IDESCO

User Manual

Access Touch 4.0

Version	Date	Author	Description
1.00	21.9.2015	Hal	First version
1.01	15.12.2015	Hal	Added connector 2
1.02	28.9.2016	Hal	Added ferrites installation +other minor changes
1.03	19.06.2023	Tpa	Minor changes

1. Purpose of this user manual

The purpose of this manual is to give information about Access Touch 4.0 screen terminal and help installing it.

2. Other available documents

Please also see following documents for more information:

-Access Touch 4.0 Protocol Description

- Description of communication between on board microcontroller and Computer on Module

- Sensors (temperature sensor, external voltage, I/O-state..), LED control etc also described in this document

-Access Touch 4.0 Open Embedded Build System

-Access Touch 4.0 Embedded Linux OS Description

3. Description of Access Touch 4.0

Access Touch 4.0 is a touch screen terminal that:

- Enables you to manage a wireless identification system.
- Can be used as an independent control unit.

Access Touch 4.0 consists of an integrated computer module and an RFID reader. It can be used for management of a wireless system or as an independent unit, for e.g. time and attendance, payment applications, alarm control, as an info screen etc.

Access Touch 4.0 operates on Embedded Linux or Windows EC8 operating system. Access Touch 4.0 includes a fully operating integrated computer on module with great performance offering a variety of options for different types of customised solutions.

Access Touch 4.0 has an integrated RFID reader unit, available with a variety of RFID technologies working on 125 kHz and 13.56 MHz frequencies.

The front panel is fully customisable to your needs. The device consists primarily of a screen module with embedded electronics and a back plate for installation.

Contact Idesco for special needs. E.g., display vertical orientation.

4. Package content

- Access Touch 4.0 including

  RFID reader unit, one of following:

  1. **7C 2.0:**
     MIFARE® DESFire: UID, MIFARE® Classic: UID, MIFARE® Ultralight UID, MIFARE® Plus UID, MIFARE® SmartMX (MIFARE® Classic emulation mode) UID, NFC (UID), Mifare Classic 7 Byte UID

  2. **8CD 2.0:**
     MIFARE® DESFire: UID + Application files , MIFARE® Classic: UID + Sectors, MIFARE® Ultralight UID + pages, MIFARE® Plus UID security levels 1 and 3, MIFARE® SmartMX (MIFARE® Classic emulation mode), NFC (UID), Mifare Classic 7 Byte UID + sectors.

  3. **7AH:**
     UID-number of Sokymat Unique, EM 4102, HID Proximity 26, 34, 35, 37 and 40 bits

  4. **IR6090B2:**
     Supporting Idesco Microlog technology

  5. Other RFID reader modules available optionally

- Two ferrites to be installed on Ethernet-cable.
- Other optional equipment depending on specific order requirements:
  1. WLAN USB module
 2. Additional SSD memory

5. Notes

- Handle the unit, especially the front cover, with care.
- Handle the electronics with care to avoid any electrostatic discharges.
- Use a soft towel when cleaning the front panel.
- It is recommended to deploy a power back up (UPS) for power interruptions.

6. Installation

NOTE! Power must be turned off when making connections!

