



AGC 150

Basic knowledge



Synchronizing Controllers



GPC-3
Base mounted
Non-Power Management



AGC 200
Front mounted
Standard Power Management



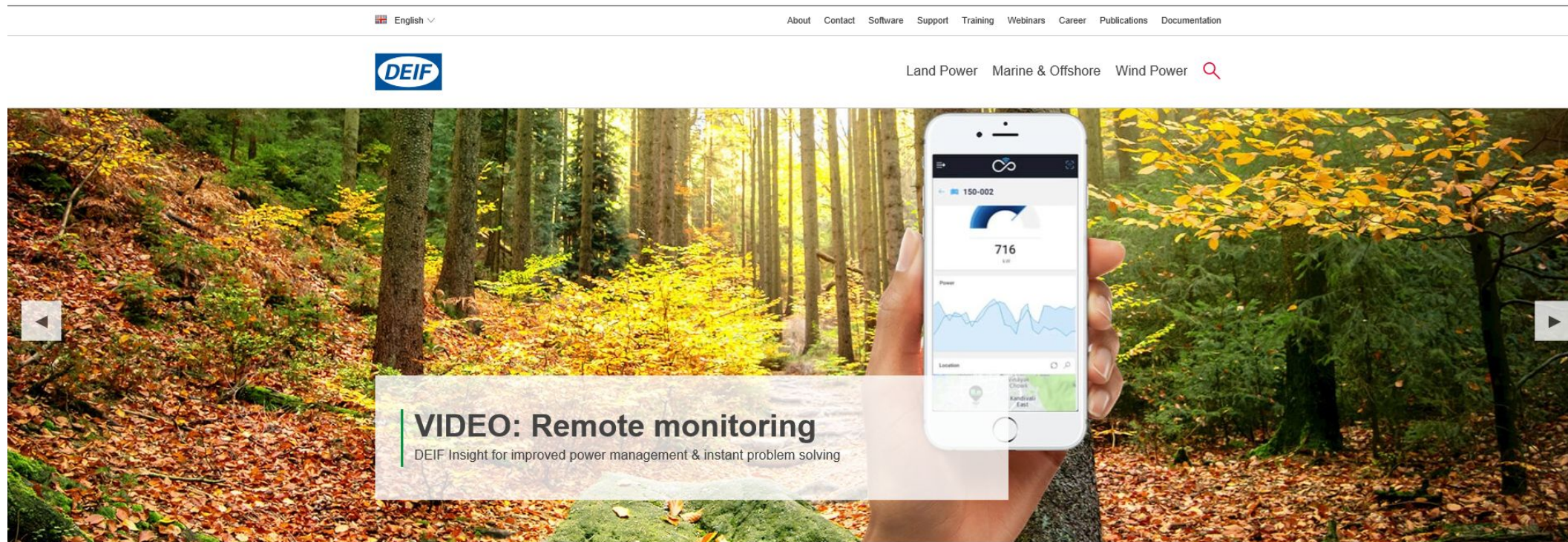
AGC-4
Base mounted
Custom Power Management



AGC 150
Front mounted
Simple Power Management

Documentation


www.deif.com contains all manuals for the controllers



Maximise your business


Award-winning global supplier of innovative power management solutions, engine & genset controllers, switchboard equipment, marine bridge instrumentation and renewable energy control solutions.

Documentation



Land PowerMarine & OffshoreWind Power

Products / AGC 150AGC 150



AGC 150 - Advanced Genset Controller

The AGC 150 is a genset controller containing all necessary functions for control and protection of a genset. The slim design makes the controller suitable for paralleling even small gensets thus the AGC 150 is integrable in nearly all types of gensets.

Pages

[WEBINAR: AGC 150 Produktvorstellung](#) - [WEBINAR: AGC 150](#)

Subsegments

[INDUSTRY: First-mover in hybrid microgrid solutions](#) - [INDUSTRY: Naval vessels](#) - [INDUSTRY: Hydro](#)

