ComAp
The heart of smart control

InteliNeo 530 BESS

Order code: INEO530BBAANU

Controller for Battery Energy Storage System Application

Datasheet

Product description

- The InteliNeo 530 BESS is an advanced energy management system for directly integrating the Battery Management System (BMS) with the Power Conversion System (PCS) within a Battery Energy Storage System (BESS) as well as control, monitoring and protection of the auxiliary systems to ensure the highest level of Storage System performance.

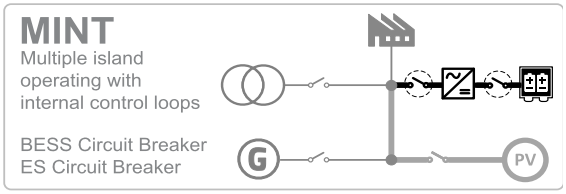
Key benefits

- Single controller solution for integration of the battery energy storage system components and participation in ComAp power management
- Predefined BMS and PCS devices stored within the device list to save time on setting up Modbus communications
- Synchronising AC breaker control for easy addition of the battery energy storage system into a new or existing microgrid
- Controller application and integrated 5” color display are configured using InteliConfig for fast setup and commissioning

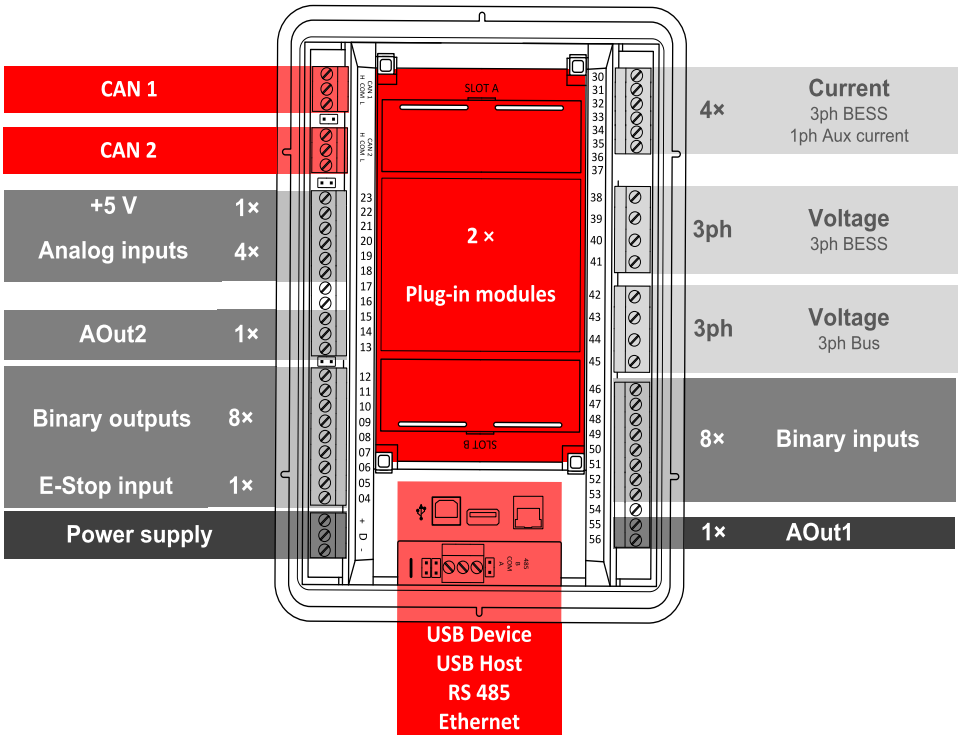
Key features

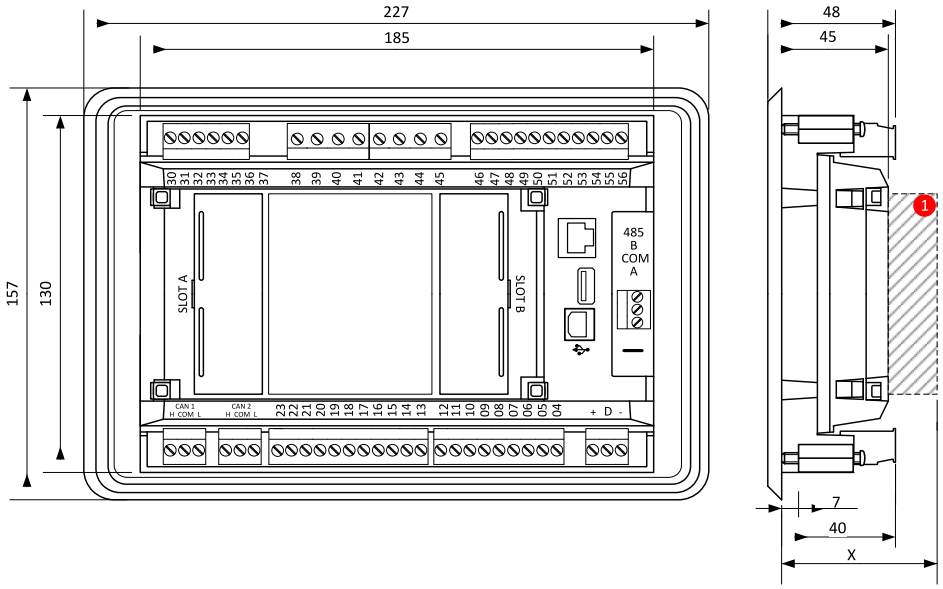
- Grid forming (V/F), grid following (P/Q) and droop (VSG) modes supported
- BMS to PCS integration via Modbus RTU/TCP device list
- Control, monitoring and protection of auxiliary systems within the battery storage system
- AC and DC voltage and current sensing
- AC and DC startup sequence and breaker control
- Compatible load/Var sharing and power management with other ComAp solutions
- Alarm and fault management of all components within the battery storage system
- Event-based history for fast and easy troubleshooting
- Slots for plug-in modules for 4G and GPS, additional Ethernet port, RS232/485 connection or additional binary inputs/outputs
- Secure Modbus TCP interface for higher level external control systems
- Built-in PLC interpreter with the use of ComAp's free PLC Editor
- Remote control and monitoring of your battery storage system with WebSupervisor, our cloud-based fleet management tool
- AirGate 2.0 for easy connection to your equipment remotely, without worrying about your asset’s IP address User-defined protections and setpoints on top of default parameters