6.1. Installation, mechanics

6.1.1. Exploded view
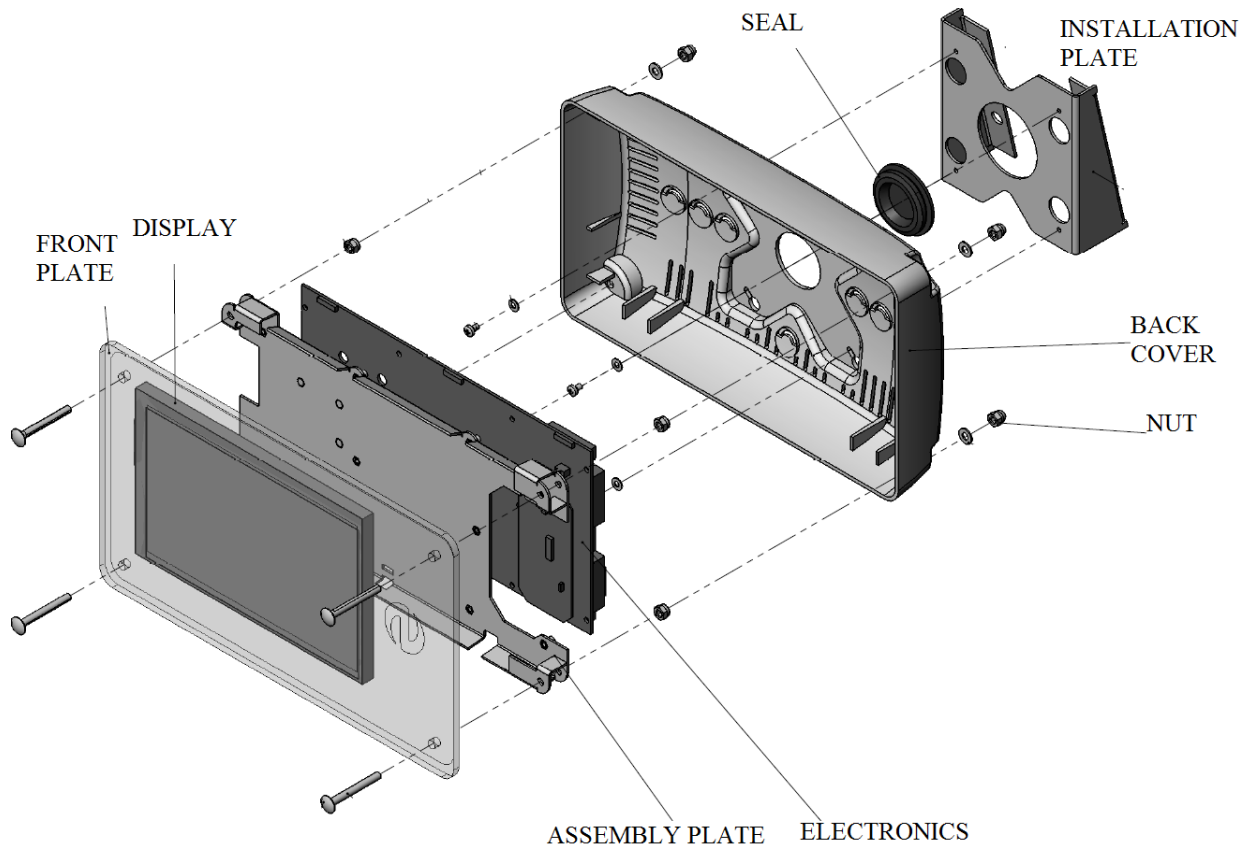
Picture 1 Exploded view

6.1.2.   Installation plate

Attach installation plate to wall/desk using four screws. See Picture 2. Optionally installation plate can be installed on VESA-connector.
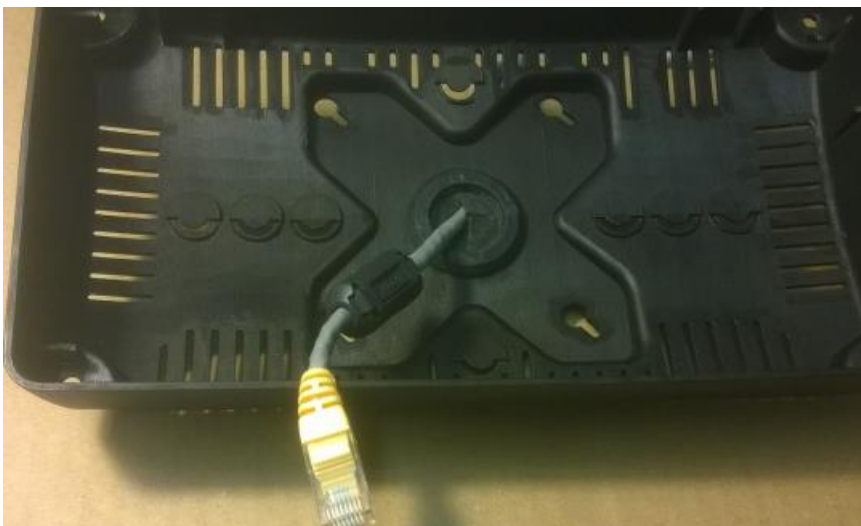
Install four M3x12 screws loosely to installation plate (Picture 2).