DescriptionFeaturesVideos & MediaDocumentation

Documents

+ Brochures/Handouts

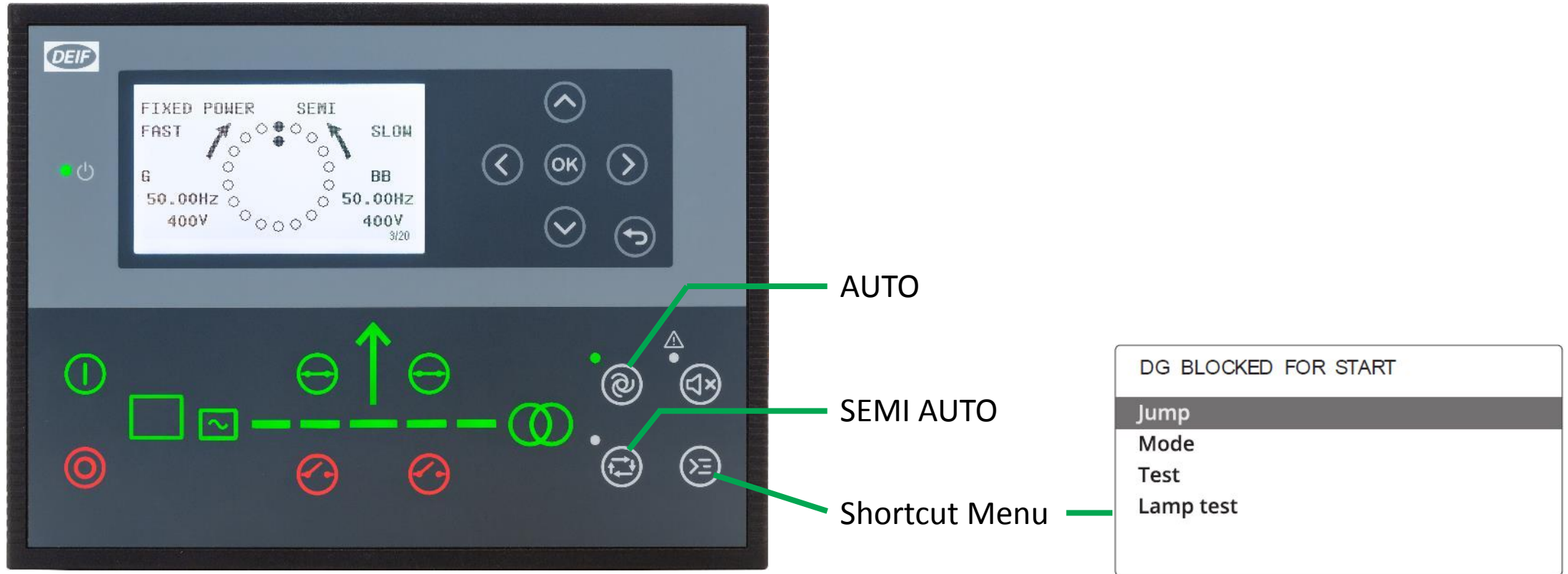
