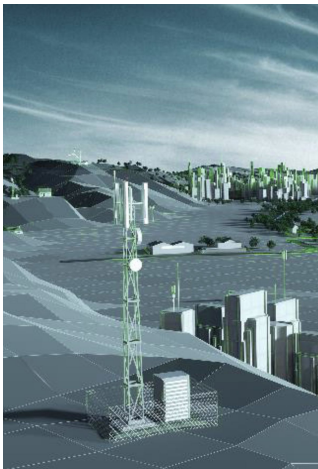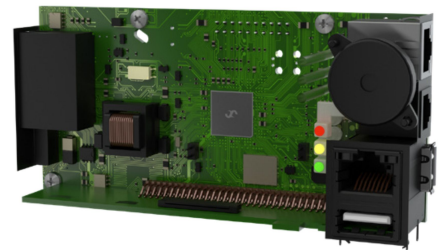# Smartpack2 Touch

Distributed control system for medium to large power systems

Integrates with 3rd party control systems and control devices

It's built on a Linux based OS, with a fast CPU at its core. Fit to handle future demands like Big Data, smart grid applications, and IOT.

New features and look on a well-tested control platform

Eltek's new Smartpack2 Touch controller offers much more than its delicately designed exterior suggests. It will be for power system managers what the smart phone is for people in general: so powerful and yet so simple to use it becomes an essential part of daily life.

Full control at your fingertips!

The new Smartpack2 Touch raw power with a touch of elegance.

Future proof

The Smartpack2 Touch is the next generation controller, and its the only controller that you need. It supports all your equipment, Eltek, Delta or 3rd party, and it has the highest security rating.

Smartpack2 Touch

Telecom	System Solution
• Radio Base stations/ Cell Sites • Mobile Switching Center (MSC) • Microwave • Central Office • Cable • Broadband	

Industrial	System Solution
• Power Utilities • Railway & Metro • Marine & Offshore • Oil & Gas • Low & High Voltage switchgear • Transformer & SUB Stations • Power Generation & Distribution • Emergency lighting systems • Industrial control systems • Process and Heavy industry	

Hybrid	System Solution
Smartpack2 comes with advanced software to control power systems with multiple power sources. It handles solar energy, generators, unstable grids and is prepared for wind power. Suitable applications may include (but not exclude): • Radio Base stations/ Cell Sites • Mobile Switching Center (MSC) • Microwave • Central Office • Cable • Broadband	

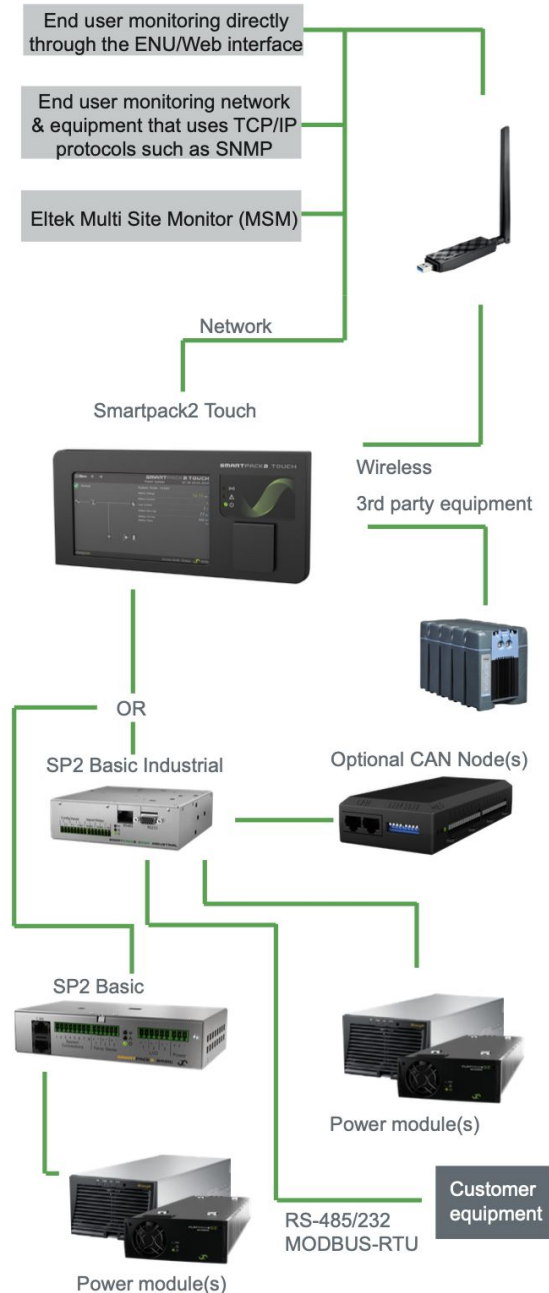| Data Center	System Solution
• Distributed power solutions • Central power solutions • Front End/In-rack power	

Smartpack2 Touch

Distributed Control System

Three units are required to build a complete Smartpack2 control system.

