DATA SHEET

ASC 150 Solar

1. ASC 150 Solar

1.1 About

The ASC 150 Solar controller can be used as a single controller to add PV power to an existing site, or with other DEIF controllers in a power/energy management system. The ASC 150 Solar controller controls and protects a photovoltaic (PV) system with up to 32 inverters.

In a power management system (PMS), the controller is designed for seamless integration of PV power with other power sources. The PMS makes sure that spinning reserve requirements are met, and responds quickly to load and weather changes. To save fuel, the PMS maximises PV penetration, while making sure that the gensets meet their minimum load requirements.

The controller has built-in AC measurements. There are two sets of voltage measurements (three phases, and (optional) the neutral phase), and one set of current measurements (three phases). There is also a 4th current measurement that can be used to measure mains power, or for power metering.

Operators can easily control the system from the display unit. Alternatively, use the communication options to connect to an HMI/SCADA system.

1.1.1 Software packages

You can choose the **Extended** or **Premium** software package.

1.2 Single-line application diagrams

1.2.1 Single solar controller

The ASC 150 Solar can operate as a single controller, that is, without power management communication to other controllers. Single controllers are particularly useful for brownfield applications. Single controllers can also be used in greenfield applications.

Software variants

Single solar controller	Extended	Premium
External gensets	4	16
External mains	1	16
Photovoltaic breaker (PVB) control	●	●
Mains breaker control (paralleling)		●

Example for a single solar controller with fixed power
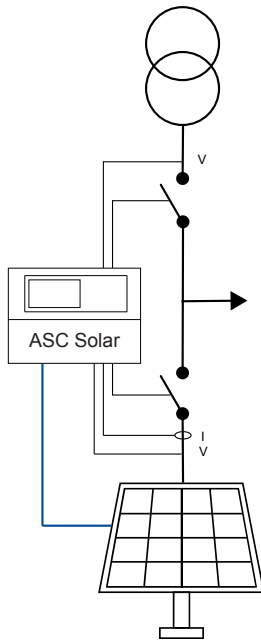
Fixed power: When given a signal, the controller starts, synchronises, and connects the PV. After the breaker closes, the controller ramps up the load to the set point level. When the stop command is given, the PV breaker is de-loaded, opened and the PV is stopped.

The solar controller can also control the mains breaker. For fixed power, the controller does not need power measurements from other power sources.

Example for a single solar controller with peak shaving, load take-over and mains power export

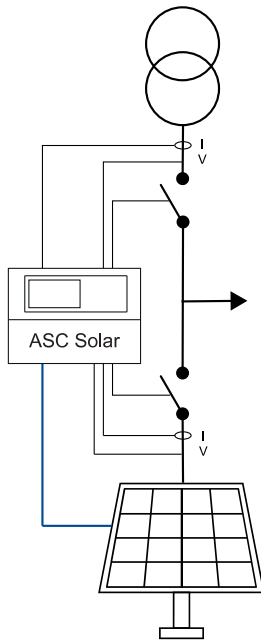- **Peak shaving**: Power plant where the PV supplies the peak load demand and runs parallel to mains.
- **Load take-over**: Plant mode where the load is moved from mains to PV, for example, during peak demand periods or periods with a risk of power outages.
- **Mains power export**: PV with fixed kW set point (excluding increasing load).

The solar controller calculates the power set points for the PV power plant based on power readings and breaker positions.

- **Only one other power source**: You can use the controller's 4th current transformer terminals to measure its power.
- **Multiple other power sources**: You must use power meters or transducers.

Adding a single solar controller to an existing plant (brownfield application)
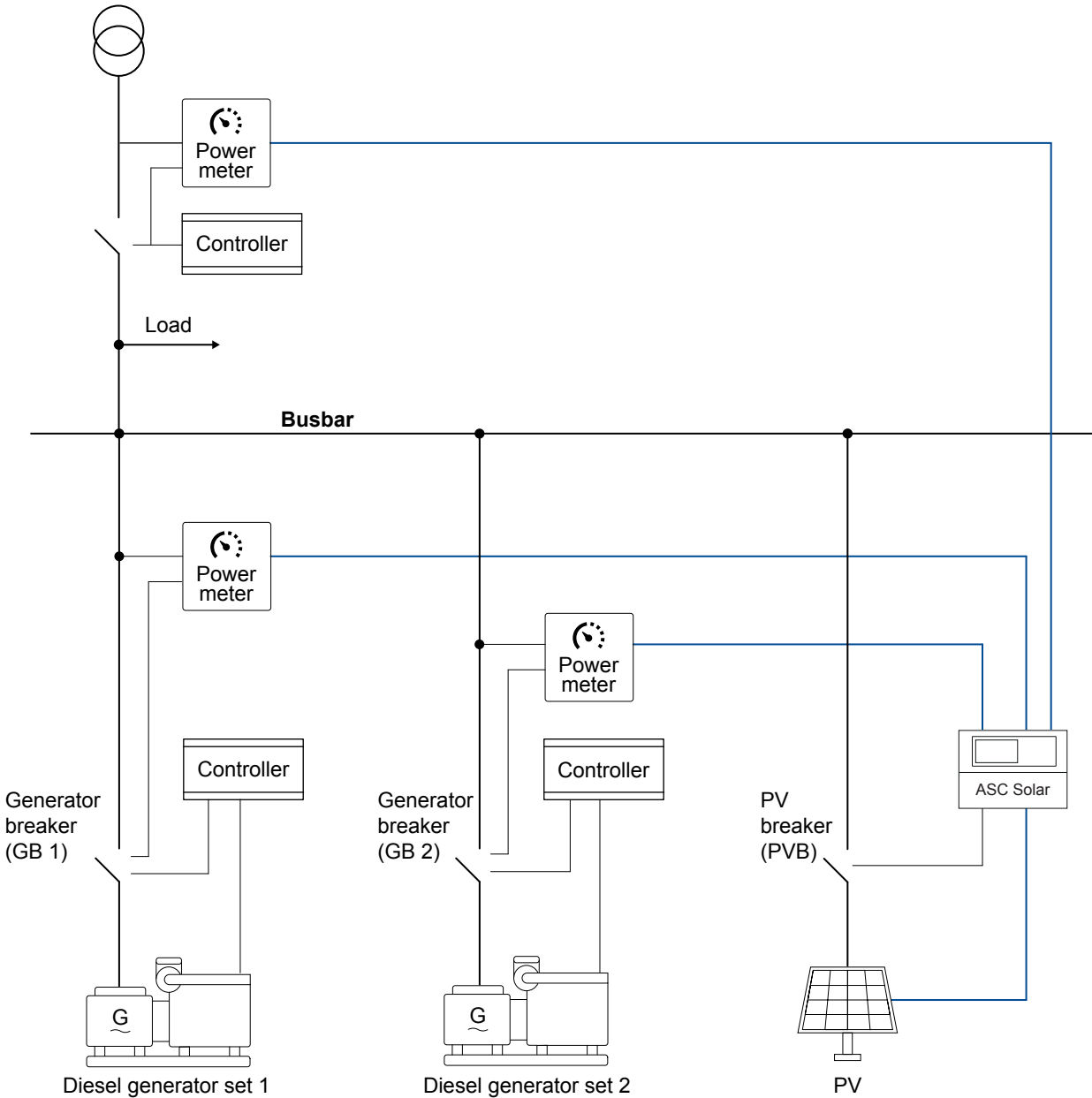
1.2.2 Grid-tied

The ASC 150 Solar controllers can integrate seamlessly into grid-tied applications. This includes power management applications with other DEIF controllers using CAN bus communication.