+ Data Sheet

+ Designer's Handbook

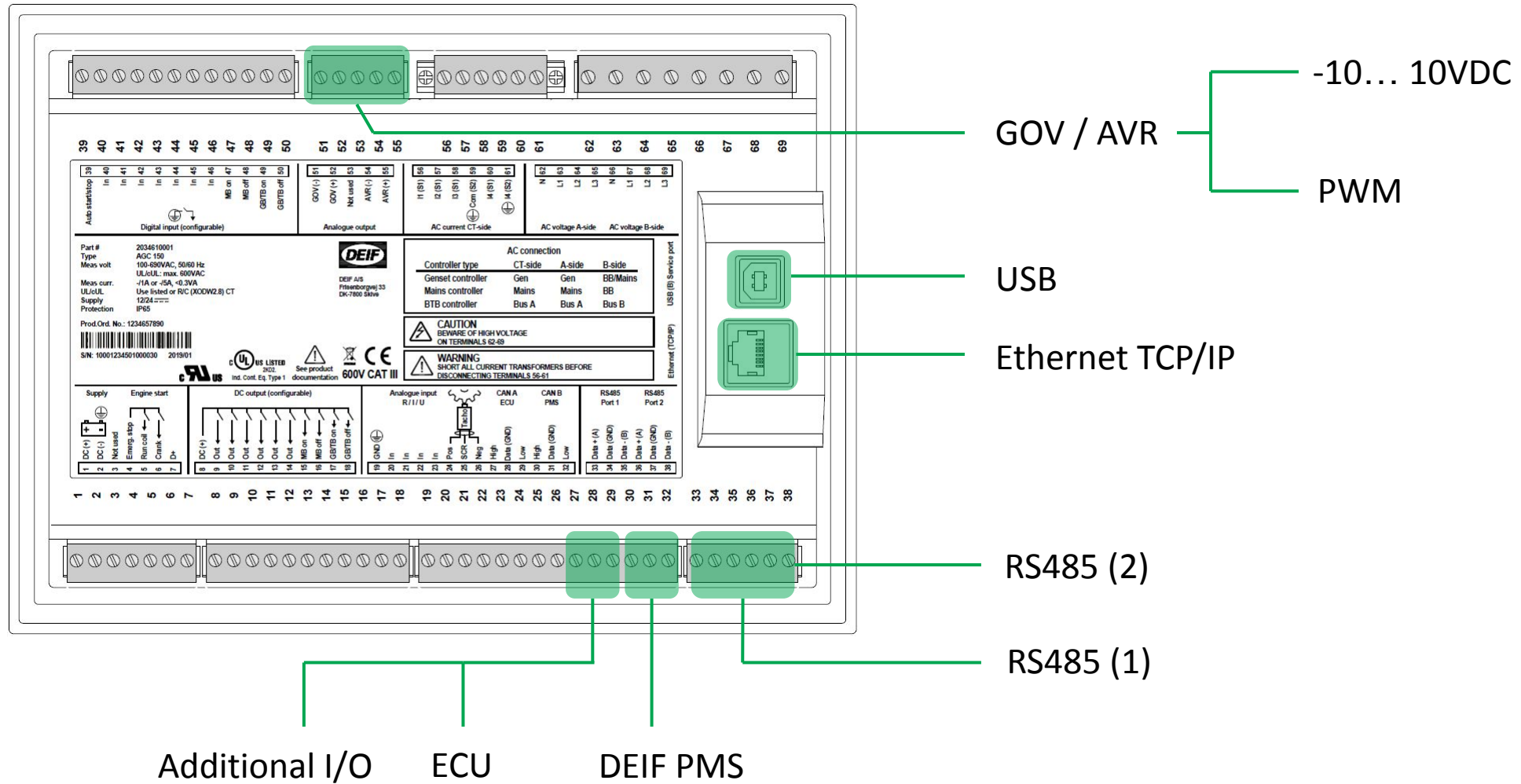
+ Installation Instructions

+ Operator's Manual