- Keeping your business and data as safe as possible with design to the ISA 62443 level 2 - level 3 security requirements

Application overview



Terminals and dimensions





1 Plug-In module

Note: *Dimensions are in millimeters, dimension of "x" depends on a plug-in module,*

Note: *The final depth of the controller depends on the selected plug-in module – it can vary between 47 mm and "x" mm. Mind also the size of connectors and cables (e.g. in case of RS232 connector, add about 60 mm more for standard RS232 connector and cable).*

Note: *The controller is mounted into panel doors as a standalone unit using provided holders. The requested cutout size is 187 × 132 mm. Use the screw holders delivered with the controller to fix the controller into the door.*

Technical data

Power supply

Power supply range	8-36 V DC
Power consumption (without modules)	6 W
RTC battery	Replaceable, 3V
Fusing power	5 A / 6 × 0.5 A BOUT
Fusing ESTOP	2 A
Max. Heat Dissipation	10 W

Operating conditions

Protection degree	IP65
Operating temperature	-30 °C to +70 °C (-40 °C to +70 ˚C)*
Storage temperature	-30 ˚C to +80 ˚C
Operating humidity	95 % non-condensing (EN 60068-2-30)
Vibration	5-25 Hz, ± 1.6 mm 25-100 Hz, a = 4 g
Shocks	a = 500 m/s^2
Surrounding air temperature rating 70 °C.	
Suitable for pollution degree 2.	

Voltage measurement

Measurement inputs	3ph-n Bus voltage
Measurement range	10-277 V AC / 10-480 V AC (EU)
	10-346 V AC / 10-600 V AC (US/Canada)
Linear measurement and protection range (maximal voltage)	350 V AC Ph-N / 660 V AC Ph-Ph
Accuracy	1 %
Frequency range	30-70 Hz (accuracy 0.1 Hz)
Input impedance	0.72 MΩ ph-ph , 0.36 MΩ ph-n

AOut1/VRO

Isolation	Isolated
Type	max ±10 V DC

Aout2/SRO

Isolation	Non-isolated
Type	±10 V DC PWM selectable by jumper

Display

Type	Build-in colour TFT 5"
Resolution	800 × 480 px

Communications

USB device	Non-isolated, USB type B
USB host	Non-isolated, USB type A
RS 485	Isolated
Ethernet	10/100 Mbit
CAN 1A **CAN 2A**	Isolated, 250/50 kbps Terminator impedance 120Ω

Current measurement

Measurement inputs	3ph BESS current 1ph Aux current
Measurement range	5 A
Max. allowed current	10 A
Accuracy	±20 mA for 0-2 A; 1 % of value for 2-5 A
Input impedance	<0.1 Ω

E-Stop

Dedicated terminal for safe Emergency Stop input.
Physical supply for binary outputs 1 & 2.

