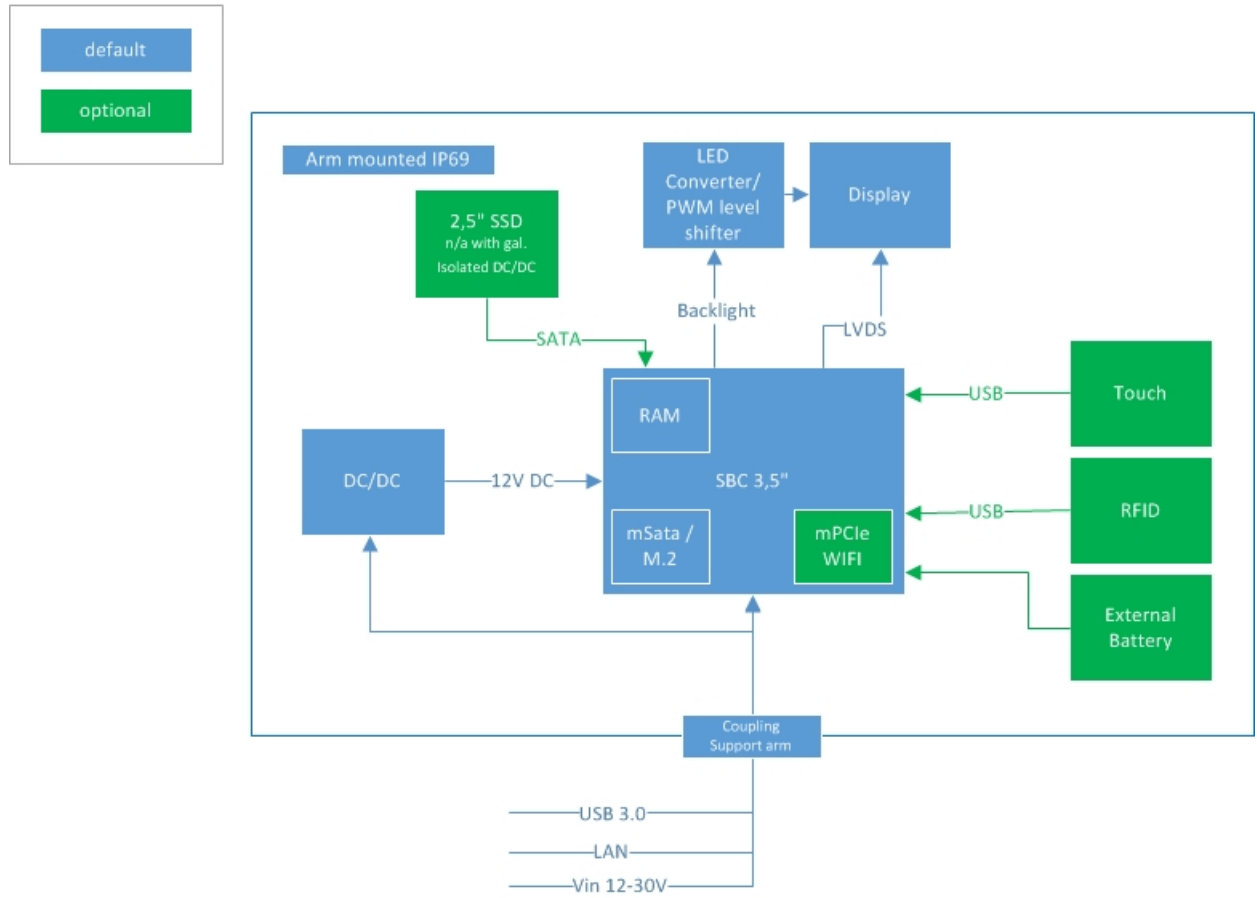
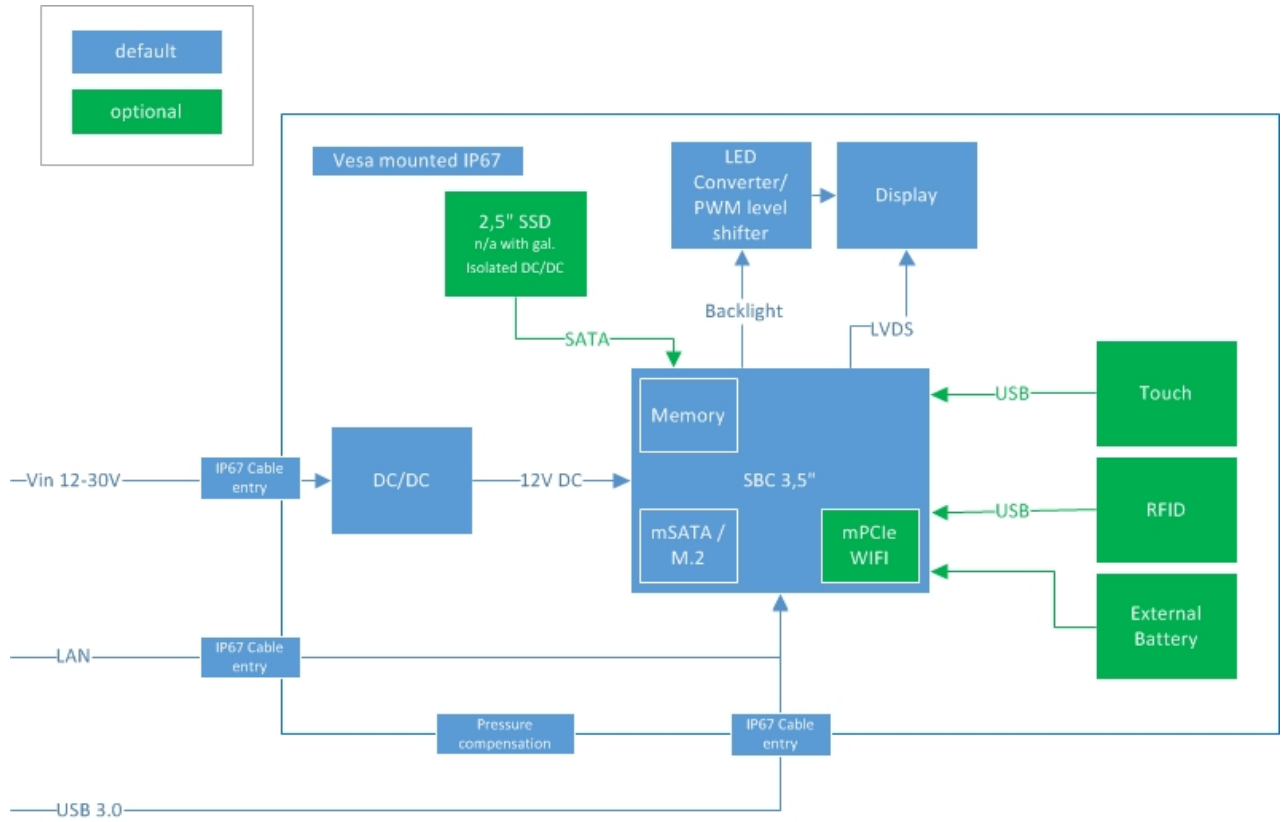