The ASC 150 Solar can feed surplus PV energy to the grid, or charge the energy storage system (ESS). Alternatively, the ASC 150 Solar can regulate the PV production to match the self-consumption, thereby preventing any feed-in of PV power to the grid.

These controller configurations can be used in greenfield applications. To use these configurations in brownfield applications, all the controllers must be replaced with DEIF controllers.

Grid-tied solar and genset

PMS

AGC Mains

ASC Solar

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V
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V

Consumers

AGC Genset

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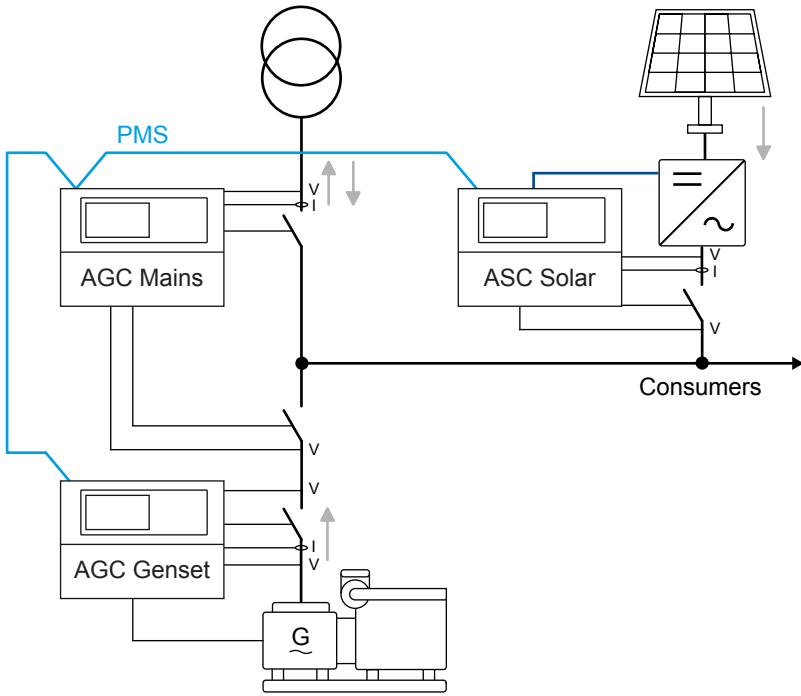
Grid-tied solar, genset and storage

PMS

AGC Mains

ASC Solar

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Consumers

V

PMS

AGC Genset

ASC Storage

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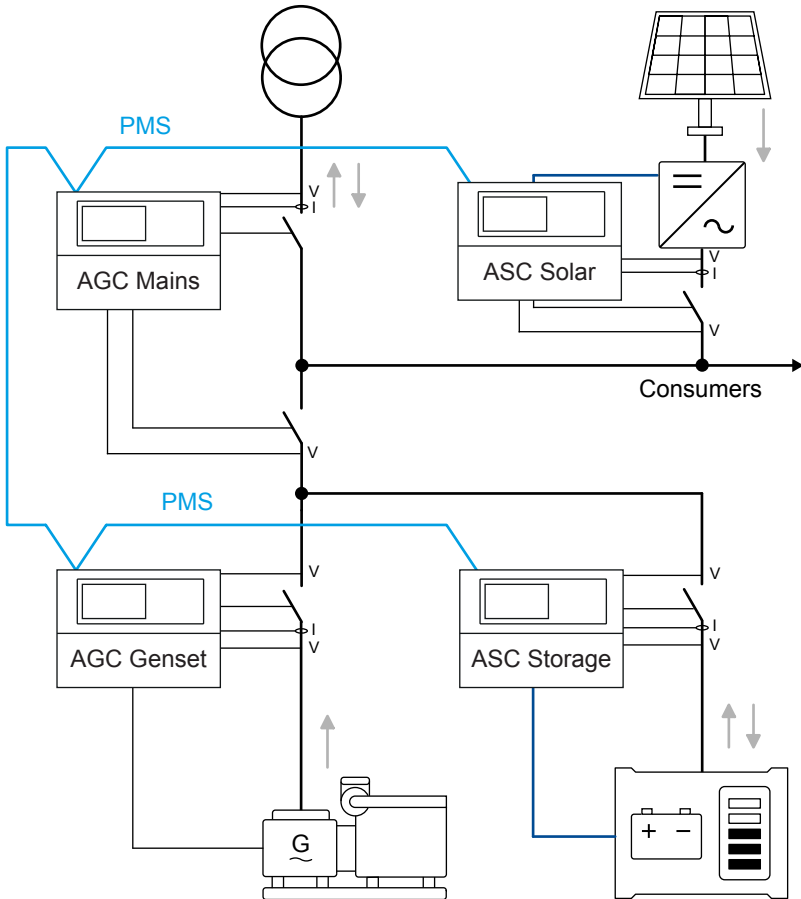
Grid-tied solar and storage
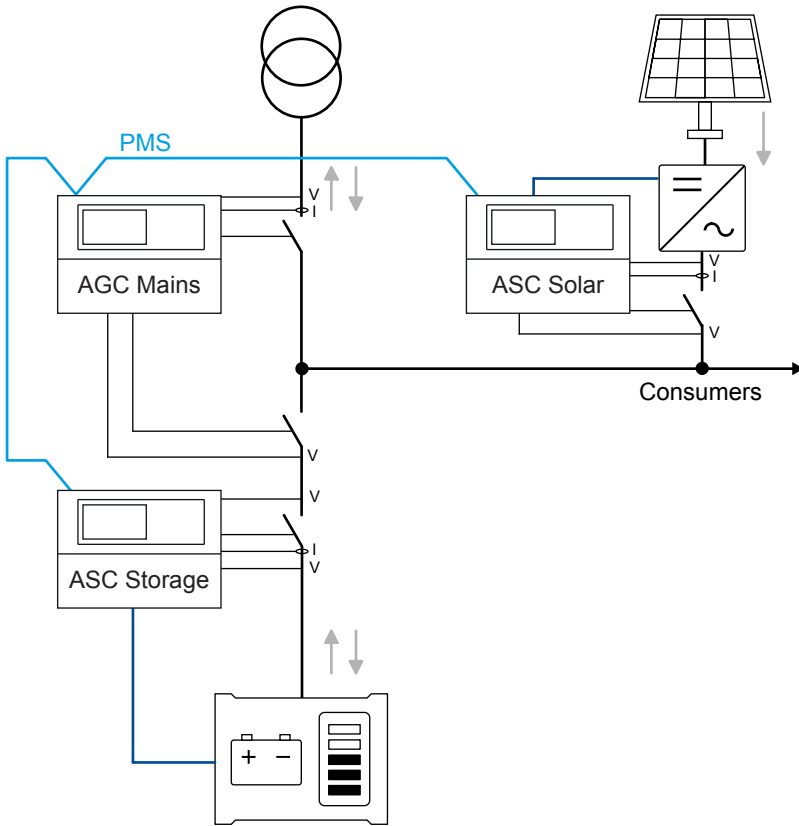
1.2.3   Off-grid