Picture 2 Installation plate

6.1.3.   Back cover

Install one ferrite (included with the device) on the Ethernet cable as in Picture 3.

Picture 3 Ferrite installation

Install larger ferrite (included with the device) on the Ethernet cable as in Picture 4. It should be left outside of the housing. Make sure the cable goes through the ferrite twice.

Picture 4 Second ferrite installation

Install the back cover to the installation plate by hanging it on the loosely installed screws. See Picture 5. Tighten the screws. Feed all necessary wires through seal on the back cover.
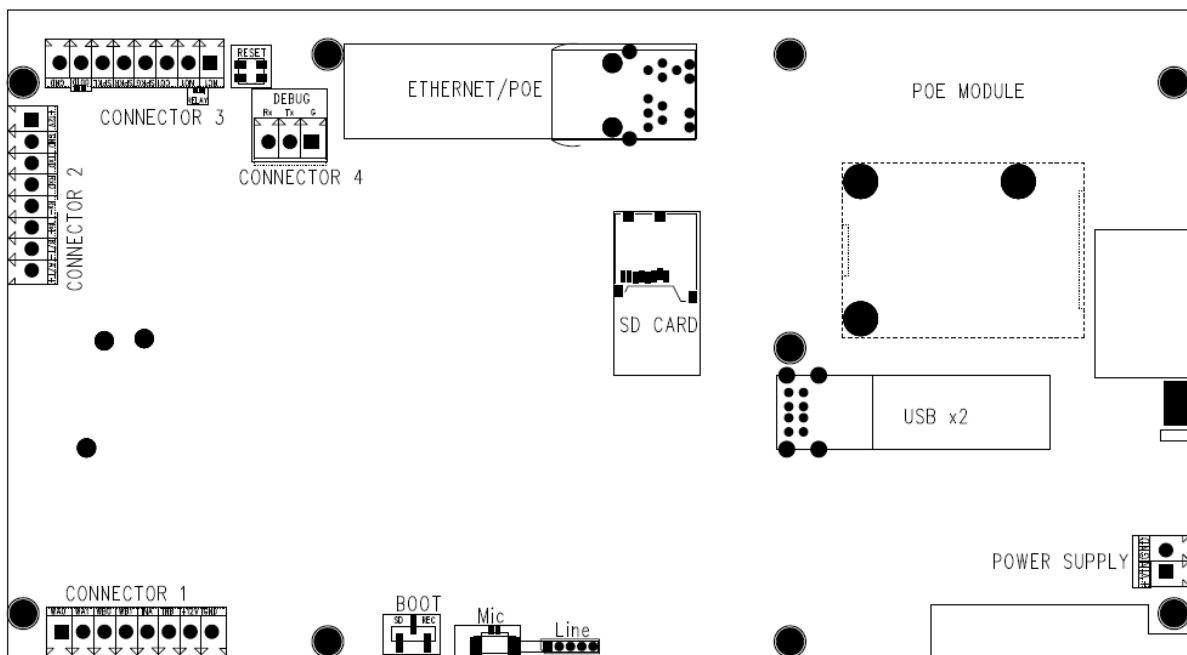

Picture 5 Back cover installation

6.2. Installation, electronics

Connect all necessary wires to the Access Touch 4.0 PCB (e.g +Vin, GND, Relay control...)

Use Picture 6 to locate different connectors. Each connector's functions are described separately in the following chapters.