Figure 7: FlatClient HYG VESA Version Block Diagram Board



6/ Technical Data and Environmental Specification

Table 4: Technical Data FlatClient HYG

Display Size	ECO Line	PRO Line
Resolution (pixel)	1920x1080	1920x1080
Format	16:9	16:9
Brightness	300 cd/m ²	300 cd/m ²
LED Lifetime (> 50%, 25°C)	> 50.000 h	> 50.000 h
CPU	Intel® Pentium® Quad Core™ N4200 Intel® Celeron® J3455	Intel® Core™ i5-7300U Intel® Core™ i5-8365U
Memory	up to 4/8 GB DDR3 SO-DIMM	up to 4/8/16 GB DDR4 SO-DIMM
BIOS	AMI uEFI BIOS	AMI uEFI BIOS
Standard Interfaces	1x GbE, 1x USB 3.0	1x GbE, 1x USB 3.0
Hardware Monitor	Temperature, Voltages	Temperature, Voltages
Watchdog	Programmable WDT to generate System reset event	Programmable WDT to generate System reset event
Realtime Clock (RTC)	Processor integrated RTC	Processor integrated RTC
Wireless Interfaces	optional: RFID, WiFi	optional: RFID, WiFi
Power Supply	12-30 VDC or PoE (optional), galvanic isolation (optional)	12-30 VDC or PoE (optional), galvanic isolation (optional)
I _{max}	4.2 A	5 A
Cooling	Passive Cooling with heatsink plate	Passive Cooling with heatsink plate
Operating Temperature	0°C – 50°C ambient	0°C – 50°C ambient
Storage Temperature	-10°C – 60°C ambient	-10°C – 60°C ambient
OS Support	Intel® Pentium® Quad Core™ N4200/ Intel® Celeron® J3455: Windows 10 IoT, Linux	Intel® Core™ i5-7300U, Intel® Core™ i5-8365U: Windows 10 IoT, Linux
Options	other Intel® CPUs/Platforms on request 4 – 8 GB RAM 32 – 512 GB mSATA SSD on request COM (RS232, RS422, RS485) Fieldbus (e.g. CAN, Profibus, ...)	other Intel® CPUs/Platforms on request 4 – 16 GB RAM 32 – 1024 GB mSATA SSD on request COM (RS232, RS422, RS485) Fieldbus (e.g. CAN, Profibus, ...)
Front Options	Protection glass/glass with PCAP/PMMA glass/PMMA with PCAP	

⚠ CAUTION

Only connect the product to an external power supply providing the voltage type (AC or DC) and the input power (max. current) specified on the Kontron Product Label.