- Smartpack2 Touch is the master controler and visible part of the system.
- Smartpack2 Basic handles housekeeping.
- IO Monitor Type2 handles external inputs and outputs.
- The system can be expanded with several Basic, I/O units and other CAN nodes in the Smartpack family, all connected via the CAN bus.
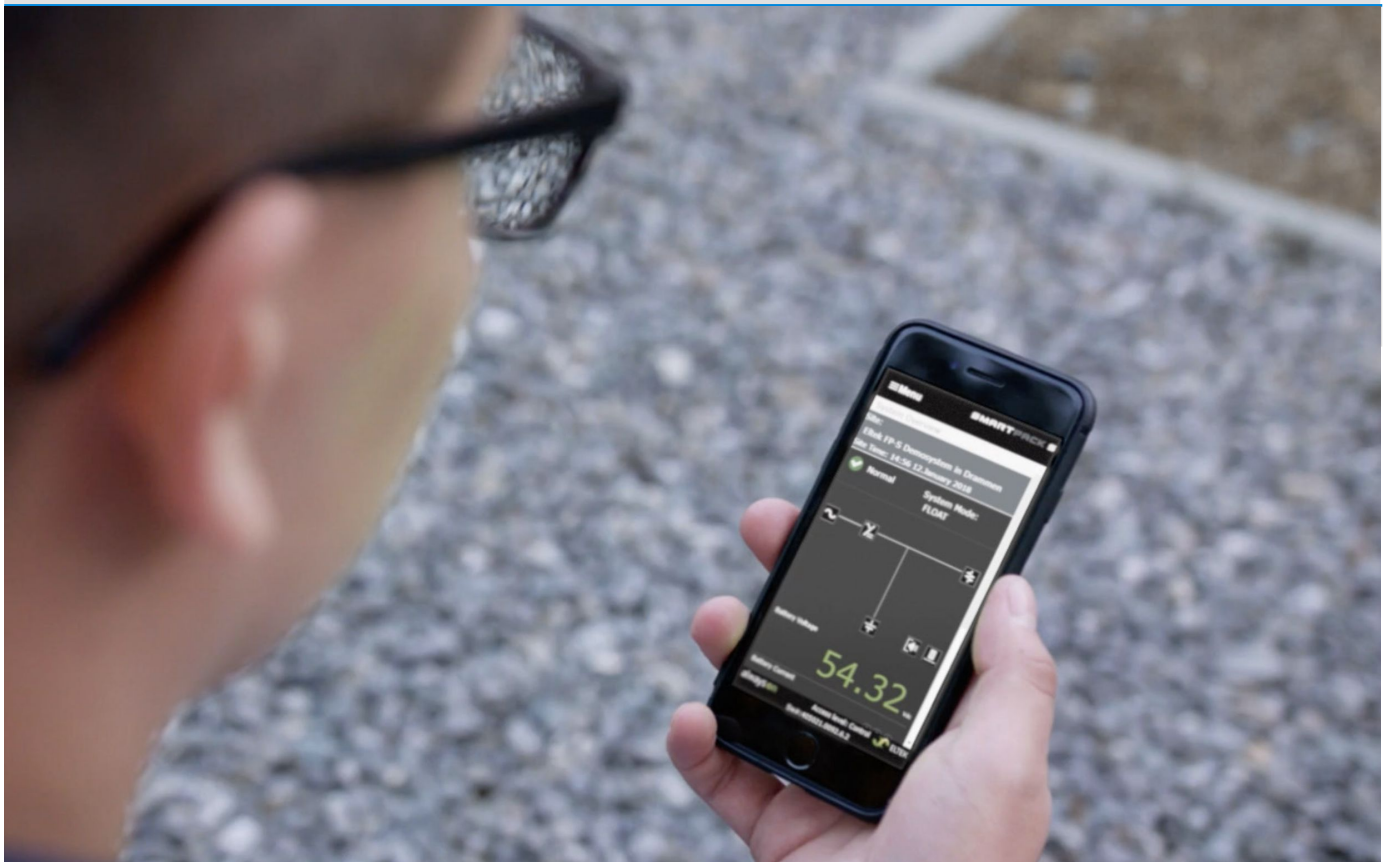
Key features