Picture 6 Connections

6.2.1. Power supply
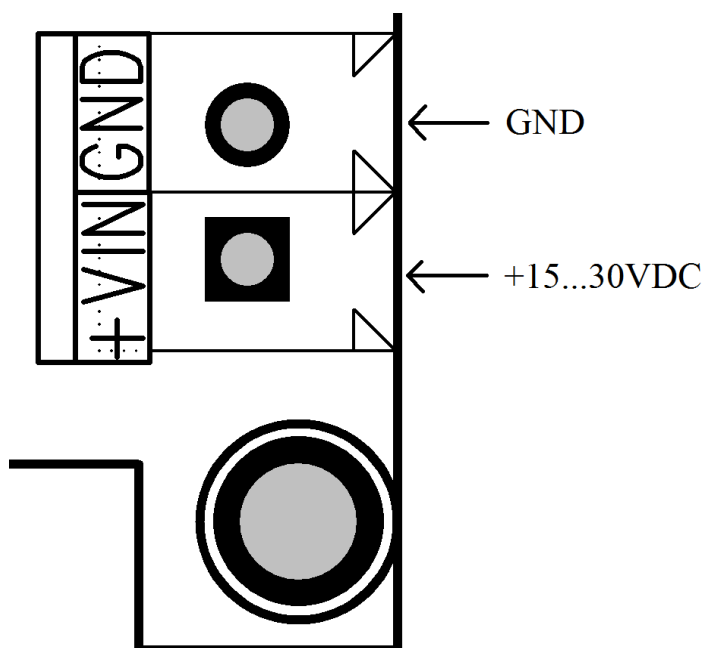
Input voltage: 15…30 VDC

Power requirements / average current consumptions:

500 mA @ 15 VDC, (max 650mA)

350 mA @ 24 VDC, (max 400mA)

Choose a power supply that meets the above power requirements.

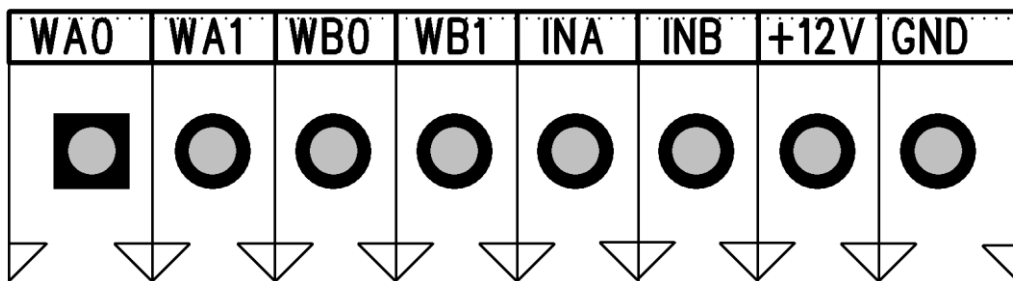Connect wires to power supply connector. See Picture 7.

Picture 7 Power connection

6.2.2. Connector 1

Connector 1 is for external RFID-reader connection and includes following signals:

-WA0, wiegand port A signal 0
-WA1, wiegand port A signal 1
-WB0, wiegand port B signal 0
-WB1, wiegand port B signal 1
-INA, input port A
-INB, input port B
-+12V
-GND

Picture 8 Connector 1

Data from Wiegand hubs is routed through the Access Touch 4.0 application controller. Consult the separate Access Touch 4.0 Protocol Description for Wiegand output / input controls.

Port data is read through the /dev/ttyS0 port in Embedded Linux operating system. Consult the Access Touch 4.0 Embedded Linux OS Description for further information.

Win EC8 default port settings: COM3 is connected to carrier board embedded software and baud rate is 9600 by default.

6.2.3.   Connector 2

Connector 2 includes following signals:

-+12V
-GND
-TXD, RS232
-RXD, RS232
-RX-, RS422
-RX+, RS422
-B/T-, RS422/RS485
-A/T+, RS422/RS485
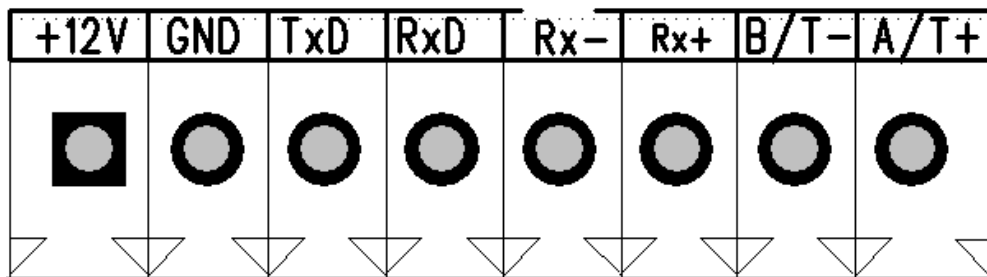
Picture 9 Connector 2

Communication signals are connected to Computer on Module.