The external power supply must meet the requirements of ES1/PS2 according to IEC/UL 62368-1.

Connectez le produit uniquement à une alimentation externe fournissant le type de tension (AC ou DC) et la puissance d'entrée (courant max.) spécifiés sur l'étiquette du produit Kontron. L'alimentation externe doit répondre aux exigences de ES1/PS2 selon IEC/UL 62368-1.

Table 5: Dimensions FlatClient HYG

Display Variant	VESA	Arm mounted
Dimensions (WxHxD in mm)	542 x 366 x 74	542 x 366 x 126
Mounting	VESA 100 with M12 connector	support arm on 48 mm tube
Weight	~ 8.5 kg	~ 9.5 kg

Table 6: Environmental Shock & Vibrations Specifications

Display Variant	VESA	Arm mounted
Shock DIN EN 60068-2-27	Operating Shock: 15 G, 11 ms duration, half-sinus Storage Shock: 30 G, 11 ms duration, half-sinus	Operating Shock: 15 G, 11 ms duration, half-sinus
Vibration DIN EN 60068-2-6	Operating Vibration: 5 – 500 Hz: 1.0 G/3axis Storage Vibration: 5 – 500 Hz: 2.0 G/3axis	Operating Vibration: 5 – 500 Hz: 1.0 G/3axis

Table 7: Environmental Specifications

Operating Altitude	Up to 3000 m (9900 ft)
Storage Altitude	Up to 5000 m (16500 ft)
Humidity	10%-90% @ 39°C, non condensing
Certification	CE, UL with CB-Report
Protection Class	System: Arm mounted IP69K ISO 20653 System VESA mount: IP67 ISO 20653
EMC	EN55032 class B
Low Voltage Directive (Electrical Safety)	2014/35/EU
EMC Directive	2014/30/EU
RoHS II Directives	2011/65/EU
MTBF	> 50000 h
Waste Electrical and Electronic Equipment (WEEE)	2002/19/EC

NOTICE

FlatClient HYG is intended for indoor use only. To avoid product damage do not use in a sheltered outdoor, outdoor or sunlit environment.

Observe that the product is not exposed to direct sunlight (UV radiation):

- Prolonged exposure shortens field life and voids the warranty
- Short exposure may lead to higher temperatures inside the product and cause permanent damage
- Direct exposure accelerates long-term aging

For intend use in an outdoor environment or a sunlit environment, contact your Kontron representative.

7/ Order Information

EN00-yyyyyy-xx

① ② ③ ④ ⑤ ⑥

① Internal Code (Standard FlatClient)

② YY: CPU

Y8 = Intel® Pentium® Quad Core™ N4200/Intel® Celeron® J3455

XD = Intel® Core™ i5-7300U

WD = Intel® Core™ i5-8365U

③ Y: Touch Technology:

3 = with protection glass and stainless steel front

5 = with Touch PCAP and stainless steel front

C = with PMMA and stainless steel front

D = with Touch PCAP PMMA and stainless steel front

④ Y: Mounting Variant:

8 = HYG Monitor M12 Variant

9 = HYG Monitor Swivel Variant

⑤ Options: counted on demand, possible options are:

4/8/16 GB RAM

SSD 32 GB – 64 GB – 128 GB – 256 GB – 512 GB

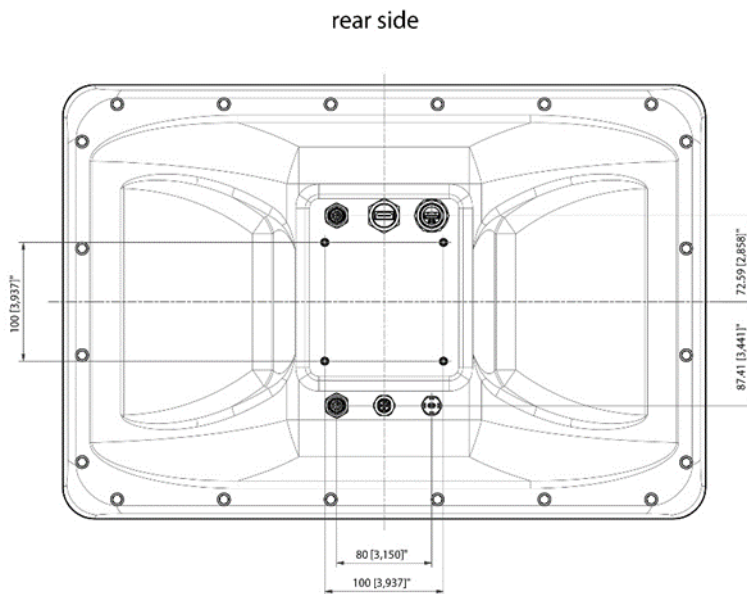
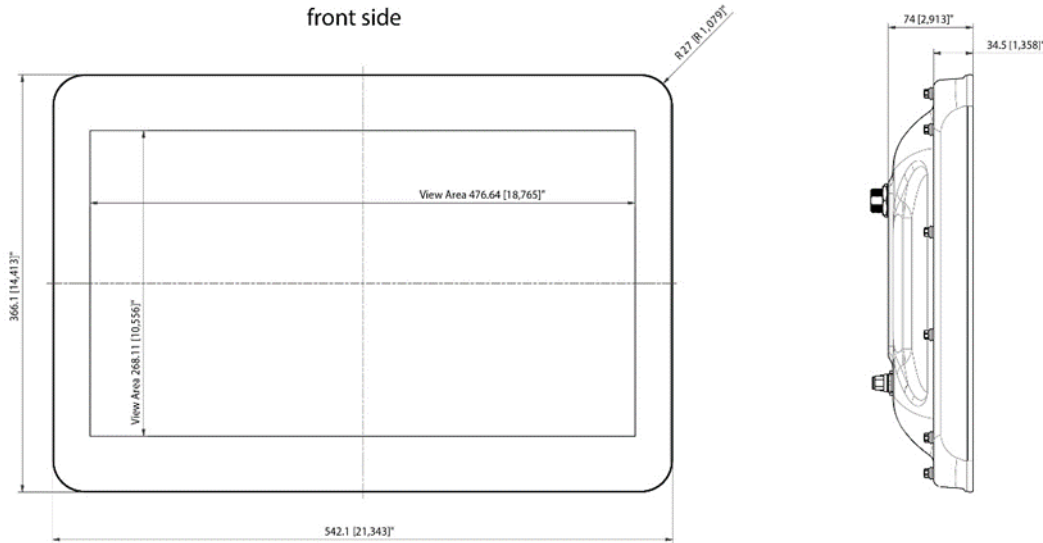
WiFi

RFID

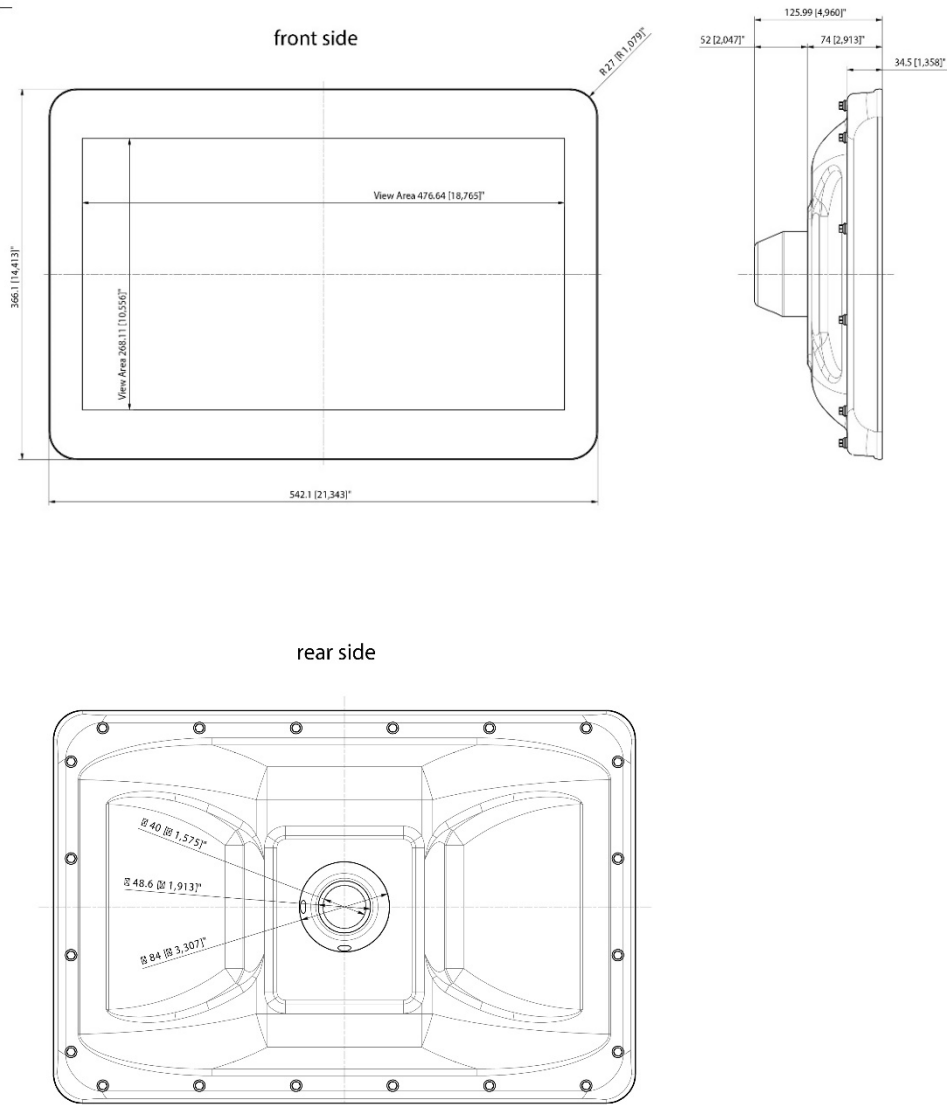
⑥ Internal Code (Revision)

