

	Extended	Premium
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)	●	●

About ASC 150 Solar

Use the **ASC 150 Solar** as a **single controller** to add PV power to an existing site, or with other DEIF controllers in a **power/energy management system (PMS)**. The ASC 150 Solar controller optimises the PV power, to **save fuel** and maximise green penetration.

Each controller controls and protects a photovoltaic (PV) system with up to **32 inverters**. The controller is **plug-and-play**, and **easy to customise** (with the user-friendly M-Logic tool). You can **easily scale up** from a single controller, to a PMS with a variety of controllers and up to 16 solar controllers.

Solar features

Spinning reserve

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

Ideal for self-consumption applications

- 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.

	Extended	Premium
Number of inverters	16	32
Photovoltaic breaker (PVB) control	●	●
Power management	●	●
Irradiance sensor	●	●

Single controller

- Useful for **rental** and **brownfield** applications
- Makes sure that there is a **minimum genset load**
- Requires **power measurement** and breaker feedback for other power sources
 - **Only one source:** Can use the controller's 4th current measurement.
 - **Multiple power sources:** Measurements from:
 - Genset controllers (DEIF or third parties)
 - Power meters
 - Transducers
- Power management communication is not required

Power management

- Automatically maximises PV power
- Automatically starts and stops generators
 - Load-dependent start and stop
- Automatically closes and opens breakers
- Optimises the fuel consumption
 - Asymmetric load sharing possible
- Balances the loads in the system
- Uses the plant logic
- Makes sure that the system is safe

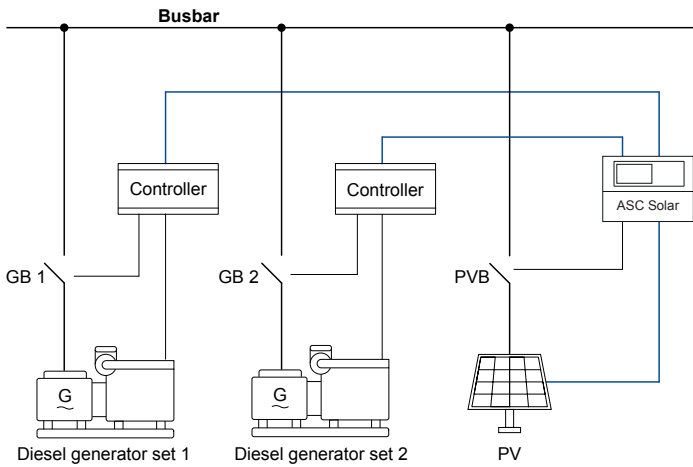
Off-grid applications

- **With a genset:** The controller uses the genset power measurements to calculate the set points for the PV power.
- **With storage:** The controller combines the available PV power with the charge/discharge scheme to determine the set point for the PV power.

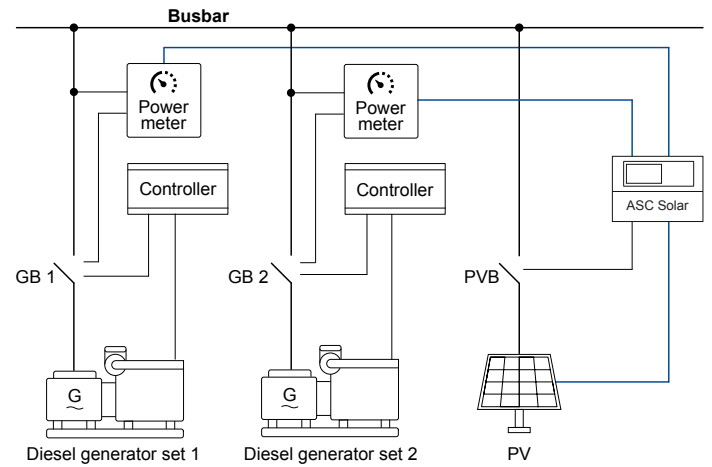
Grid-tied applications

- Feed surplus PV energy to the grid
- Charge the energy storage system (ESS)
- Regulate PV production to match the self-consumption