6.2.4.   Connector 3

Connector 3 includes following signals:

-NC1, relay normally connected 1
-NO1, relay normally open 1
-CO1, relay change over 1
-SPKG, speaker ground
-SPKR, speaker right
-SPKL, speaker left
-OUTD, FET output port D (see Picture 11 for circuit diagram)
-GND

An output command can be sent to the application controller to drive the relay and FET output.

See Access Touch 4.0 Protocol Description for control commands.

![Connector 3 with terminals NC1 NO1 CO1 SPKG SPKR SPKL OUTD GND](figure)
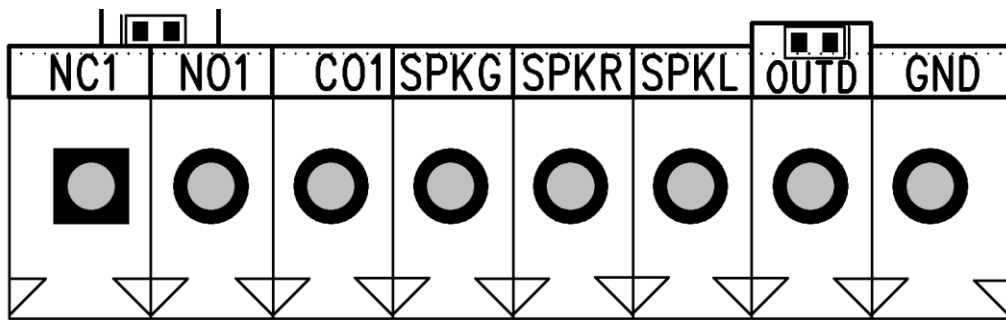
Picture 10 Connector 3