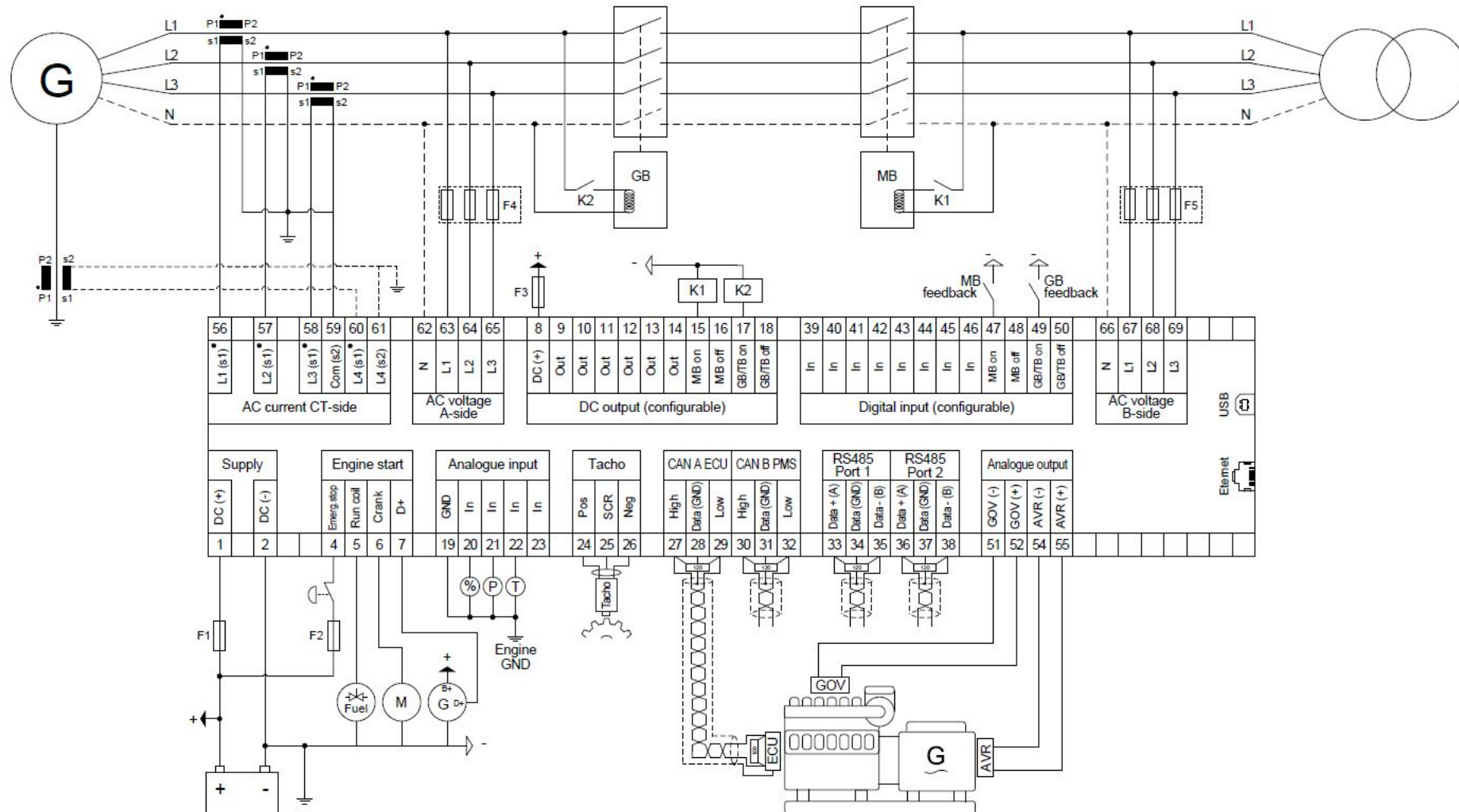
AGC 150



AGC 150

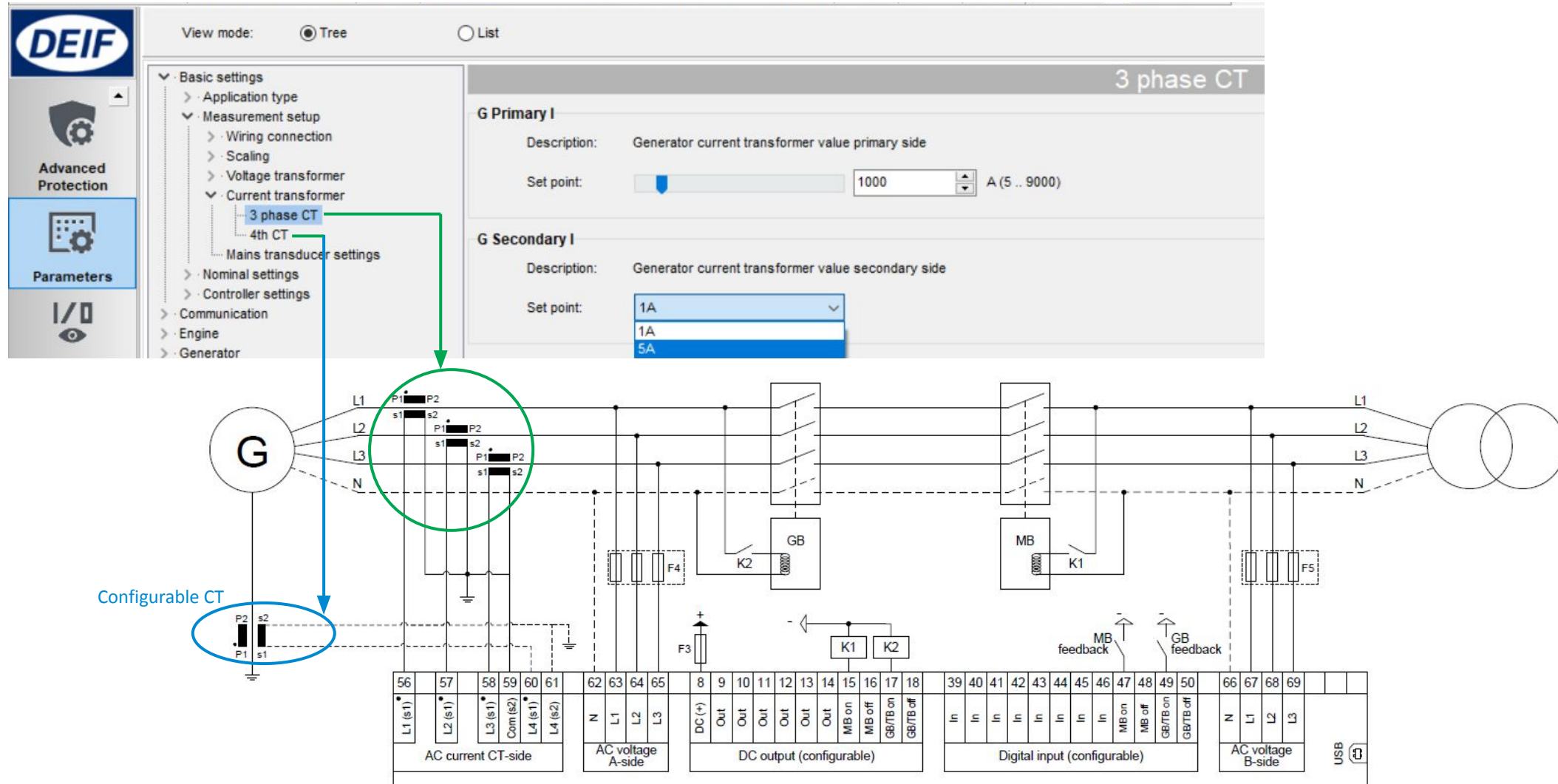


Typical wiring