Single controller



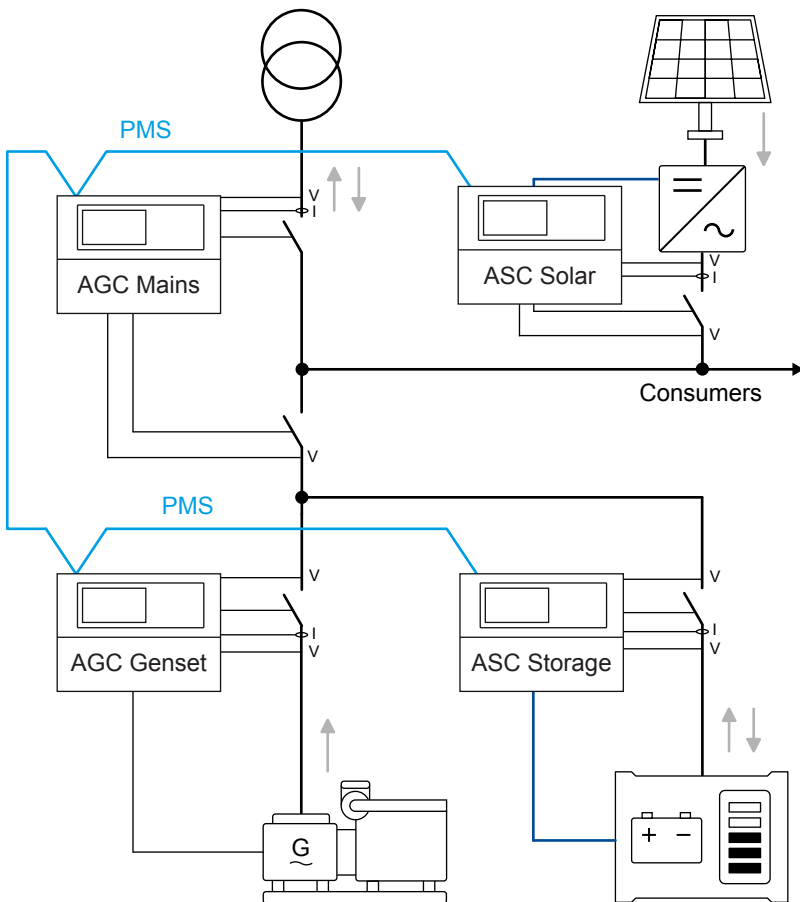
Power measurement from genset controllers



Power measurement from power meters

Maximum number of gensets for a single controller: 4 (Extended) or 16 (Premium)