Picture 11 OUT_D circuit

R&D
Access Touch 4.0 – User Manual
Version 1.03
Public

IDESCO

14 (18)
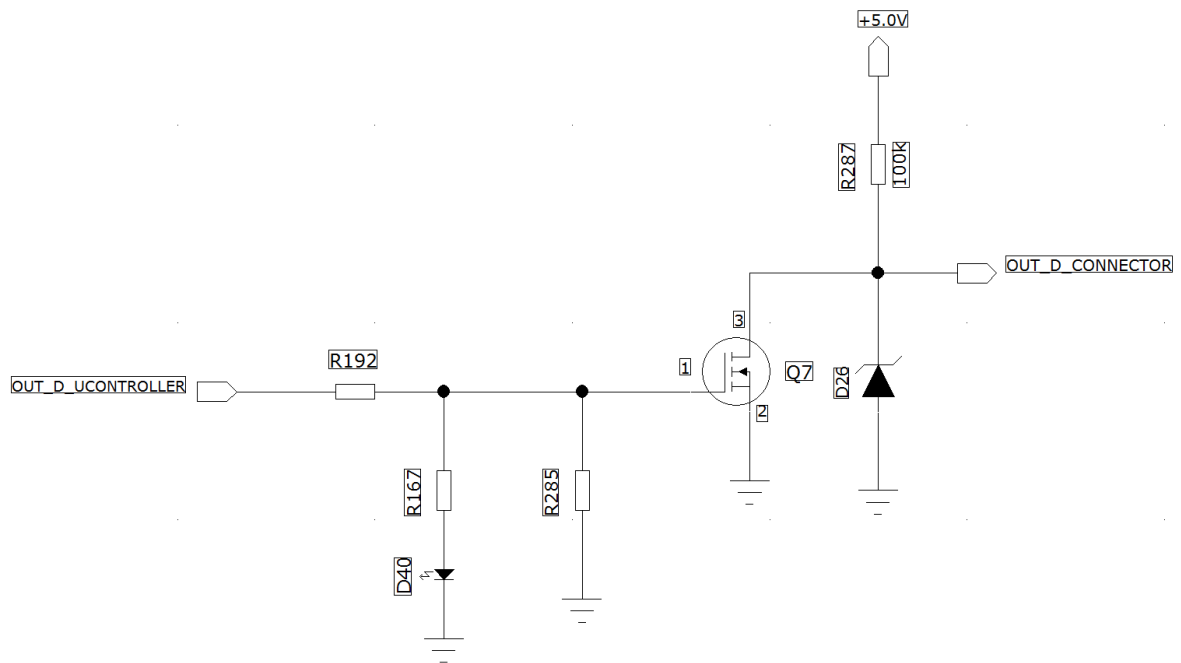
6.2.5. Connector 4

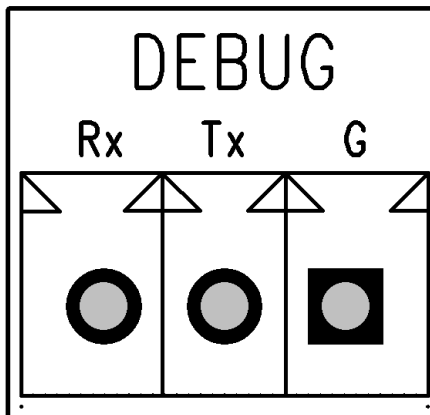This connector is for debugging the Computer on Module. It has serial line signals with RS232 voltage levels. It has following signals:

-RX, receive data
-TX, send data
-G, ground

Picture 12 Debug connector

See document Access Touch 4.0 Open Embedded Build System for entering Access Touch debug interface.

6.2.6. Ethernet Connection

Access Touch 4.0 is equipped with one Ethernet connection. This device supports the 10 / 100 Mbit Ethernet protocol.

6.2.7. PoE

PoE (Power over Ethernet) of this device is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af standard.

6.2.7.1. Input/Power sourcing

This device's PoE input is compatible with equipment that uses different power options, see Picture 13: System Diagram. However, to fully power all functions of this device it is recommended to provide IEEE 802.3af compliant power to input.

See Access Touch 4.0 Protocol Description for backlight LED commands.

It is specified that the PSE does not apply power to both outputs at the same time (Refer to IEEE802.3af for more information).