- Touch Screen
  - High Contrast, High Resolution Color Touch Display For Easy User-menu Navigation
- Ports
  - 2x Can Bus For Internal Power System Communication, 2x Usb Hosts, 2x Ethernet, Rs-232 & Rs-485 Serial Ports For 3rd Party Equipment Monitoring
- Visual Leds And Buzzer For Local Alarms
  - (Major, Minor, Power On)
- Web Interface
  - Monitoring And Control Via Responsive Web Interface On Ethernet Ports
- SNMP Protocol
  - Comprehensive Content On Set, Get And Traps
- Programmable Relay Outputs
  - 6 Programmable Outputs For "trational" Remote Monitoring.
  - Expandable With I/o Monitor Can Nodes.
- Programmable Multipurpose Inputs
  - 6 Programmable Multipurpose Inputs ("digital inputs" Or Analog Signals). Expandable with I/o Monitor Can Nodes.
- Comprehensive Logging
- Backup Of Critical Control Features In Basic Unit.
- Automatic Battery Monitoring And Test
- Battery Lifetime Indication
- Battery Used And Remaining Capacity (AH OR %)
- User Defined Alarm Grouping
  - (Boolean Logic For Grouped Alarms)
- Uploading And Downloading Of Configuration Files
- Comprehensive Generator/hybrid/dc Solar
- System Control And Monitoring Features
- And Much More...

System Building Blocks

End user monitoring directly through the ENU/Web interface

End user monitoring network & equipment that uses TCP/IP protocols such as SNMP

Eltek Multi Site Monitor (MSM)

Network

Smartpack2 Touch

Wireless

3rd party equipment

OR

SP2 Basic Industrial

Optional CAN Node(s)

SP2 Basic

Power module(s)

Power module(s)

RS-485/232 MODBUS-RTU

Customer equipment

DELTA

ELTEK
A brand of Delta

Smartpack2 Touch

Remote Monitoring

Through the network or on-site directly from PC, tablet or smartphone

- System overview with status as "home page".
- Graphs show changes over time of various system variables.
- Configure alarm limits and all other parameters through self explanatory symbols and menus.
- Responsive design
- Download logs (events, energy, generator, battery, inventory,...)
- Upload/save configuration files

Local Monitoring

No PC? No problem!

- The Smartpack2 Touch high-resolution touch display, allows the user easy access to complete configuration and status messages without the use of an on-site PC just as on an ordinary smartphone
- Live system block schematics
- Key system status parameters displayed by default: alarms, battery voltage, rectifier current and load current.
- Single touch to display list of triggered alarms.
- All configurations and setup available from the menus.
- High resolution and contrast – excellent reading and able to show complex content.
- Multilanguage
- Disable external alarms while servicing
- Access control

Setup data and logs – flash drive and large internal memory

- Convenient storage – for backup and transportation
- Easy and robust to roll out a set of systems with identical setup

Smartpack2 Touch

Smartpack2 Master

- 4.4" Graphical high resolution color touch display
- Ethernet for remote and local monitoring-control via responsive WEB Interface
- USB Ports for dongles and flash drive
- Serial ports for 3rd party equipment monitoring
- Multi language menu

Smartpack2 Basic

- Located inside the system – only available to service personnel.
- Powers all control units attached to the CAN bus.
- Handles LVD control.
- Takes control of critical system function in case of a Master Controller failure.
- Short of CAN power or LVD control – add more Basic units

Smartpack2 Basic Industrial

- Full high-voltage range 110Vdc and 220Vdc
- Positive and floating distribution
- Earth fault detection
- Additional voltage measurements without adding CAN Nodes
- High(er) resolution current sense inputs for better accuracy
- Serial ports for special communication protocols
- Data center 380Vdc system compatible
- High capacity systems, up to 960 power modules

Can Nodes (Optional)

- AC Mains Voltage, current, frequency and energy consumption
- Battery symmetry, current and fuse monitoring
- Alarm outputs and control inputs
- Load branch current and fuse
- Climate control of fan/filter cabinets
- Generator control/fuel tank level measurements