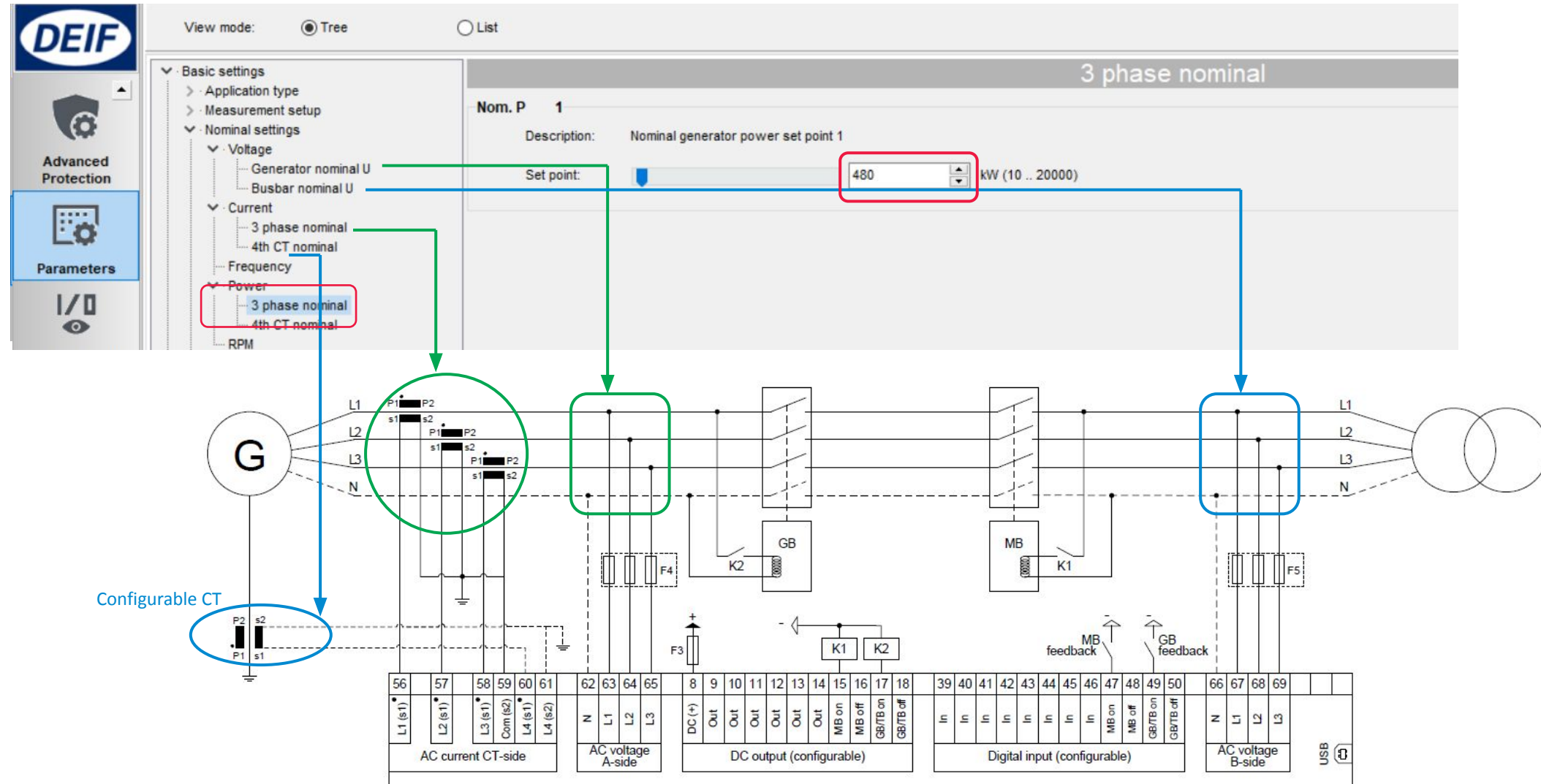
Basic Settings

Setup Current Transformer



Basic Settings

Nominal settings