R&D
Access Touch 4.0 – User Manual
Version 1.03
Public

IDESCO

15 (18)
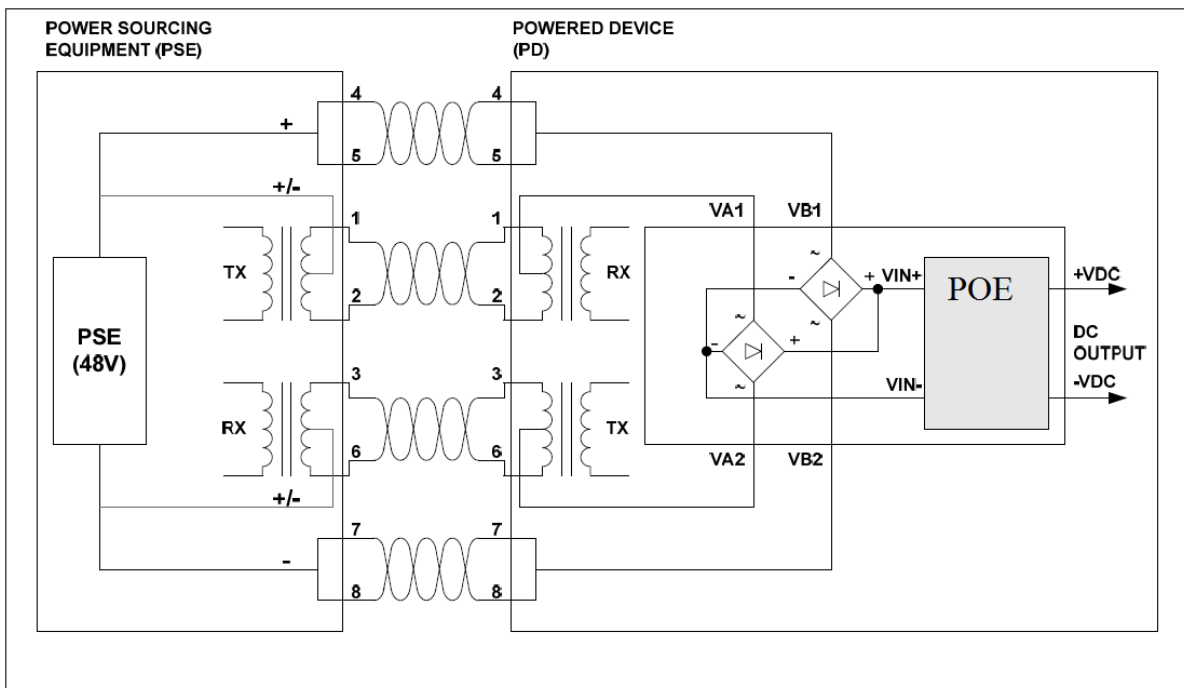
Picture 13 System diagram

6.2.7.2. PD Signature

When the device is connected to the Cat 5e cable, it will automatically present a Powered Device (PD) signature to the Power Sourcing Equipment (PSE) or Midspan Equipment, when requested. This device provides a Class 0 signature. The equipment will then recognize that a powered device is connected to that line and supply power.

6.2.7.3. Isolation

To meet the safety isolation requirements of IEEE802.3af section 33.4.1 a Powered Device (PD) must pass the electrical strength test of IEC 60950 sub clause 6.2. This calls for either a) 1500Vac test or b) 1500V impulse test. This device is specified to meet the 1500Vdc impulse test.

NOTE! For safety reasons, don't install any cables on top of POE-module!

6.2.7.4. Power Classification

This device is fixed for Class 0 (0.44 Watts to 12.95 Watts) operation.

6.2.8. SD card connector

Access Touch 4.0 has on SD card connector. Card type is micro-SD. It can be used to read and write data from Computer on Module.

See document Access Touch 4.0 Open Embedded Build System for booting OS from micro-SD card or for updating Computer on Module from micro-SD card.

6.2.9.   USB Ports

Access Touch 4.0 has two USB ports for external USB device connections. These ports are fully compliant with the USB 2.0 Specification.

See picture 6 to locate the USB connectors.

6.2.10.   Reset button

Access Touch 4.0 has one reset button. It can be used for power-off. Device will automatically then restart. Before you do that, make sure the device is not performing any read/write operations.

This isn't a preferable way to turn power off.

6.2.11.   Boot

To boot from SD-card, use Debug-connector and command prompt. See Access Touch 4.0 Protocol Description for more information.

6.2.12.   Mic

Microphone can be connected via the MIC connection. Contact Idesco for more information.

6.2.13.   Line

This connector is for audio input. Contact Idesco for more information.

6.3.   Mounting

After all connections have been completed, mount electronics and front plate on the back cover. Use four nuts in the corners. See picture 1.

6.4.   Booting

After all mechanical and electronic installations have been completed switch the power supply on. The computer will automatically initiate its boot routine.

Note that the power-up routine may differ depending upon whatever features may have been configured in the device. The device will initiate booting of the installed operating system if no such configurations have been made.

After the power-up routine completes your Access Touch 4.0 is ready for use.
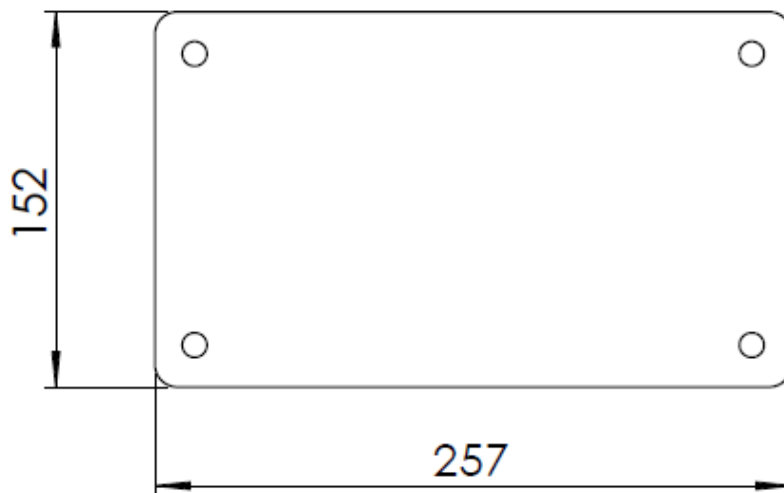
7. System shutdown

