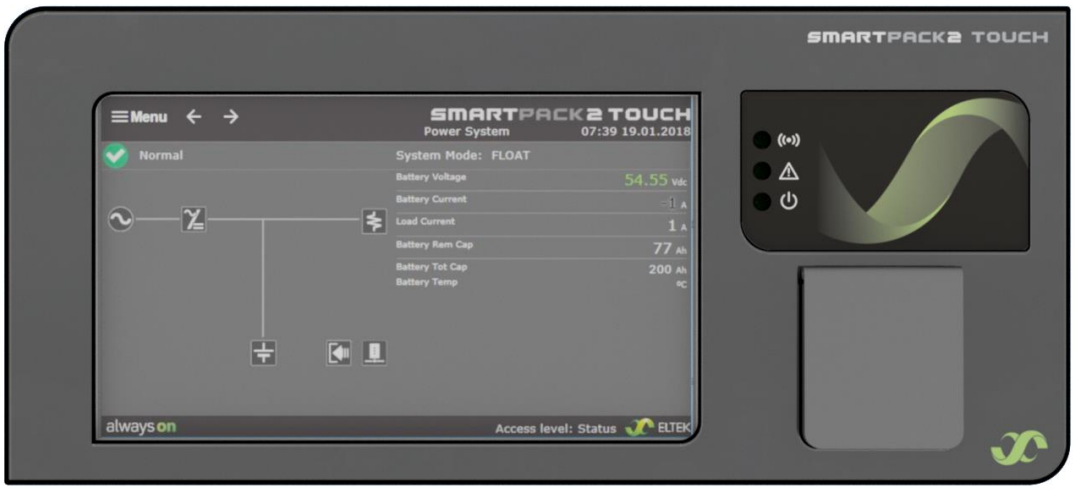

Connections and mounting

SmartPack2 Touch

SP2 UPGRADED WITH ARM CORE, LINUX OPERATING SYSTEM, TOUCH INTERFACE AND ADITIONAL CONECTIVITY OPTIONS

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ELTEK
A Delta Group Company

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2. DESCRIPTION

General

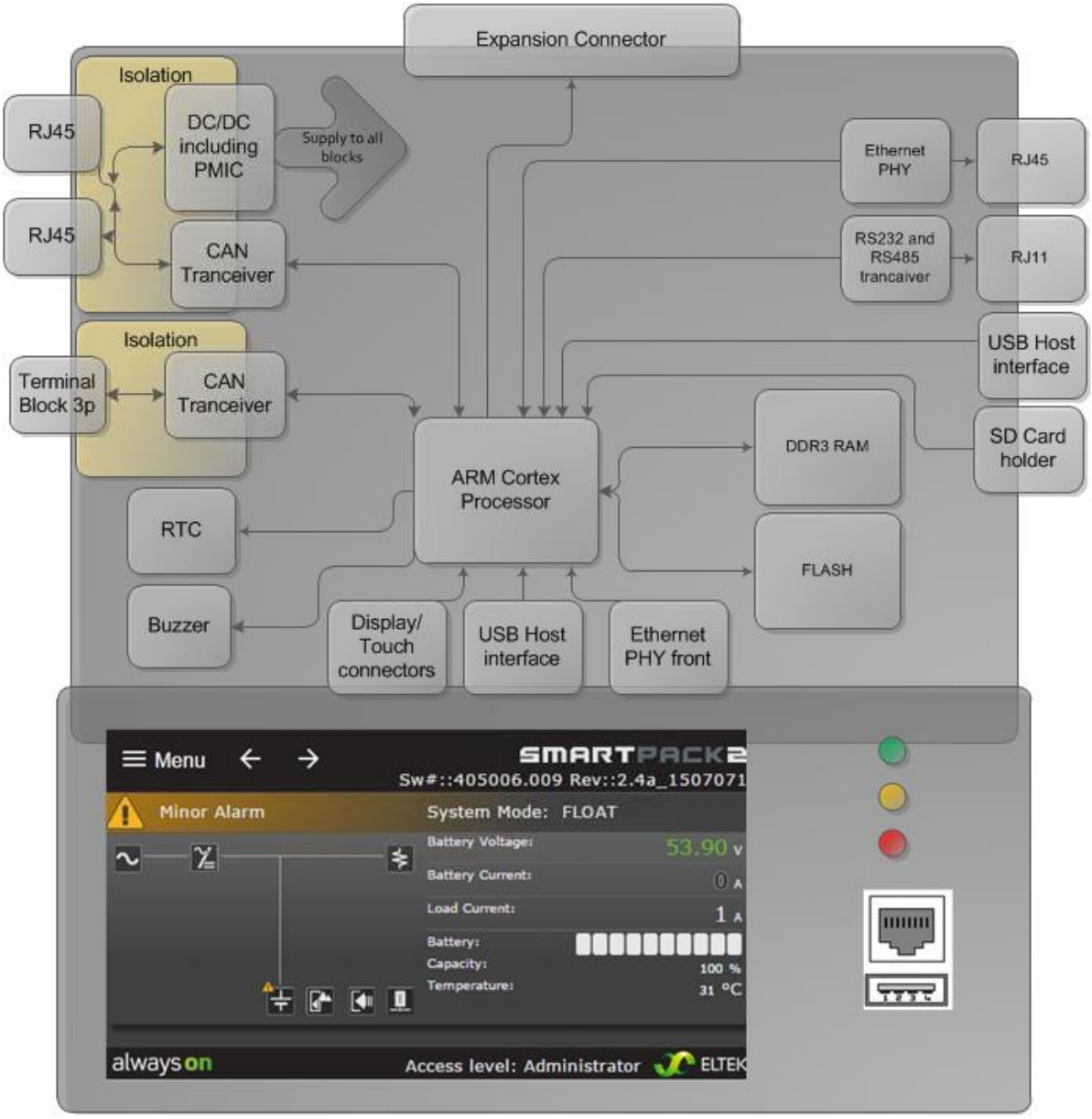
The SmartPack2 Touch /SP2T) is designed to be integrated into the 4U distribution system or similar SP2 Basic/SP2 Basic Industrial based systems where a panel mount controller is required. The unit is powered via distributed power on CAN (+/-15V). It is equipped with a graphical display with capacitive touch used to access a web based user interface for configuration and control of system functionality.

SP2T is the interface for system information, and communicates with SP2 Basic, SP2 Basic Industrial and other nodes and power modules via CAN.

Connecting to the Ethernet ports or via WiFi (USB) allows for easy access to the SP2T's embedded web pages via PC, tablets or phones. Alternatively, a PC running PowerSuite can be connected to the unit in the same way. One of the Ethernet port also allow the SP2T to be connected to a local area network for remote monitoring and control.

Block diagram

The diagram below illustrates the different isolated sections. System connections are pointing to the left and user connections are pointing to the right, and in front. You also find an expansion connector for future use.



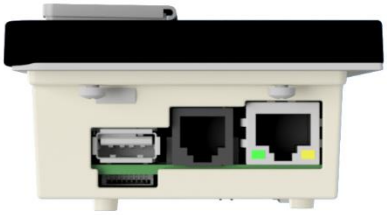
3. CONNECTIONS

The Connections on SP Touch are placed on all sides of the unit.