The ASC 150 Solar controllers provide flexibility for off-grid applications.

The ASC 150 Solar controller can work with other DEIF controllers to manage the PV power with other power sources. When used with a genset, the ASC 150 Solar controller uses the genset power measurements to calculate the set points for the PV power. When used with storage, the available PV power is combined with the charge/discharge scheme to determine the set point for the PV power.

These controller configurations can be used in greenfield applications. To use these configurations in brownfield applications, all the controllers must be replaced with DEIF controllers.

Off-grid with genset(s) and solar

PMS

ASC Solar

AGC Genset

Consumers
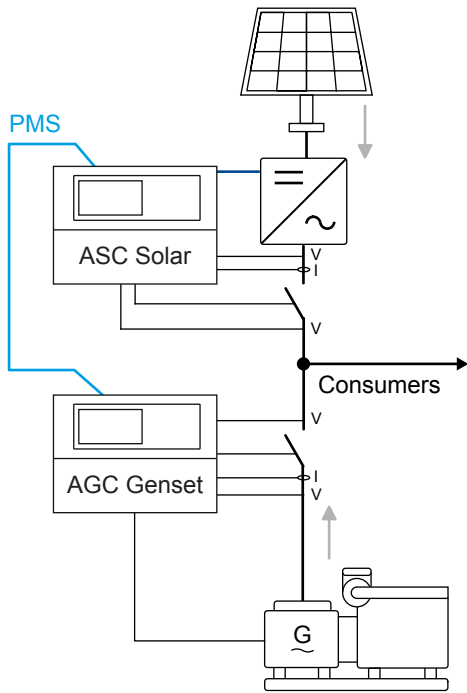
Off-grid with genset(s), solar and storage

PMS

ASC Solar

Consumers

AGC Genset

ASC Storage
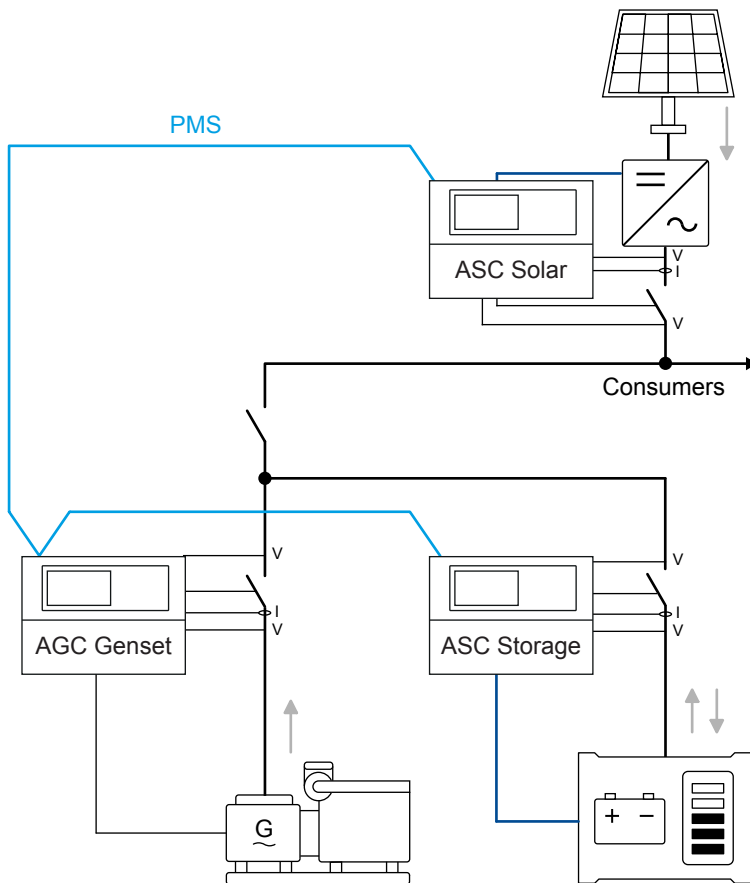
Off-grid with solar and storage
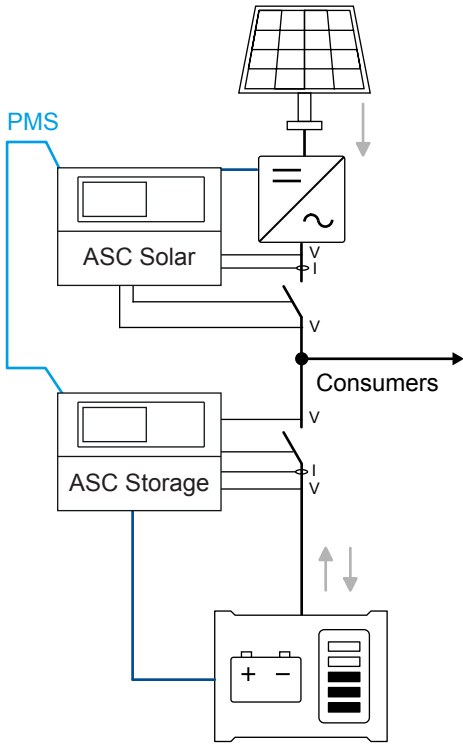
1.3 Display, buttons and LEDs
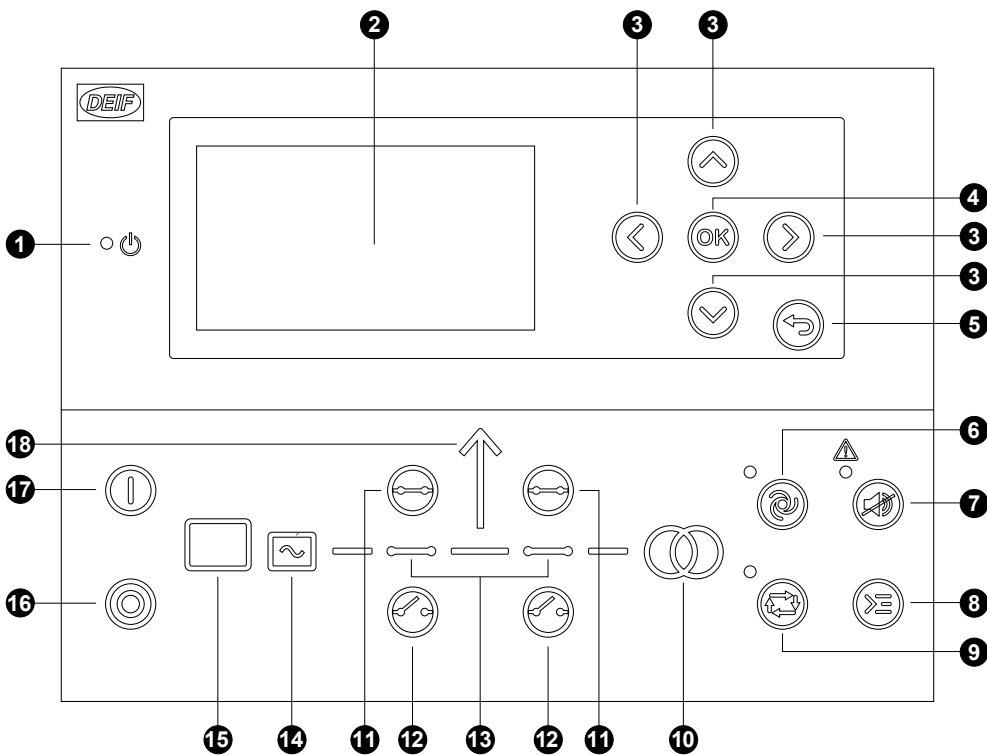
No.	Name	Function
1	Power	Green: The controller power is ON. OFF: The controller power is OFF.
2	Display screen*	Resolution: 240 x 128 px. Viewing area: 88.50 x 51.40 mm. Six lines, each with 25 characters.