Smartpack2 Touch

Control Features / Sw Functionality

Remote Monitoring

- DHCP
- DHCPv6
- SNMP v1, v2c and v3
- MODBUS TCP/RTU Slave
- Modem Call-back & SMS Alarm for GSM modems
- pComm (Windows Config/Monitoring Tool) via Modem & IP
- IPv4
- IPv6 (static-link)
- IPv6 (stateless autoconfig)
- IPv6 (statefull autoconfig) - DHCPv6
- SNTP - clock syncronizing
- SMTP/email custom reports as .csv attached
- SMTP Secure
- RADIUS (single-sign on)
- FTP - file transfer (SW updates, log's download, etc)
- FTPS - FTP secure
- UDP pComm for PowerSuite (Windows Config/Monitoring Tool)
- HTTP (Webpages with all functions / features / monitoring - responsive design for PC screen, tablet screen, smartphone screen)
- HTTPS (TLS enqrypted web interface)

Battery Management/ Monitoring

- Temperature Compensation
- Symmetry - Midpoint measurement 12V, 24V, 30V, 36V, 54V, 108, 110V, 168V
- Symmetry – Double midpoint measurement
- Symmetry – Block measurement 6V, 12V, 24V
- Symmetry – Cell measurement 2V, 6V
- Auto Boost Charge
- Interval Boost Charge
- Follow-up Boost Charge
- Equalize Charge, manual & inerval
- Temperature Compensation during Boost & Equalize Charge
- Battery Discharge Health (SoH) testing - normal, based on discharge batt. Spec.
- Battery Discharge Health (SoH) testing - simple, based on backup time requirement
- Battery Discharge Health (SoH) testing - manual, interval, or alternate scheme
- Battery Test logging
- Battery DoD Cycle logging
- Battery Cycle counter logging
- Battery Run time logging
- Battery LifeTime Prediction based on temp ranges
- Battery Discontinuance Testing -simple or advanced (based on shunt in each string)
- Analog Battery Float charge regulation based on input voltage signal
- Battery Voltage Monitoring (4-level alarm)
- Battery Current Monitoring (4-level alarm)
- Highest of multiple battery temperature Monitoring (4-level alarm)
- Individual Battery Temperatures (4-level alarm)
- Battery SoC Monitoring (2-level Alarm), % or Ah
- Accumulated Ah Charged/Discharged Monitoring (2-level alarm)
- Failed Battery Test Monitoring (1-level alarm)
- Individual Battery Fuse Monitoring (1-level alarm)
- Individual Battery String Current Monitoring (2-level alarm)
- FIAMM SONICK Battery BMS communication
- SAFT Evolion Battery BMS communication
- Narada Battery BMS communication
- Leoch Battery BMS communication
- Sacred Sun Battery BMS Battery BMS communication
- Northstar ACE Battery (Gateway) communication
- Eltek Generic Battery communication protocol
- LVBD (voltage, temperature, mains controllable)

Rectifier Functions/ Monitoring

- Efficiency Manager
- HE Priority
- Slow/Fast/Li-Ion voltage ramp-up
- Power Ramp Up
- Adjustable Current Limit
- Inventory overview
- Auto adressing/plug-and play
- Manuel adesssing override
- Dynamic output OVS
- Start-Up delay
- Rectifier Current Monitoring (2-level Alarm)
- Rectifier Error Monitoring (2-level Alarm)
- Rectifier Communication Error Monitoring (2-level Alarm)
- Rectifier Usage Monitorting (2-level Alarm)
- Rectifier Usage BT Spec Monitorting (2-level Alarm)
- Rectifier Current Share Error Monitorting (2-level Alarm)
- Rectifier Input Air Temperature Highest Monitorting (2-level Alarm)
- Rectifier Qty with Low Mains Monitorting (2-level Alarm)
- RectifierGroup Monitoring (A+B Systems)
- Individual Group Current Share control (A+B Systems)
- Individual Group Charge
- Regulation (A+B Systems)