- System Connections:
  - Com: 2x Isolated CAN (Left side)
- User connections front:
  - USB
  - Ethernet
- User connections right side:
  - USB
  - Ethernet
  - SD card connector
  - Com: RS232 and RS485 (same isolated sections)
- Future use:
  - 20-pins expansion connector
  -

Front side

Right side



Left side

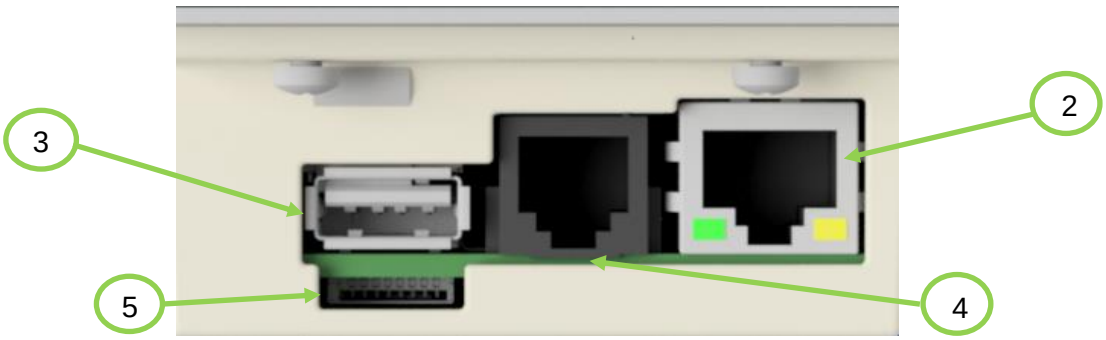
Bottom side

Pin-out and specification of all connectors:

Connectors on the front side

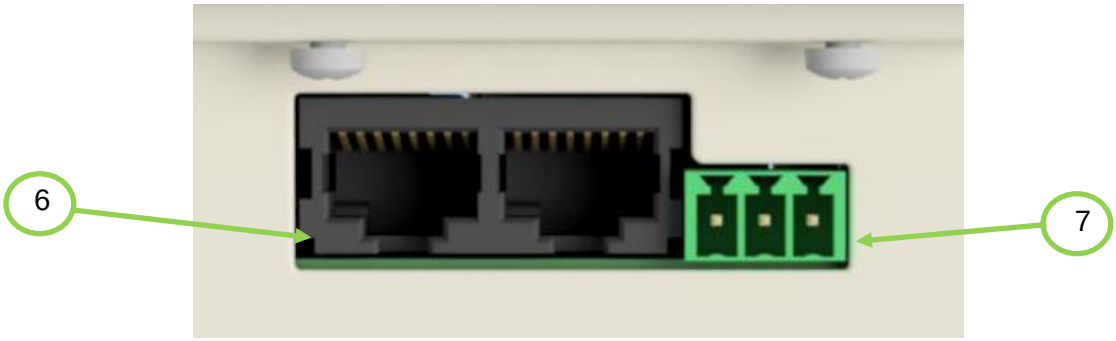
Marker	Function	Component Reference	Connector Type	Pin No.	Text	Pin Assignment
1	Ethernet (Front) ---------- USB (Front)		RJ45 -------- USB A 	1 2 3 4 5 6 7 8 ---- 1 2 3 4		Transmit + Transmit – Receive + - - Receive – - - ---------- VCC (5V DC) D- D+ GND

Connectors on the right side



Marker	Function	Component Reference	Connector Type	Pin No.	Text	Pin Assignment
2	Ethernet (Rear)		RJ45 	1 2 3 4 5 6 7 8		Transmit + Transmit – Receive + - - Receive – - -
3	USB (Rear)		USB A 	1 2 3 4		VCC (5V DC) D- D+ GND
4	RS232/RS 485		RJ11 	1 2 3 4 5 6		Signal GND DCD Tx Rx B A
5	MicroSD Card holder		SD Cardholder 	1 2 3 4 5 6 7 8		DATA2 CD/DATA3 CMD VDD CLK VSS DATA0 DATA1

Connectors on the left side



Marker	Function	Component Reference	Connector Type	Pin No.	Text	Pin Assignment
6	Isolated CAN & Distributed Power		Unshielded Double RJ45 	1 / 9 2 / 10 3 / 11 4 / 12 5 / 13 6 / 14 7 / 15 8 / 16	CAN 1	+15V_CAN -15V_CAN +5V_CAN CAN H CAN L GND_CAN +15V_CAN GND_CAN
7	CAN		3,81mm Plug-in Screw Terminals 	1 2 3	CAN 2	CAN H CAN L GND_BC

The SP2T has two isolated CAN ports.