| No.	Name	Function
3	Navigation	Move the selector up, down, left and right on the screen.
4	OK	Enter the Menu system. Confirm the selection on the screen.
5	Back	Go to the previous page.
6	AUTO mode	The controller automatically starts and stops (and connects and disconnects) the PV, and automatically controls the power. No operator actions are needed.
7	Silence horn	Turns off an alarm horn (if configured) and enters the Alarm menu.
8	Shortcut menu	Access the Jump menu, Mode selection, Test, Lamp test, and Solar (PV semi start and stop).
9	SEMI-AUTO mode	The operator or an external signal can also open and close the PV breaker. Automatic controller actions are not possible. The controller automatically synchronises before closing a breaker, and automatically de-loads before opening a breaker.
10	Mains symbol	Green: Mains/busbar voltage and frequency are OK. The controller can synchronise and close the breaker. Red: Mains/busbar voltage failure.
11	Close breaker	Push to close the breaker.
12	Open breaker	Push to open the breaker.
13	Breaker symbols	Green: Breaker is closed. Green flashing: Synchronising or de-loading. Red: Breaker failure.
14	Inverter	Green: Inverter voltage and frequency are OK. The controller can synchronise and close the breaker. Green flashing: The inverter voltage and frequency are OK, but the V&Hz OK timer is still running. The controller cannot close the breaker. Red: The inverter voltage is too low to measure.
15	Photovoltaic	Green: There is solar PV system available feedback. Green flashing: The solar PV system is getting ready. Red: The solar PV system is not running, or there is no availability feedback.
16	Stop	Stops the PV if SEMI-AUTO or Manual is selected.
17	Start	Starts the PV if SEMI-AUTO or Manual is selected.
18	Load symbol	OFF: Power management application Green: The supply voltage and frequency are OK. Red: Supply voltage/frequency failure.

NOTE   * You can use the display to monitor PV operation.

1.4 Typical wiring for solar controller

(wiring diagram)
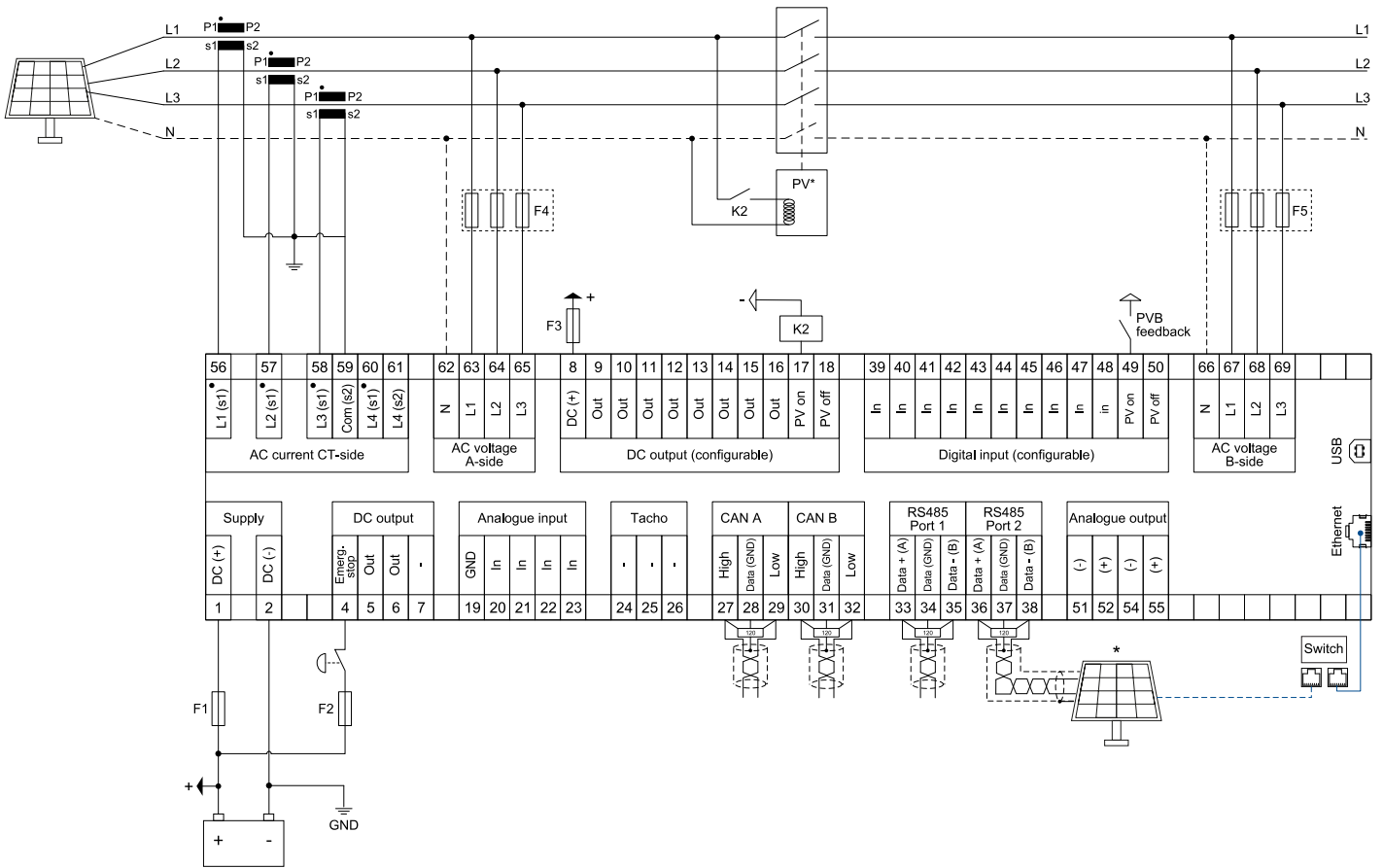
NOTE   * PV breaker: Optional PV breaker.