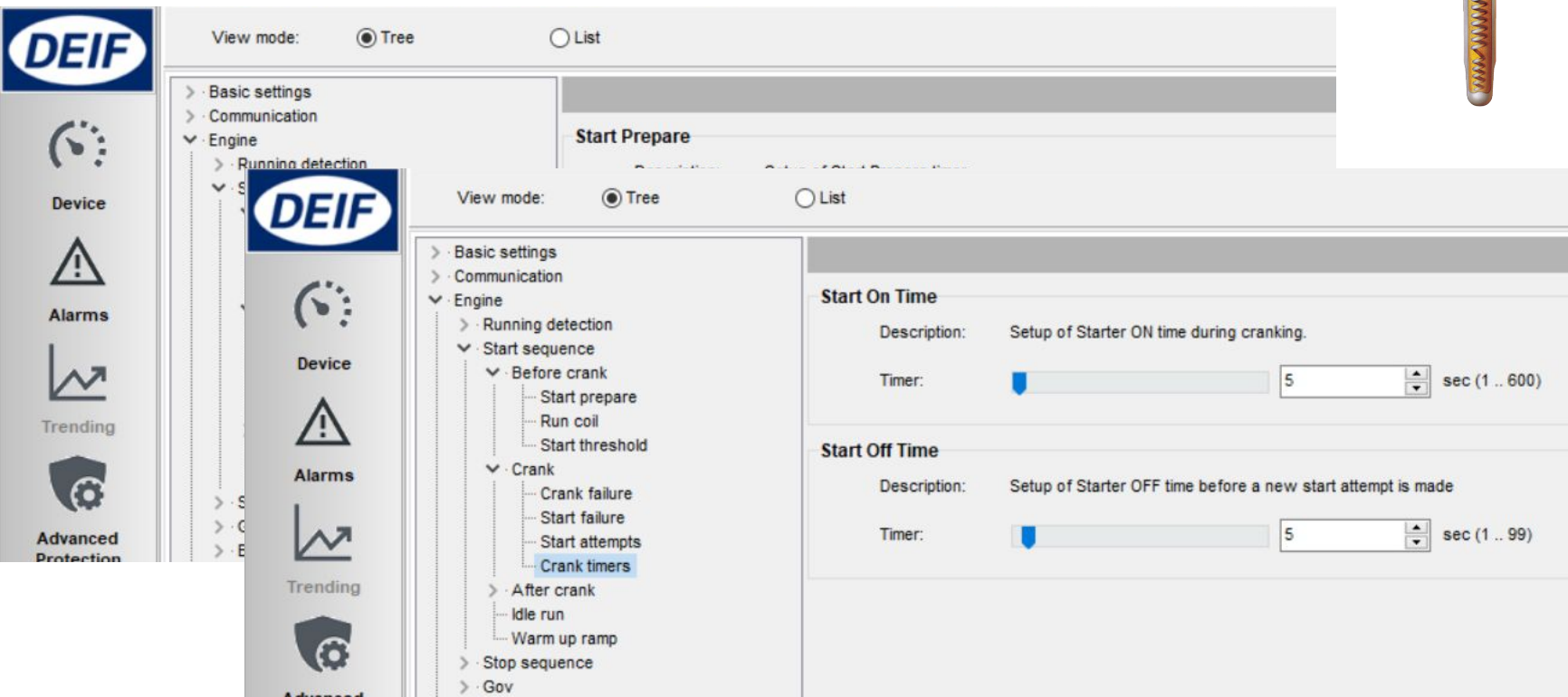
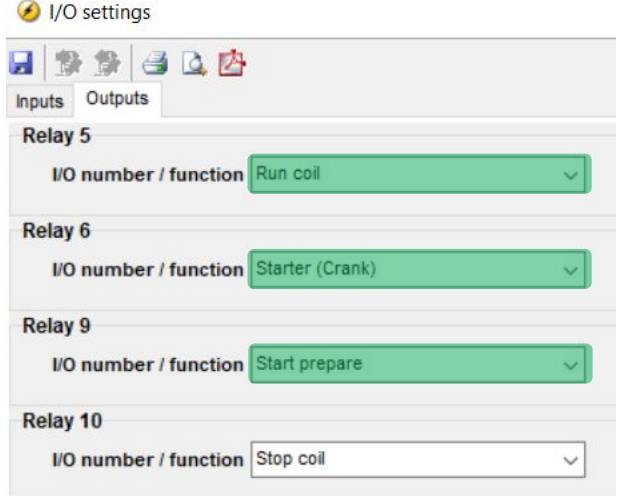
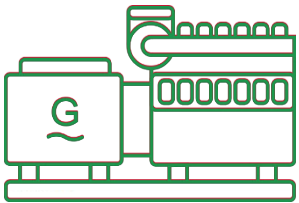
Start Sequence