CAN1 is used for ELTEK system internal communication.
A two port unshielded RJ45 connector is used for CAN bus system connection and placed on the rear left side of the unit.

CAN2 is intended for communication with Delta equipment and third party equipment such as smart batteries, smart meters, etc.
A three-pin terminal block connector is used to connect the SP2T to Delta and third party equipment.

The CAN busses are isolated from all other parts of the unit. The unit does not contain any termination resistors, hence these must be placed externally by using a 120Ω resistor at each end of the bus.

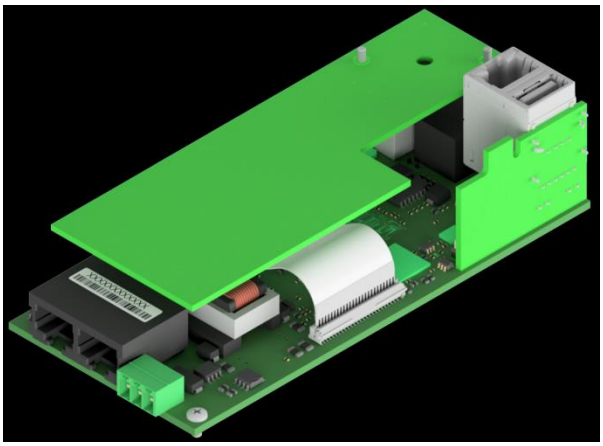
Connectors on the bottom side

Marker	Function	Component Reference	Connector Type	Pin No.	Text	Pin Assignment
8	Expansion connector		20-pin SMD 	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		5V GND UART3RX UART3TX UART3CTS UART3RTS GND I/O 1 I/O 2 I/O 3 I/O 4 I/O 5 I/O 6 I/O 7 I/O 8 I/O 9 I/O 10 I/O 11 I/O 12 GND
9	Pin connector		2-pin connector*	1 2		

*Jumper settings: Add jumper on 2-pin connector (Marker 9) for 150Ω termination of RS485 communication.

4. MECHANICAL SOLUTION

The module consists of three separate PCBA's as shown on the illustration below. The main board is mounted in the bottom box, and the front connector containing Ethernet/USB is assembled on a separate board, soldered to the main board. The display board is mounted in the top of the box, against the LCD, with cable connection to the main board.



5. MOUNTING

Fixing brackets

The units will be delivered with a small plastic bag, with two fixings brackets and one grounding screw. Four screws are already mounted, ready to mount the two fixing brackets.

Screws for mounting brackets

Fixing Brackets

Place brackets over the screws and slide them to the side, to fasten.

Tighten the screws:
Torque 0,8 – 1 Nm

Door mounting

The SP2 Touch is intended for mounting in a cabinet door. The Front Ethernet connection and USB port can be accessed without opening the door, by opening the protection tap on the right side of the display. To access the other connectors and the SD card holder the cabinet door must be open.

6. SYSTEM CONSIDERATIONS

General

SP2 Touch is the interface for system information, and communicates with SP2 Basic, SP2 Basic Industrial and other nodes and power modules via CAN.

Examples of Eltek nodes and controllers that powers and communicates with SP2 Touch via CAN:

SP2 Basic Industrial

SP2 Basic

CAN-Power

Examples of ELTEK nodes and controllers that communicate with SP2Touch via CAN:

I/O Monitor

Battery Monitor

Load Monitor

Fleximonitor

Grounding

The system is grounded by using one of the four towers on the bottom side of the controller.

The cable that connects this point to the system ground should be as short as possible.