* Communication with PV inverter: The controller can use RS-485 or Ethernet communication.

Fuses:

- F1: 2 A DC max. time-delay fuse/MCB, c-curve
- F2: 6 A AC max. time-delay fuse/MCB, c-curve
- F3: 4 A DC max. time-delay fuse/MCB, b-curve
- F4, F5: 2 A AC max. time-delay fuse/MCB, c-curve

1.5 Functions and features

1.5.1 Solar functions

Spinning reserve

If there is a mains connection, the power management system can start and stop the genset(s) to provide a spinning reserve. The spinning reserve can be a percentage of the PV power production or the mains import.

Ideal for self-consumption applications

While in grid parallel mode, the ASC 150 Solar can feed surplus PV energy to the grid and generate profit in accordance with grid operator feed-in tariffs. Alternatively, the controller can regulate the PV production to match the self-consumption, thereby preventing any feed-in of PV power to the grid if prohibited by grid operator regulations.

Solar functions	Extended	Premium
Number of inverters	16	32*
Photovoltaic breaker (PVB) control	●	●
Power management	●	●
Irradiance sensor	●	●
Weather station		●
Reactive power control		●
Inverter monitoring	●	●
Inverter start/stop logic	●	●
PV integration	●	●
Solar power load calculation	●	●
Ensure a minimum genset load	●	●
PV power counters (kWh)	●	●
Mains import/export power counters (kWh)	●	●

NOTE * The ASC 150 can have up to 16 TCP/IP connections, or up to 32 RTU connections.

NOTE If you need to use weather forecasts and/or redundant controllers (option T1), use an **ASC-4 Solar controller**.

NOTE For a system that includes gensets, up to 16 inverters, and a mains connection, you can use an **AGC 150 Hybrid controller**.

1.5.2 General controller functions

AC functions	Extended	Premium
Sets of nominal settings	4	4
Select the AC configuration: • 3-phase/3-wire • 3-phase/4-wire • 2-phase/3wire (L1/L2/N or L1/L3/N) • 1-phase/2-wire L1	● ● ● ●	● ● ● ●
100 to 690 V AC (selectable)	●	●
CT -/1 or -/5 (selectable)	●	●
4th current measurement: Power from a Mains, Genset, or PV	●	●

General functions	Extended	Premium
Emulation for testing and front load commissioning	●	●
Built-in test sequences (Simple test, Load test, Full test, and Battery test)	●	●
PLC logic (M-Logic)	40 lines	80 lines
Counters, including: • Breaker operations • kWh meter (day, week, month, total) • kvarh meter (day, week, month, total)	● ● ● ●	● ● ● ●
General purpose PID regulators (2 x built-in analogue outputs)		●

General functions	Extended	Premium
4 additional analogue outputs (using 2 x IOM 230)		●
Simple load shedding and adding	●	●
Changeable controller type	●	●

Setting and parameter functions	Extended	Premium
Quick setup	●	●
User permission level	●	●
Password-protected setup	●	●
Trending on USW	●	●
Event logs with password, up to 500 entries	●	●

Display and language functions	Extended	Premium
Supports multiple languages (including Chinese, Russian, and other languages with special characters)	●	●
20 configurable graphical screens	●	●
Graphical display with six lines	●	●
Parameters can be changed on the display unit	●	●

Modbus functions	Extended	Premium
Modbus RS-485	●	●
Modbus TCP/IP	●	●
Configurable Modbus area	●	●

1.5.3   Supported photovoltaic systems

The ASC 150 Solar supports a wide range of PV systems, power meters, weather stations, and forecast systems. The controllers are compatible with photovoltaic (PV) systems from a wide range of manufacturers.

SunSpec compliance

All DEIF hybrid controllers are compliant with the SunSpec standards (see sunspec.org). DEIF controllers are therefore compatible with new inverters that use the generic SunSpec protocol.

Testing

Many PV inverter makers use the same protocol for a wide range of their products. New PV inverters often comply with the older protocol. If a specific inverter is not listed, but the maker is listed, there is a good chance that the DEIF controller is compatible.

If your PV inverter is not listed, DEIF can help to confirm compliance using the Modbus protocol documentation.

Implementing new protocols

Since new systems are launched every year, DEIF developers continuously implement new protocols. If your system is not listed, please contact DEIF. We can work with you to quickly implement the required protocol.

📖 **More information**
See **Application note, DEIF hybrid controller compatibility** for the list of the supported protocols.

1.5.4 Emulation

The controller includes an emulation tool to verify and test the functionality of the application, for example plant modes and logics, breaker handling, mains and generator operation.

Application emulation is useful for training, customising plant requirements and for testing basic functionality that needs to be set up or verified.

1.5.5 Easy configuration with the utility software

Set up an application easily with a PC and the utility software.