8/ Mechanical Specification

8.1. 21.5" VESA Variant



8.2. 21.5" Arm Mount Variant



9/ Connectors

9.1. External Connectors

9.1.1. External Connectors for Arm Mount Variant

The support arm variant comes with included cables. Number, length and Type depends on the system configuration. Power is always required, LAN and USB in most cases.

9.1.1.1. Power Connector Cable

NOTICE

Standard cable length is 2.75 m.

Table 8: Power Connector Cable with wire end ferrules

Color	Signal Name
Black	GND
White	VIN 24V
Green	functional earth (FE)

9.1.1.2. LAN-Connector

Figure 8: LAN-Connector Cable

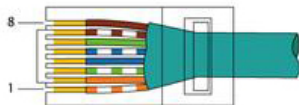


Table 9: LAN-Connector Cable

Pin	Signal Name	Pin	Signal Name
1	MDI0+	5	MDI2+
2	MDI0-	6	MDI2-
3	MDI1+	7	MDI3+
4	MDI1-	8	MDI3-

9.1.2. USB 3.0 Type-A Socket

This socket provides a USB 3.0 connection (downstream). The maximum allowed current per channel is 900 mA. They are connected to CPU board with a cable.

Figure 9: USB 3.0 Type-A Connector

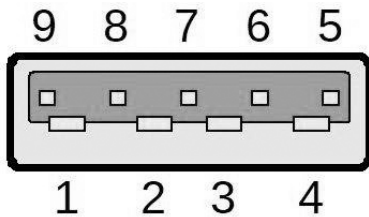


Table 10: Pinout USB 3.0

Pin	Signal Name	Pin	Signal Name
1	+USB_VCC	5	USB_RX-
2	USB_D-	6	USB_RX+
3	USB_D+	7	GND
4	GND	8	USB_TX-
		9	USB_TX+

9.1.3. External Connectors for VESA Mount Variant

9.1.3.1. Power Male Connector M12 A-coded and IP67 Protected

Figure 10: M12 A-coded Power Connector

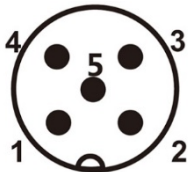


Table 11: Pinout M12 A-coded Power Connector

Pin	Color	Signal Name
1	Brown	24 V
2	White	24 V
3	Blue	GND
4	Black	GND
5	Grey	Functional Earth (FE)
shield	-	Functional Earth (FE)

All wires must be connected.



To ensure IP67 protection, screw the mating connector firmly to the M12 A coded (male) power connector.

9.1.3.2. USB 3.0 Connector IP67 Protected

This connector is IP67 protected and provides a USB 3.0 connection (downstream). The maximum allowed current per channel is 900 mA. They are connected to CPU board with a cable.

Figure 11: USB 3.0 Connector IP67 Protected

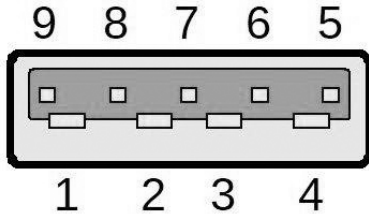


Table 12: USB 3.0 Connector IP67 Protected

Pin	Signal Name
1	+5 V USB-A output (900 mA max.)
2	USB-A D-
3	USB-A D+
4	Ground
5	USB-A Rx-
6	USB-A Rx+
7	GND_Drain
8	USB-A Tx-
9	USB-A Tx+

The shield is connected to the cage

9.1.3.3. M12 X-Coded LAN-Connector IP67 Protected

This female M12 X-coded Ethernet connector is IP67 protected and provides Gigabit Ethernet connection.