Power management

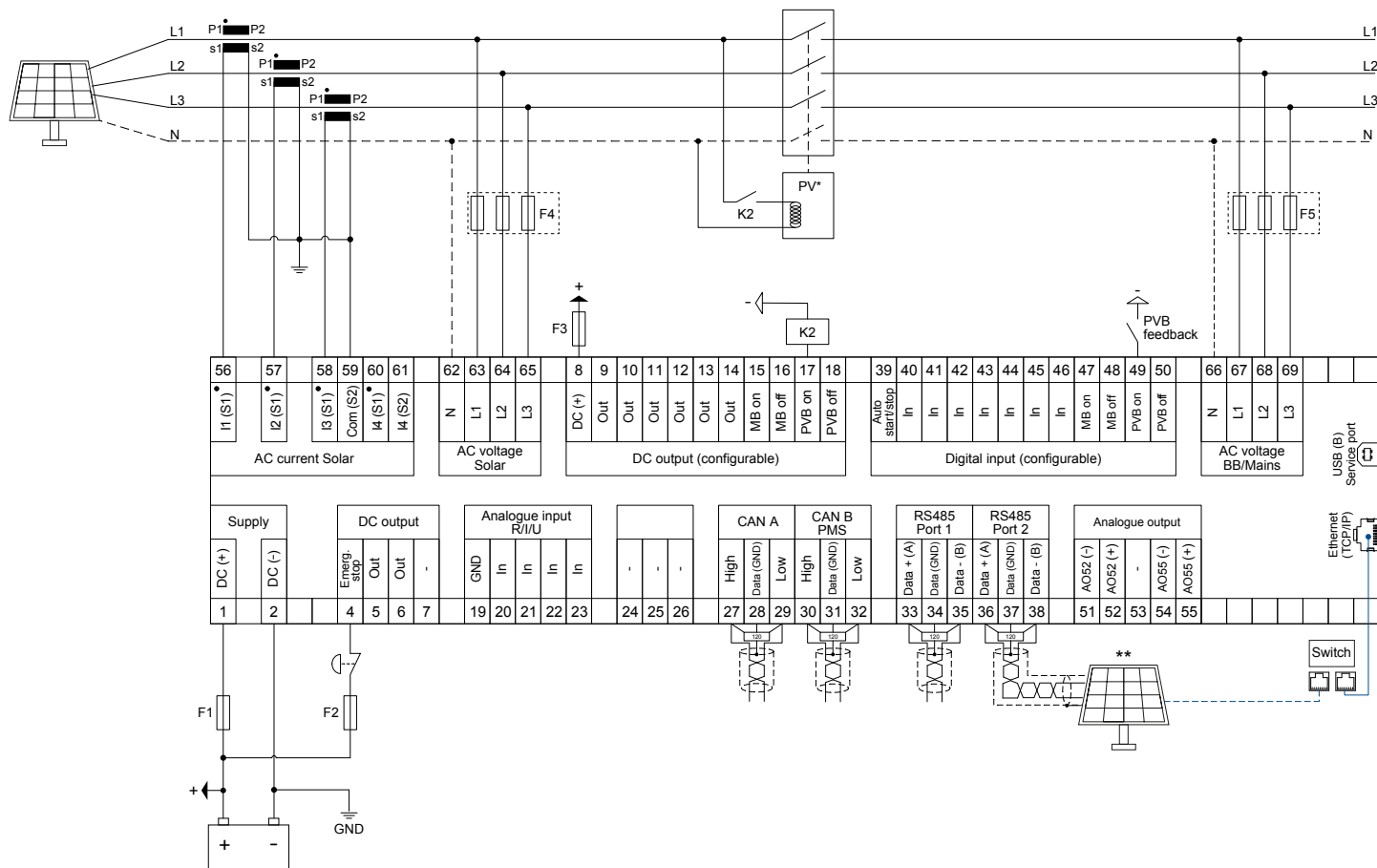


Maximum number of compatible controllers*

Generator controllers.....	32
Mains controllers.....	32
BTB controllers.....	8
Solar controllers.....	16
Storage (BESS) controllers.....	16
Load controllers.....	8

* All controllers must use DEIF power management.

Typical wiring



Communication

PV inverters

- Modbus RTU (RS-485)
- Modbus TCP (Ethernet)

Power meters

- Modbus RTU (RS-485)

Other DEIF controllers

- CAN bus
- Ethernet

Weather stations

- Modbus RTU (RS-485)

Compatibility

PV inverters

- Supports hundreds of PV inverter types
- Supports a wide range of manufacturers

Power meters

- Genset controllers (DEIF or third parties)
- Power meters
- Transducers

Weather stations and sensors



More information

See **DEIF hybrid controller compatibility** for all the compatible PV inverters, power meters, and weather stations.

AC measuring

- Voltage: 100 to 690 V phase-to-phase (10 to 135 %), ±1 %
- Current: -/1 A or -/5 A (2 to 300 %), ±1 %
- Frequency: 3.5 to 75 Hz
- Power: ±1 %

Power supply

- Nominal voltage: 12/24 V DC
- Operating range: 6.5 to 36 V DC
- Load dump protection: ISO16750-2
- Measuring range: 0 to 36 V DC

Inputs and outputs

- Digital inputs: 12 x (max. +36 V, min. -24 V)
- Digital outputs:
 - 2 x (15 A inrush, 3 A continuously)
 - 10 x (2 A inrush, 0.5 A continuously)
 - Common: 12/24 V DC
- 4 x analogue inputs
- 2 x analogue outputs
- CAN bus A and B
- RS-485 1 and 2
- RJ-45 Ethernet
- USB (service port)

Environment

- Operating temperature: -40 to +70 °C (-40 to +158 °F)
- Storage temperature: -40 to +85 °C (-40 to +185 °F)
- Altitude: 0 to 4000 m
- Humidity: 20/55 °C at 95 % RH
- Protection degree: IP65 in panel, IP20 on terminals
- Pollution degree 2
- Self-extinguishing plastic

Approvals

- CE



More information

See www.deif.com for the most recent approvals.

Protections

- 2 x Reverse power.....ANSI 32R
- 2 x Fast over-current.....ANSI 50P
- 4 x Over-current.....ANSI 51
- 1 x Voltage-dependent over-current.....ANSI 50V
- 2 x Over-voltage.....ANSI 59P
- 3 x Under-voltage.....ANSI 27P
- 3 x Over-frequency.....ANSI 81O
- 3 x Under-frequency.....ANSI 81U
- 1 x Unbalanced voltage.....ANSI 47
- 1 x Unbalanced current.....ANSI 46
- 1 x Under-excitation or var import.....ANSI 32RV
- 1 x Over-excitation or var import.....ANSI 32FV
- 5 x Overload.....ANSI 32F
- 1 x Neutral current.....ANSI 51N
- 3 x Busbar over-voltage.....ANSI 59P
- 4 x Busbar under-voltage.....ANSI 27P
- 3 x Busbar over-frequency.....ANSI 81O
- 3 x Busbar under-frequency.....ANSI 81U
- 1 x Low auxiliary supply.....ANSI 27DC
- 1 x High auxiliary supply.....ANSI 59DC
- Breaker open failure.....ANSI 52BF
- Breaker close failure.....ANSI 52BF
- Breaker position failure.....ANSI 52BF
- 1 x Phase sequence error.....ANSI 47
- 1 x Emergency stop
- 1 x De-load error
- 1 x Hz/V failure
- 1 x Not in Auto
- 1 x PV breaker external trip
- Synchronisation failure alarms

For more information:

DEIF A/S
Frisenborgvej 33, 7800 Skive, Denmark
Tel.: +45 9614 9614, info@deif.com
www.deif.com