You can also use the utility software to quickly configure the inputs, outputs, and parameters.
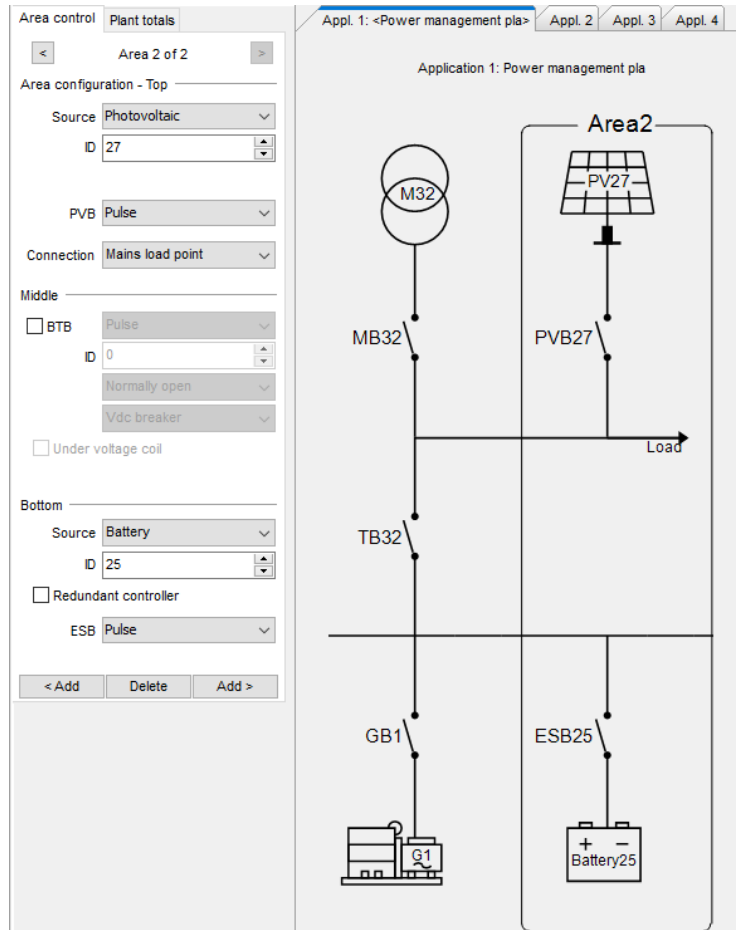
1.6 Power management

1.6.1 Introduction

The power management system automatically supplies the power that is necessary for the load efficiently, safely and reliably.

The power management system:
* Automatically maximises PV power
* Automatically starts and stops generators
* Automatically closes and opens breakers
* Optimises the fuel consumption
* Balances the loads in the system
* Deploys plant logic
* Makes sure that the system is safe

You can monitor the complete power management system from a graphical supervision page in the utility software. You can also see running status, hours in operation, breaker status, the condition of the mains and busbars, fuel consumption, and so on.

Multi-master system

The power management system is a multi-master system, for increased reliability. In a multi-master system all vital data is transmitted between the controllers, so that all the controller know the power management status (calculations and position) in the application. As a result, the application does not have a single master controller.

Busbar sections

The plant can be divided by one to eight bus tie breakers. This makes it possible to run different sections of the plant in different plant modes. For example, you can use this to test a section, or to divide the load into primary and secondary loads.

1.6.2   Power management plant modes

The plant modes are configurable and can be changed at any time. All modes can be combined with Automatic Mains Failure mode (AMF). You can use the controllers for the following applications:

Standard plant modes	Applications
Island mode	Power plant with synchronising generators.
Automatic Mains Failure	Critical power/emergency standby plants, black start generator.
Fixed power	Power plant with fixed kW set point (including building load).
Peak shaving	Power plant where generator supplies peak load demand paralleled to the mains.
Load take-over	Plant mode where the load is moved from mains to generator. For example, peak demand periods, or periods with a risk of power outages.
Mains power export	Power plant with fixed kW set point (excluding building load).

1.6.3   Power management features

Power management features	E•tended	Premium
Power management operation: • Number of generator controllers • Number of mains controllers • Number of BTB controllers • Number of solar controllers • Number of storage (BESS) controllers • Number of load controllers (ALC-4)	32 32 8 16 16 8	32 32 8 16 16 8
Hybrid ready (compatible with ASC-4 and ASC 150)	●	●
Load controller support (compatible with ALC-4)	●	●
Genset load-dependent start and stop	●	●
EasyConnect	●	●
Asymmetrical genset load sharing	●	●
N + X (Secured mode)	●	●
Genset priority selection: • Manual • Running hours • Fuel optimisation	● ●	● ● ●
Safety stop of genset	●	●

1.7 Protections overview

Protections	Alarms	ANSI	Operate time
Reverse power	2	32R	<200 ms
Fast over-current	2	50P	<40 ms
Over-current	4	50TD	<200 ms
Voltage dependent over-current	1	51V	
Over-voltage	2	59	<200 ms
Under-voltage	3	27P	<200 ms
Over-frequency	3	81O	<300 ms
Under-frequency	3	81U	<300 ms
Unbalanced voltage	1	47	<200 ms
Unbalanced current	1	46	<200 ms
Under-excitation or reactive power import	1	32RV	<200 ms
Over-excitation or reactive power export	1	32FV	<200 ms
Overload	5	32F	<200 ms
Neutral current	1	51N	<100 ms
Busbar over-voltage	3	59P	<50 ms
Busbar under-voltage	4	27P	<50 ms
Busbar over-frequency	3	81O	<50 ms
Busbar under-frequency	3	81U	<50 ms
Emergency stop	1	1	<200 ms
Low auxiliary supply	1	27DC	
High auxiliary supply	1	59DC	
PV breaker external trip	1	5	
Synchronisation failure alarms	1/breaker	25	
Breaker open failure	1/breaker	52BF	
Breaker close failure	1/breaker	52BF	
Breaker position failure	1/breaker	52BF	
Phase sequence error	1	47	
De-load error	1	34	
Hz/V failure	1	53	
Not in Auto	1	34	

2. Compatible products

2.1   Power management

You can use these controllers together in a power management system:

- **AGC 150 Generator** (see www.deif.com/products/agc-150-generator)
- **AGC 150 Mains** (see www.deif.com/products/agc-150-mains)
- **AGC 150 BTB** (see www.deif.com/products/agc-150-btb)
- **ASC 150 Solar** (see www.deif.com/products/asc-150-solar)
- **ASC 150 Storage** (see www.deif.com/products/agc-150-storage)
- **AGC-4 Mk II Genset, Mains, BTB, Group, and Plant** (see www.deif.com/products/agc-4-mk-ii)
- **AGC-4 Genset, Mains, BTB, Group, and Plant** (see www.deif.com/products/agc-4)
- **ASC-4 Solar** (see www.deif.com/products/asc-4-solar)
- **ASC-4 Battery** (see www.deif.com/products/asc-4-battery)
- **ALC-4 (Automatic Load Controller)** (see www.deif.com/products/alc-4)

2.2   Remote monitoring service: Insight

Insight is a responsive remote monitoring service. It includes real-time genset data, a customisable dashboard, GPS tracking, equipment and user management, email and/or SMS alerts, and cloud data management. See www.deif.com/products/insight

2.3   Additional inputs and outputs

The controller uses CAN bus communication with these:

- **CIO 116** is a remote input expansion module. See www.deif.com/products/cio-116
- **CIO 208** is a remote output expansion module. See www.deif.com/products/cio-208
- **CIO 308** is a remote I/O module. See www.deif.com/products/cio-308
- **IOM 220** and **IOM 230** each have two analogue outputs. These can be used for general PID control.