Figure 12: M12 X-coded LAN Connector

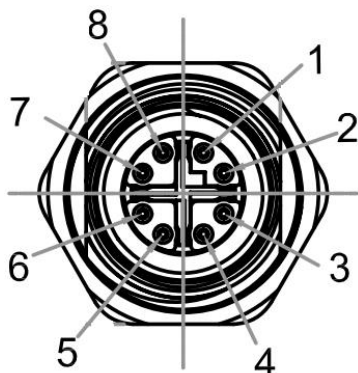


Table 13: M12 X-coded LAN Connector

Pin	Signal Name	Pin	Signal Name
1	MDI0+	5	MDI3+
2	MDI0-	6	MDI3-
3	MDI1+	7	MDI2+
4	MDI2-	8	MDI1-

9.2. RFID (Optional)

Figure 13: Screen with optional RFID function



The RFID reader is recognized and addressed as a Communication Device Class (CDC).

This class allows the use of a virtual COM-port and most operating systems (Windows, Linux, etc.) provide default drivers for this class.

Because the CDC interface is a virtual COM-port (as opposed to a physical COM-port), the baud rate setting is irrelevant.

The following settings should be used for the virtual COM-port:

- ▶ 8N1 coding (8) data bits, (N) no parity bit, and (1) one stop bit
- ▶ no handshaking

To read the RFID Tag the ASCII command is:

```
050010
```

followed by carriage return that must be send via a terminal program.

10/ Installation and Start

⚠ CAUTION

Do Not Mount Alone

Due to the weight of the FlatClient HYG, mounting alone may result in product damage or personal injury.

NOTICE

FlatClient HYG should be mounted in the vertical position $\pm 25^\circ$. Keep a clear distance all around the device of 50 mm. Make sure sufficient ventilation is provided and no other devices heat up the FlatClient HYG.

NOTICE

FlatClient HYG is intended for indoor use only. To avoid product damage do not use in a sheltered outdoor, outdoor or sunlit environment.

Observe that the product is not exposed to direct sunlight (UV radiation):

- Prolonged exposure shortens field life and voids the warranty
- Short exposure may lead to higher temperatures inside the product and cause permanent damage
- Direct exposure accelerates long-term aging

For intend use in an outdoor environment or a sunlit environment, contact your Kontron representative.

NOTICE

Handle with care to avoid damage to the front display screen.

10.1. Support Arm Mounting

The FlatClient HYG's support arm bracket is compatible with the Rittal 6664.5000 48 mm tube. When mounting only use a support arm fixture compatible with the Rittal 6664.5000 48 mm tube.

To mount, slide the support arm fixture into the support arm bracket and fasten using the two screws located on the support arm bracket, see Figure 4, pos. 4.

NOTICE

Only mount using a corresponding support arm fixtures for the Rittal 6664.5000 with 48 mm tube. Securely fasten the two support arm bracket screws.

10.2. VESA Mounting

The FlatClient HYG's four threaded holes are compatible with the VESA 100 pattern. When selecting a VESA mounting bracket ensure that the mounting bracket supports the VESA 100.

To mount, always use four M4 screws that are long enough to secure the FlatClient HYG. The required screw length depends on the thickness of the VESA bracket used and may not require a free thread length of more than 8 mm.

NOTICE

Mount using all four threaded holes with screws long enough to secure the FlatClient HYG.

10.3. Startup Procedure

The FlatClient HYG is supplied with the ordered power solution and starts automatically when connected to power. When connecting to power only use the power solution supplied by Kontron and observe the General Safety Instructions within this user guide and the instructions within this chapter.

▲ CAUTION

Do not switch on or handle the product if there is any visible damage.

▲ CAUTION

Only connect the product to an external power supply providing the voltage type (AC or DC) and the input power (max. current) specified on the Kontron Product Label.

The external power supply must meet the requirements of ES1/PS2 according to IEC/UL 62368-1.

Connectez le produit uniquement à une alimentation externe fournissant le type de tension (AC ou DC) et la puissance d'entrée (courant max.) spécifiés sur l'étiquette du produit Kontron. L'alimentation externe doit répondre aux exigences de ES1/PS2 selon IEC/UL 62368-1.

▲ CAUTION

Ensure that the power supply and power cables/wires have no visible damage.

NOTICE

Support the power and I/O cables to minimize the strain on the connectors.

NOTICE

The last cable to be connected must always be the power cable.



All essential drivers are available in Kontron Customer section, visit [Customer Section | Kontron Europe and Asia](#).



Observe and comply with the product's electrical specification, on the Type Label.