Rectiverter Functions/ Monitoring

- Adjustable output frequency
- Adjustable output AC voltage
- Adjustable frequency hold-in range/hysteresis for inverter mode
- Adjustable DC Current Limit
- Inventory overview
- Auto adressing/plug-and play
- Manuel adesssing override
- Dynamic output OVS
- Rectiverter AC Output Voltage Phase 1, 2 & 3 Monitoring (4-level Alarm)
- Rectiverter AC Output Frequency Monitoring (4-level Alarm)
- Rectiverter AC Output Current Phase 1, 2 & 3 Monitoring (2-level Alarm)
- Rectiverter DC Output Current Total Monitoring (2-level Alarm)
- Rectiverter Error Monitoring (2-level Alarm)
- Rectiverter AC Current Share Error Phase1, 2 & 3 Monitoring (2-level Alarm)
- Rectiverter AC Capacity Monitoring (2-level Alarm)
- Rectiverter DC Capacity Monitoring (2-level Alarm)
- Rectiverter Temperature (4-level Alarm)
- Rectiverter Communication Error Monitoring (2-level Alarm)

Specifications are subject to change without notice

Smartpack2 Touch

Control Features / Sw Functionality

Solar Charger Functions/ Monitoring

- Charger module built in MPPT
- Voltage Input Value
- Solar Charger Current Monitoring (2-level Alarm)
- Solar Charger Error Monitoring (2-level Alarm)
- Solar Charger Communication Error Monitoring (2-level Alarm)
- Solar Charger Panel Unbalance Monitoring (2-level Alarm)

Load Management/ Monitoring

- LVLD
- Coldstart LVLD
- Load Fuse Monitoring (1-level alarm)
- Load Current Monitoring (2-level alarm)
- Individual Load Fuse Monitoring (1-level alarm)
- Individual Load Current Monitoring (2- level alarm)
- Individual Load Power Monitoring
- Individual Load Energy logging
- Individual Load Energy cost logging

Wind Charger Functions/ Monitoring

- Configurable Power-Voltage Characteristics Curve in charger module
- Wind Charger Current Monitoring (2-level Alarm)
- Wind Charger Error Monitoring (2-level Alarm)
- Wind Charger Communication Error Monitoring (2-level Alarm)

Programmable Logic

- OR function of multiple alarms/events
- AND function of multiple alarms/events
- Inversion of logical signals
- Task Scheduler (hourly, daily, weekly, monthly) of any commands/events
- Alarm Grouping

Alternative Energy/Hybrid Application/Generator Management/Monitoring

- SoC Controlled Gen Set start/stop
- Voltage Controlled Gen Set start/stop
- Daily Schedule Controlled Gen Set start/stop
- Source Limitation for Gen Set Testing
- Priority Solar Charger
- Priority Wind Charger
- Fuel Tank level Monitoring (2-level Alarm)

Logs

- Energy Logging (mains, rectifier, rectiverter, grid inverter, solar charger, wind, battery, load) - hourly, daily, weekly
- Data Logging (10 parameters, various trigger intervals and event triggers)
- BHL/HAA-loggs
- Account login log
- Change log
- Inventory Export

Climate Control & Monitoring

- Fan control, linear speed vs. temp / max speed*
- Fan Speed Deviation Monitoring*
- Humidity Reduction*
- Intervall Preasure Test*
- *Require I/O Montior T3

Various Controller

- Security setup (open/ close UDP/TCP ports)
- Programmable Buzzer
- Remote Software Upgrade - maincontroller over IP
- Remote Software Upgrade - CAN Nodes through maincontroler via FTP
- Controller/Power Module LED Test
- Programmable LED Panel (16 LED / 4 color + 4 Push Button)
- User Account Setup
- Programmable Virtual Inputs
- XML Configurations – full parameter flexibility
- XML Configurations – mass distribution, Web GUI Upload, Windows Upload, SD Card/FTP Upload

Specifications are subject to change without notice

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Smartpack2 Touch

Specifications	
Touch	
Part number	242100.510
System Compatibility	12Vdc to 380Vdc, Positive / Negative / Floating Distribution. Panel Mount
Power consumption	Max 5.4W, Typical 2.4W
Display	Graphical 4,4 inches LCD display - Capacitive touch interface - 480 x RGB x 272 resolution
Ethernet Ports	2 x 10/100 BASE-T, Wi-Fi support w/ USB dogle
Serial Ports	S-232 & RS-485
USB	2 x USB Type A Host
Removable media	uSD card, USB Flash Drive support
SNMP	v1, v2c, v3 w/ GET, SET & TRAPs – Eltek Enterprise MIB Branch 10
Web Interface	Responsive HTML5, java script, encrypted w/TLS
Other network	SMTP Client, NTP Client, FTP/FTPS file transfer, MODBUS TCP
Buzzer	75dB at 1m
IP Grade	22
Dimensions (WxHxD)	174 x 78 x 41 mm (Cut-out: 153 x 68 mm)