2.4   Additional operator panel, AOP-2

The controller uses CAN bus communication to the additional operator panel (AOP-2). Configure the controller using M-Logic. On the AOP-2, the operator can then:

- Use the buttons to send commands to the controller.
- See LEDs light up to show statuses and/or alarms.

You can configure and connect two AOP-2s if the controller has the premium software package.

2.5   Other equipment

DEIF has a wide variety of other equipment that is compatible. This includes synchroscopes, meters, transducers, current transformers, power supplies, and battery chargers. See www.deif.com

2.6   Controller types

If the AGC 150 or ASC 150 has an extended or premium software package, you can change it to any AGC 150 or ASC 150 controller type. Select the controller type under `Basic settings > Controller settings > Type`.

Parameter	Setting	Controller type
9101	DG unit	Genset (Generator or Stand-alone) controller
	Mains unit	Mains controller
	BTB unit	BTB controller
	DG HYBRID unit	Genset-Solar hybrid controller
	ENGINE DRIVE unit	Engine drive controller
	Remote unit	Remote display
	ENGINE DRIVE MARINE unit	Engine drive controller for marine use
	DG MARINE unit	Stand-alone genset controller for marine use
	Solar unit*	Solar controller
	Storage unit*	Battery storage controller

NOTE * These controllers also require option S10.

Parameter	Setting	Controller type
	DG unit	Genset (Generator or Stand-alone) controller
	Mains unit	Mains controller
	BTB unit	BTB controller

3. Technical specifications

3.1 Electrical specifications

Power supply	
Power supply range	Nominal voltage: 12 V DC or 24 V DC Operating range: 6.5 to 36 V DC
Voltage withstand	Reverse polarity
Power supply drop-out immunity	0 V DC for 50 ms (coming from min. 6 V DC)
Power supply load dump protection	Load dump protected according to ISO16750-2 test A
Power consumption	5 W typical 12 W max.
RTC clock	Time and date backup

Supply voltage monitoring	
Measuring range	0 V to 36 V DC Max. continuous operating voltage: 36 V DC
Resolution	0.1 V
Accuracy	±0.35 V

Voltage measurement	
Voltage range	Nominal range: 100 to 690 V phase-to-phase (above 2000 m derate to max. 480 V)
Voltage withstand	U_n +35 % continuously, U_n +45 % for 10 seconds Measuring range of nominal: 10 to 135 % Low range, nominal 100 to 260 V: 10 to 351 V AC phase-to-phase High range, nominal 261 to 690 V: 26 to 932 V AC phase-to-phase
Voltage accuracy	±1 % of nominal within 10 to 75 Hz +1/-4 % of nominal within 3.5 to 10 Hz
Frequency range	3.5 to 75 Hz
Frequency accuracy	±0.01 Hz within 60 to 135 % of nominal voltage ±0.05 Hz within 10 to 60 % of nominal voltage
Input impedance	4 MΩ/phase-to-ground, and 600 kΩ phase/neutral

Current measurement	
Current range	Nominal: -/1 A and -/5 A Range: 2 to 300 %
Number of CT input	4
Max. measured current	3 A (-/1 A) 15 A (-/5 A)
Current withstand	7 A continuous 20 A for 10 seconds 40 A for 1 second
Current accuracy	From 10 to 75 Hz: • ±1 % of nominal from 2 to 100% current • ±1 % of measured current from 100 to 300 % current From 3.5 to 10 Hz:

Current measurement

	• +1/-4 % of nominal from 2 to 100 % current • +1/-4 % of measured current from 100 to 300 % current
Burden	Max. 0.5 VA

Power measurement

Accuracy power	±1 % of nominal within 35 to 75 Hz
Accuracy power factor	±1 % of nominal within 35 to 75 Hz

Digital inputs

Number of inputs	12 x digital inputs Negative switching
Maximum input voltage	+36 V DC with respect to plant supply negative
Minimum input voltage	-24 V DC with respect to plant supply negative
Current source (contact cleaning)	Initial 10 mA, continuous 2 mA

DC outputs

Number of 3 A outputs	2 x outputs 15 A DC inrush and 3 A continuous, supply voltage 0 to 36 V DC Endurance tested according to UL/ULC6200:2019 1.ed: 24 V, 3 A, 100000 cycles (with an external freewheeling diode)
Number of 0.5 A outputs	10 x outputs 2 A DC inrush and 0.5 A continuous, supply voltage 4.5 to 36 V DC
Common	12/24 V DC

Analogue inputs

Number of inputs	4 x analogue inputs
Electrical range	Configurable as: • Negative switching digital input • 0 V to 10 V sensor • 4 mA to 20 mA sensor • 0 Ω to 2.5 kΩ sensor
Accuracy	Current: • Accuracy: ±20 uA ±1.00 % rdg Voltage: • Range: 0 to 10 V DC • Accuracy: ±20 mV ±1.00 % rdg RMI 2-wire LOW: • Range: 0 to 800 Ω • Accuracy: ±2 Ω ±1.00 % rdg RMI 2-wire HIGH: • Range: 0 to 2500 Ω • Accuracy: ±5 Ω ±1.00 % rdg

Display unit	
Type	Graphical display screen (monochrome)
Resolution	240 x 128 pixels
Navigation	Five-key menu navigation
Log book	Data log and trending function
Language	Multi-language display

3.2 Environmental specifications

Operation conditions	
Operating temperature (incl. display screen)	-40 to +70 °C (-40 to +158 °F)
Storage temperature (incl. display screen)	-40 to +85 °C (-40 to +185 °F)
Accuracy and temperature	Temperature coefficient: 0.2 % of full scale per 10 °C
Operating altitude	0 to 4000 meter with derating
Operating humidity	Damp Heat Cyclic, 20/55 °C at 97 % relative humidity, 144 hours. To IEC 60255-1 Damp Heat Steady State, 40 °C at 93 % relative humidity, 240 hours. To IEC 60255-1
Change of temperature	70 to -40 °C, 1 °C / minute, 5 cycles. To IEC 60255-1
Protection degree	IEC/EN 60529 • IP65 (front of module when installed into the control panel with the supplied sealing gasket) • IP20 on terminal side
Vibration	Response: • 10 to 58.1 Hz, 0.15 mmpp • 58.1 to 150 Hz, 1 *g*. To IEC 60255-21-1 (Class 2) Endurance: • 10 to 150 Hz, 2 *g*. To IEC 60255-21-1 (Class 2) Seismic vibration: • 3 to 8.15 Hz, 15 mmpp • 8.15 to 35 Hz, 2 *g*. To IEC 60255-21-3 (Class 2)
Shock	10 *g*, 11 ms, half sine. To IEC 60255-21-2 Response (Class 2) 30 *g*, 11 ms, half sine. To IEC 60255-21-2 Withstand (Class 2) 50 *g*, 11 ms, half sine. To IEC 60068-2-27, test Ea Tested with three impacts in each direction in three axes (total of 18 impacts per test)
Bump	20 *g*, 16 ms, half sine IEC 60255-21-2 (Class 2) Tested with 1000 impacts in each direction on three axes (total of 6000 impacts per test)
Galvanic separation	CAN port 2: 550 V, 50 Hz, 1 minute RS-485 port 1: 550 V, 50 Hz, 1 minute Ethernet: 550 V, 50 Hz, 1 minute Analogue output 51-52 (GOV): 550 V, 50 Hz, 1 minute Analogue output 54-55 (AVR): 3000 V, 50 Hz, 1 minute Note: No galvanic separation on CAN port 1 and RS-485 port 2
Safety	Installation CAT. III 600 V Pollution degree 2 IEC/EN 60255-27
Flammability	All plastic parts are self-extinguishing to UL94-V0
EMC	IEC/EN 60255-26