10.3.1. Starting up FlatClient HYG VESA

To FlatClient HYG is supplied with either the Power Supply VESA kit containing a M12 power cable and two cable clamps to connect to a 24 VDC power supply, or an AC/DC power supply with installed M12 IP67 power connector to connect directly to a mains power outlet

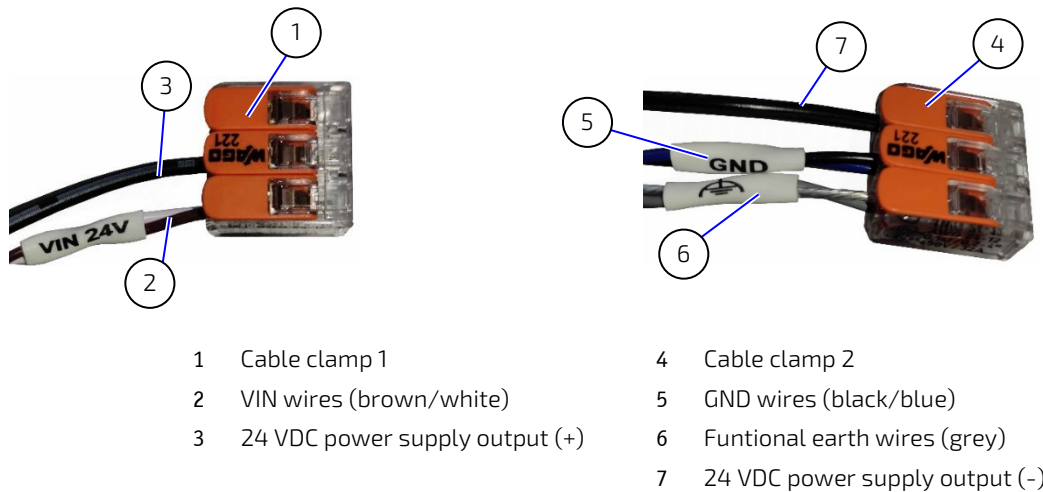
10.3.1.1. FlatClient HYG VESA with Power Supply Kit VESA

To connect the FlatClient HYG VESA to power using the Power Supply Kit VESA (see Table 3: Accessories, item 1), perform the following:

1. Connect the supplied M12 power cable to the FlatClient HYG power connector (Figure 5, pos. 9). The M12 power cable wires are color-coded and labeled VIN 24 V (brown/white), ground (black/blue) and functional earth (grey).
2. Insert and firmly secure the VIN wire in one of the supplied cable clamps (Figure 14, pos. 2).

3. Insert and firmly secure the GND and functional earth wires into the second supplied cable clamp (Figure 14, pos. 5 and 6).
4. Connect to the power supply by inserting the 24 VDC power supply's (+/-) output wires into the corresponding cable clamps:
 - a. Insert the 24 VDC (+) output into the cable clamp with the VIN wire (Figure 14, pos. 3).
 - b. Insert the 24 VDC (-) output into the cable clamp with the GND and functional earth wires (Figure 14, pos. 7).

Figure 14: Wired Cable Clamps



5. When connected to power, the FlatClient HYG starts automatically.

⚠ CAUTION

Ensure that the VIN 24V, Ground and Functional Earth wires are connected to the corresponding power supply's (+/-) outputs.

10.3.1.2. FlatClient HYG VESA with AC/DC Power Supply

To connect the FlatClient HYG VESA to power using the supplied AC/DC power supply with installed M12 IP67 power connector (see Table 3: Accessories, item 3), perform the following:

1. Attach the AC/DC power supply's power cable with 5-pin M12 A coded power connector to the power connector on the rear side of the FlatClient HYG (Figure 5, pos. 9) and screwing firmly.
2. Connect the AC/DC power supply's cable to the mains power supply outlet, using the supplied power cord for your region.
3. When connected to power, the FlatClient HYG starts automatically.

⚠ CAUTION

Only connect the product to an external power supply providing the voltage type (AC or DC) and the input power (max. current) specified on the Kontron Product Label.

The external power supply must meet the requirements of ES1/PS2 according to IEC/UL 62368-1.

Connectez le produit uniquement à une alimentation externe fournissant le type de tension (AC ou DC) et la puissance d'entrée (courant max.) spécifiés sur l'étiquette du produit Kontron. L'alimentation externe doit répondre aux exigences de ES1/PS2 selon IEC/UL 62368-1.

10.3.2. Starting up FlatClient HYG Support Arm

To connect the FlatClient HYG Support Arm to power using the Power Supply Kit Support Arm (see Table 3: Accessories, item 2), perform the following:

1. Identify the power cable fed out of the FlatClient HYG support arm bracket. The power cable wires are color-coded VIN 24 V (white), ground (black) and functional earth (green).
2. Insert and firmly secure the VIN wire into a cable clamp.
3. Insert and firmly secure the GND and functional earth wires into the second cable clamp.
4. Connect to the power supply's power cable by inserting the power supply's (+/-) output wires into the corresponding cable clamps:
 - a. 24 VDC (+) output to the cable clamp with the VIN wire.
 - b. 24 VDC (-) output to the cable clamp with the GND and functional earth wires.
5. When connected to power, the FlatClient HYG starts automatically.