Binary inputs

Number	8, non-isolated
Close/Open indication	0-2 V DC close contact 6-36 V DC open contact

Binary outputs

Number	8, non-isolated
Max. current	BO 1-8 = 0.5 A
Switching to	Positive supply terminal

Analog inputs

Number	4, switchable (R/U/I)
Range	R = 0-2500 Ω; U = 0-10 V; I = 0-20 mA
Accuracy	R: ±2 % from value ±5 Ω in range 0-250 Ω R: ±4 % from value in range 250 Ω-2500 Ω U: 1 % from value ±100 mV I: 1 % from value ±0.2 mA

+5 V Power supply output

Max. current	100 mA

Note: ** If the device is powered on above -30 °C*

Available plug-in modules

Product	Description	Order code
CM-RS232-485	Dual port interface	CM223248XBX
CM2-4G-GPS	4G & GPS plug-in communication module	CM24GGPSXBX
CM3-Ethernet	Internet / Ethernet plug-in communication module	CM3ETHERXBX
EM-BIO8-EFCP	8 additional binary inputs/outputs	EM2BIO8EXBX
IDC4/4	4 DC Voltage/Current measurement	EM1DC44XBDB

Note: *Controller has 2 slots for plug-in modules.*

Available external displays

Product	Description	Order code
InteliVision 5.2	5" TFT external display with 800x480 px resolution	RD2IV5BXBAA
InteliVision 10Touch	10.1" Touchscreen display uni with 1280 x 800 px resolution	RD1IV10TBPF
InteliVision 13Touch	13.3" Marine certified display unit with 1920 × 1080 px resolution	RD1IV13TBME
InteliVision 18	18.5" Touchscreen display unit with 1366 × 768 px resolution	RD31840PBIE

Available CAN modules

Product	Description	Order code
IGL-RA15	Remote Annunciator w/ 15 programmable LEDs	EM2IGLRABAA
Inteli AIN8	8 Analog Input Channels and 1 RPM/Impulse Input Module	I-AIN8
Inteli IO8/8	16 Configurable Binary Inputs/Outputs and Analog Outputs Module	I-IO8/8
IGS-PTM	4 Analog Inputs, 1 Analog Output, 8 Binary Inputs and 8 Binary Outputs	IGS-PTM
Inteli AIN8TC	8 Analog Input Channels for termocouples measurement	I-AIN8TC
Inteli AIO9/1	4 Analog Inputs for differential voltage measurement, 4 Analog Input equipment channels, 1 Analog Input for resistance measurement and 1 Analog Output	I-AIO9/1
I-CR	CAN Repeater Module	I-CR
I-CR-R	CAN Redundancy Module	I-CR

Functions and protections

Support of functions and protections as defined by ANSI (American National Standards Institute):

Description	ANSI code	Description	ANSI code	Description	ANSI code
Master unit	1	Load shedding	32P	AC circuit breaker	52
Stopping device	5	Master sequence device	34	Power factor	55
Multi-function device	11	Undercurrent	37	Overvoltage	59
Speed and frequency matching device	15	Unit sequence starting	44	Alarm relay *	74
Data communications device	16EFT 16SC	Current unbalance	46	Vector shift	78
Starting-to-running transition contractor	19	Voltage unbalance	47	Reclosing relay	79
Distance relay	21	Incomplete sequence relay	48	Overfrequency	81H
Synchronizing-check	25	Temperature monitoring	49T	Underfrequency	81U
Thermal relay	26	Overcurrent	50/50TD	ROCOF	81R
Undervoltage	27	Earth fault current	50N+64	Auto selective control/transfer	83
Annunciator	30	Overcurrent IDMT	51	Regulating device	90
Overload	32	Earth fault current IDMT	51+64		

* extension module IGL-RA15 required

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Certifications and standards

- EN 61000-6-2
- EN 61000-6-4
- EN 61010-1
- EN 60068-2-1 (-40 °C/16 h)
- EN 60068-2-2 (70 °C/16 h)
- EN 60068-2-6 (2÷25 Hz / ±1,6 mm; 25÷100 Hz / 4,0 g)
- EN 60068-2-27 (a=500 m/s^2; T=6 ms)
- EN 60068-2-30 (25/55 °C, RH 95%, 48 h)
- UKCA

Supplier's Declaration of Conformity

47 CFR § 2.1077 Compliance Information

Unique identifier: INEO530BBAANU

Responsible Party:

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FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.