3.3 UL/cUL Listed

Requirements	
Installation	To be installed in accordance with the NEC (US) or the CEC (Canada)
Enclosure	A suitable type 1 (flat surface) enclosure is required Unventilated/ventilated with filters for controlled/pollution degree 2 environment
Mounting	Flat surface mounting
Connections	Use 90 °C copper conductors only
Wire size	AWG 30-12
Terminals	Tightening torque: 5-7 lb-in.
Current transformers	Use Listed or Recognized isolating current transformers
Communication circuits	Only connect to communication circuits of a listed system/equipment

3.4 Communication

Communication	
CAN A	You can connect these in a daisy chain (and operate them at the same time): • CIO 116, CIO 208, and CIO 308 • IOM 220 and IOM 230 Data connection 2 wire + common Not isolated External termination required (120 Ω + matching cable)
CAN B	Used for: • AOP-2 Data connection 2 wire + common Isolated External termination required (120 Ω + matching cable) PMS 125 kbit and 250 kbit
RS-485 Port 1	Used for: • Modbus master to PV • Modbus master to weather station • Power meters • Modbus RTU, PLC, SCADA, Remote monitoring (Insight) Data connection 2-wire + common Isolated External termination required (120 Ω + matching cable) 9600 to 115200
RS-485 Port 2	Used for: • Modbus master to PV • Modbus master to weather station • Power meters • Modbus RTU, PLC, SCADA, Remote monitoring (Insight) Data connection 2-wire + common Not isolated External termination required (120 Ω + matching cable) 9600 to 115200
RJ45 Ethernet	Used for: • Modbus master to PV

| Communication	
	• Modbus master to weather station • Modbus to PLC, SCADA, and so on • NTP time synchronisation with NTP servers • Backup power management system (PMS) communication between AGC 150 and ASC 150 controllers Isolated Auto detecting 10/100 Mbit Ethernet port
USB	Service port (USB-B)

3.5 Approvals

Standards
CE
UL/cUL Listed to UL/ULC6200:2019, 1. ed. controls for stationary engine gensets

NOTE   Refer to www.deif.com for the most recent approvals.

3.6 Dimensions and weight
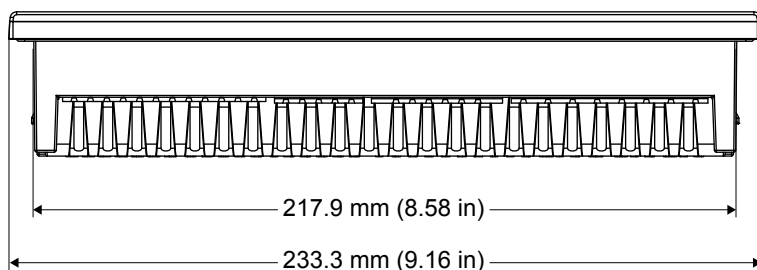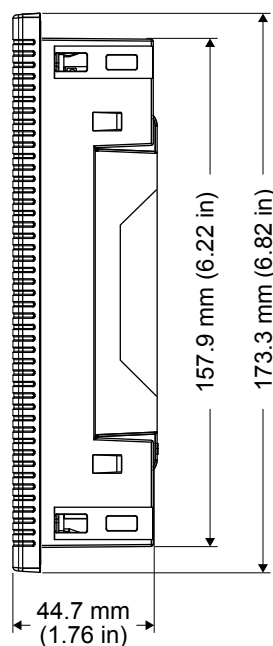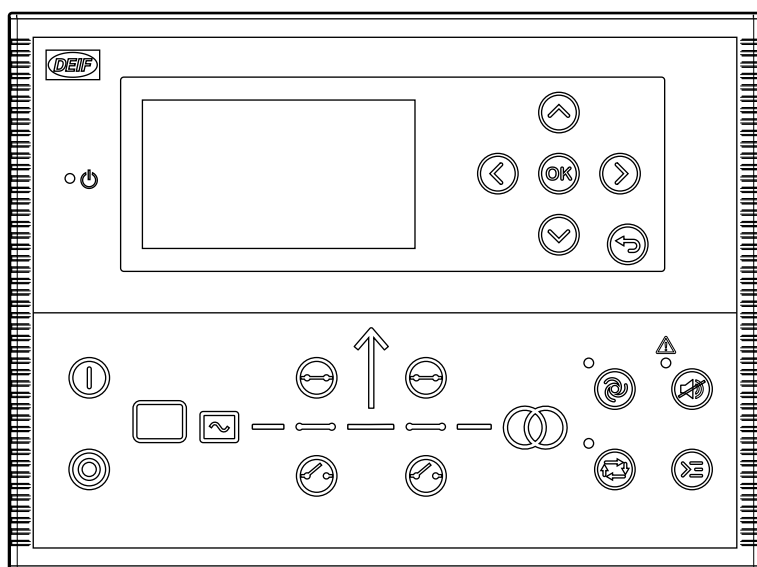
Dimensions and weight	
Dimensions	Length: 233.3 mm (9.16 in) Height: 173.3 mm (6.82 in) Depth: 44.7 mm (1.76 in)
Panel cutout	Length: 218.5 mm (8.60 in)

Dimensions and weight	
	Height: 158.5 mm (6.24 in) Tolerance: ± 0.3 mm (0.01 in)
Max. panel thickness	4.5 mm (0.18 in)
Mounting	UL/cUL Listed: Type complete device, open type 1 UL/cUL Listed: For use on a flat surface of a type 1 enclosure
Weight	0.79 kg

4. Legal information

Disclaimer

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The English version of this document always contains the most recent and up-to-date information about the product. DEIF does not take responsibility for the accuracy of translations, and translations might not be updated at the same time as the English document. If there is a discrepancy, the English version prevails.

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4.1 Software version

This document is based on AGC 150 software version 1.xx.