Specifications are subject to change without notice

Smartpack2 Touch

Specifications

Basic

Part number	242100.501
Operating temperature	-20 to +70˚C (-4 to 158˚F)
Storage temperature	-40 to +85˚C (-40 to 185˚F)
Input voltage	20-172 VDC (20 -75 VDC***) Shutdown: < 18 VDC
Power consumption	Max 1.5A Max 4.5A (3x LVD max loaded)
Contactor outputs	3 x LVD control outputs
Configurable inputs	3x NO/NC/Temperature: NTC probe
System connections: • Voltage sense • Current sense • Battery fuse* • Load fuse*	24V, 48V, 60V & 110V** systems 0-20mV and 0-60mV range shunts Battery fuse sense, Open/Closed Load fuse sense, Open/Closed, Pull- Up/Down, Diode Matrix
Ground fault	Simple bridge circuit detection
Max basic nodes	8 units on a single CAN-bus
Dimensions (WxHxD)	155 x 35 x 80 mm / 6.4 x 1.4 x 3.3"

Basic Industrial

Part number	242100.601
Operating temperature	-20 to +70˚C (-4 to 158˚F)
Storage temperature	-40 to +85˚C (-40 to 185˚F)
Power consumption	Max 1.6A
Electric isolation	7 different isolated sections
Customer connections: • Configurable Inputs	3x, "digital", temperature / voltage /current measurements. - NO/NC, Pull Up/Dn, Diode Matrix: -10V> +10V (2mV full range) - Current measurements: 4-20mA (ext. sense resistor 100-500Ω) - Temperature measurements: NTC probe

Specifications are subject to change without notice

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Smartpack2 Touch

Specifications

Basic Industrial – Continued

• Relay outputs • Serial communication	3x, NO-C-NO, 0-220V, 30W (max. 1A), configurable RS232C port and RS485 port
System connections: • Voltage sense inputs • Current sense inputs • Battery fuse sense inputs • Load fuse sense inputs • LVD contactor outputs • CAN interface • Earth fault detection	3x, Max. 420VDC, Symmetry & battery monitoring 2x, for 20mV to 60mV current shunts 1x, NO/NC, Pull Up/Dn, Diode Matrix: -10V> +10V (2mV full range) 1x, NO/NC, Pull Up/Dn, Diode Matrix: -10V> +10V (2mV full range) 3x, 10-420V, 1A, Configurable as latching or non-latching LVD Supply input: 10-420V, 1A 2 x, CAN bus systems (separated and isolated) 1x, internal Isolation input
Power system compatibility	Industrial & Telecom, Positive, negative and floating DC distributions
Max number of controller nodes	10 on a single CAN-bus, in addition to Smartpack2 Master controller
Controller configuration	Front keys in the Smartpack2 Master controller, via CWUI in an standard web browser (Controller's Web-based User Interface) and via PowerSuite application
Dimensions	(WxHxD) 146.0 x 146.0 x 45.6 mm / (5.7 x 5.7 x 1.8")

I/O Monitor (Type 2)

Configurable Inputs	6x NO/NC/Analog Voltage [0-75V]
Alarm Outputs	6x Relay–Dry/Form C [Max 75V/2A/60W]
Max I/O Monitors	14 units on a single CAN-bus
Power Consumption	Max 3.6W
Dimensions (WxHxD)	135.1 x 23.5 x 59mm / 5.3 x 0.9 x 2.3"

Specifications are subject to change without notice

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Smartpack2 Touch

Control Devices/Can Nodes	
Part No.	**Description**
242100.300	Battery Monitor
242100.301	Load Monitor
242100.304	I/O Monitor (Outdoor)
242100.306	I/O Monitor Type 3
242100.200	Smartnode RS232/485
242100.510	Smartpack2 Touch
242100.501	Smartpack2 Basic
242100.601	Smartpack2 Basic Industrial
242100.603	Fleximonitor
242100.502	I/O Monitor – Type 2

*Only Open/Closed for 110V **Basic ver. U1.3 ***Basic ver. 1.0 - 1.2

Specifications are subject to change without notice

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www.eltek.com

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