Do not suddenly remove power from the device!

On Linux device use shell command "halt." After halt procedure is finished (screen is black and device is not drawing any current) you can unplug your power source from the device.
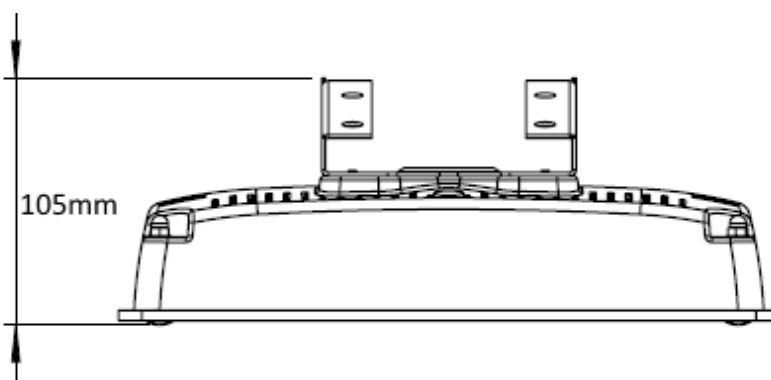
On Windows device select shutdown from Start menu.

8. Dimensions

8.1. Front panel measures

Picture 14 Front panel

8.2. Side measures

Picture 15 Side measures

9. Technical data

Operating frequency for RFID	300 KHz (Microlog) or 13.56 MHz.
Power supply	15 … 30 VDC Internal back- up capacitors for short power breaks and safe power down
Current consumption	500 mA @ 15 VDC, (max 880mA) 350 mA @ 24 VDC, (max 550mA)
CPU	Freescale® Vybrid™ ARM Cortex™-A5, Cortex™-M4
Memory	Integrated on- board flash drive 512MB NAND (8 Bit) Memory RAM 256MB DDR3 (16 Bit) Optional SSD memory can be used for data storage
Display and Touch Panel	7'' display and capacitive touch panel *Vertical orientation on request!*
Dimensions	257 x 152 x 96 mm
Material of housing	Plastic with glass front plate
Installation method	Screws with separate installation plate or with VESA connector
Protection class	IP20
Operational temperature range	-0 … +45 °C
Storage temperature range	-10 … +50 °C
Interfaces	2 x USB 2.0, 2 x Wiegand, Ethernet 10/100 Mbit LAN, RS232 Optional additionally: 1 x RS485
Inputs	2 general purpose inputs
Outputs	One software controlled output (open collector) One software controlled relay Optional: Two additional software controlled outputs
Standards used for CE conformity	• Safety　　　　　　　EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+ A2:2013 • Telecom　　　　　　EN 302291-1 V1.1.1 　　　　　　　　　　　EN 302291-2 V1.1.1 • EMC　　　　　　　　EN 301489-1 V1.9.2 　　　　　　　　　　　EN 301489-3 V1.6.1 • RoHS　　　　　　　　EN 50581:2012 The product herewith complies with the requirements of the EMC Directive 2014/30/EU, the Low Voltage Directive 2014/35/EU, the RoHS Directive 2011/65/EU, the RED Directive 2014/53/EU and carries the CE marking accordingly. Product has been developed and manufactured according to ISO9001standard.
LED (for the RFID reader)	Red / Yellow LED
Backlighting	LEDs with colors green, blue and red. Can be turned on separately
Ethernet	10 / 100 Mbit LAN
PoE (Power over Ethernet)	IEEE 802.3af compliant (12 Watt)