CAUTION

Ensure that the VIN 24V (white), Ground (black) and Functional earth (green) wires are connected to the corresponding power supply's (+/-) outputs.

11/Technical Support

For technical support, please contact Kontron <http://www.kontron.com/support>

To request support via e-mail, report documentation errors, or general customer feedback, use Kontron's Contact Support form by visiting:

<http://www.kontron.com/about-kontron/company-overview/contact-us/forms/contact-support>.

In case the request form does not work or you do not get a response within 48 hours, follow up with support@kontron.com

Make sure you have the following product identification information on hand when you call:

- ▶ Product name,
- ▶ Product Model number
- ▶ Serial number (SN) of the unit



The serial number can be found on the type label, placed on the rear side of the system.

Be ready to explain the nature of your problem to the service technician.

11.1. Warranty

Due to their limited service life, parts which by their nature are subject to a particularly high degree of wear (wearing parts) are excluded from the warranty beyond that provided by law. This applies to the CMOS battery, for example.



There is a protection label on your FlatClient Monitor.
If the product is opened, the warranty is lost!

11.2. Returning Defective Merchandise

All equipment returned to Kontron must have a Return Material Authorization (RMA) number assigned exclusively by Kontron. Kontron cannot be held responsible for any loss or damage caused to the equipment received without an RMA number. The Buyer accepts responsibility for all freight charges for the return of goods to Kontron's designated facility. Kontron will pay return freight charges back to the Buyer's location in the event that the equipment is repaired or replaced within the warranty period stipulated herewith.

Please follow these steps before returning any product to Kontron.



Visit the RMA Information website:

<http://www.kontron.com/support-and-services/support/rma-information>

Download the RMA Request sheet for Kontron Europe GmbH - Augsburg and fill out the form. Take care to include a short detailed description of the observed problem or failure and to include the product identification (product name, material number and serial-number). If more than one product is sent in a delivery. Fill out the above information in the RMA Request form for each product.

1. Send the completed RMA-sheet to the given fax- or email-address at Kontron Europe GmbH. Kontron Europe GmbH will provide an RMA-Number within one business day.
2. The goods for repair shall be packed properly for shipping, considering shock- and ESD-protection.



Goods returned to Kontron Europe GmbH in non proper packaging will be considered as customer caused faults and cannot be accepted as warranty repairs.

3. Add the RMA-sheet to the relevant delivery address and include the RMA-No into shipping paperwork. Sent the product to the following delivery address:

Kontron Europe GmbH
 RMA Support
 Lise-Meitner-Str. 3-5
 86156 Augsburg
 Germany

Phone: +49 (0) 821 4086-0
 Fax: +49 (0) 821 4086 111
 Email: service@kontron.com

4. After Kontron Europe GmbH receives the product, a confirmation of the order is sent via email to the address named on the RMA sheet. This order number is your RMA number.

List of Acronyms

Table 14: List of Acronyms

AC	Alternating Current
ASCII	American Standard Code for Information Interchange
CE	Conformité Européenne
CPU	Central Processing Unit
DC	Direct Current
EMC	ElectroMagnetic ompatibility
ESD	ElectroStatic Discharge
ESD	ElectroStatic Device
ETC	Embedded Computing Technology
FCC	Federal Communications Commission
FE	Funtional Earth
GbE	Giga Bit Ethernet
GPU	Graphics Processing Unit
IOT	Internet of Things
LAN	Local Area Network
LED	Light Emitting Diode
LPS	Limited Power Source
LVD	Low Voltage Device
MDI	Media Dependent Interface
PCAP	Protective Capacitive Touch
PCIe	Peripheral Component Interconnect-Express
PMMA	Poly(methyl methacrylate)
PoE	Power over Ethernet
PS	Power Source
RAM	Random Access Memory
RFID	Radio Frequency Identification
RMA	Return Material Authorization
RoHS	Restriction of Hazardous Substances
RTC	Real Time Clock
SATA	Serial Advanced Technology Attachment
SSD	Solid-State Drive
TFT	Thin Film Transistor
UEFI	Unified Extensible Firmware Interface
USB	Universal Serial Bus
UV	Ultra Violet
VESA	Video Electronics Standards Association
WDT	Watch Dog Timer
WEEE	Waste Electrical and Electronic Equipment



About Kontron

Kontron is a global leader in embedded computing technology (ECT). Kontron offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall.

For more information, please visit: <http://www.kontron.com/>



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