1. Before starting, **start prepare** ON (Relay 9). Can be used to activate pre-heating element.
If not required, timer can be changed to 0s to reduce starting time.
2. Shortly after, **Starter/crank** (relay 6) and **Run coil** (relay 5), both ON.
Once running feedback detected, **Starter/crank** is deactivated.
3. **Run coil** activates continuously all the time, for the duration of engine running.



Glow plug

starting
running



Generator Protection

Checkmark [✓] = enable

The screenshot displays the DEIF software interface for generator protection configuration. On the left is a navigation sidebar with icons for Device, Alarms, Trending, and Advanced Protection, with a 'Parameters' section at the bottom. The main area is divided into a tree view on the left and a detailed settings panel on the right. The tree view shows a hierarchy of settings, with 'Generator' expanded to show 'Power protections', where 'Reverse power' is selected. The settings panel on the right lists various protection functions: Over-voltage, Over-current, Earth fault inverse time over-current, Over-frequency, Under-frequency, and Reverse power. Below these, two specific reverse power protection levels are configured. Level 1 is 'Reverse power protection level 1 (ANSI 32)' with a set point of -5%, a timer of 10 seconds, and a failclass of 'Trip GB'. Level 2 is 'Reverse power protection level 2 (ANSI 32)' with identical settings. Each level has a checkmark in the '-P>' column, indicating it is enabled. At the bottom right, a green box contains the text 'And many more'.

View mode: ☒ Tree ☐ List

Basic settings
Communication
Basic settings
Communication
Basic settings
Communication
Basic settings
Communication
Basic settings
Communication
Engine
Generator
AC configuration
AVR
Voltage protections
Current protections
Frequency protections
Frequency detection type
Over-frequency
Under-frequency
Power protections
Overload
Reverse power
Capability curve
Reactive power protections
Busbar
Mains
Breakers
Synchronisation
Power set points
Power management
I/O settings
Functions
Alternative configuration

Over-voltage
Over-current
Earth fault inverse time over-current
Over-frequency
Under-frequency
Reverse power

-P> 1
☒ Description: Reverse power protection level 1 (ANSI 32)
Set point: -5 % (-200 .. 0)
Timer: 10 sec (0.1 .. 100)
Failclass: Trip GB

-P> 2
☒ Description: Reverse power protection level 2 (ANSI 32)
Set point: -5 % (-200 .. 0)
Timer: 10 sec (0.1 .. 100)
Failclass: Trip GB

And many more

Generator Protection

Fail class:



Trip + stop = GB trip, engine stop after cooling down

Safety stop = Extra genset start up & replace faulty genset

Trip MB/GB = In application “Single DG with mains”, will trip MB instead

I/O

DIGITAL INPUT

DIGITAL OUTPUT

ANALOG INPUT

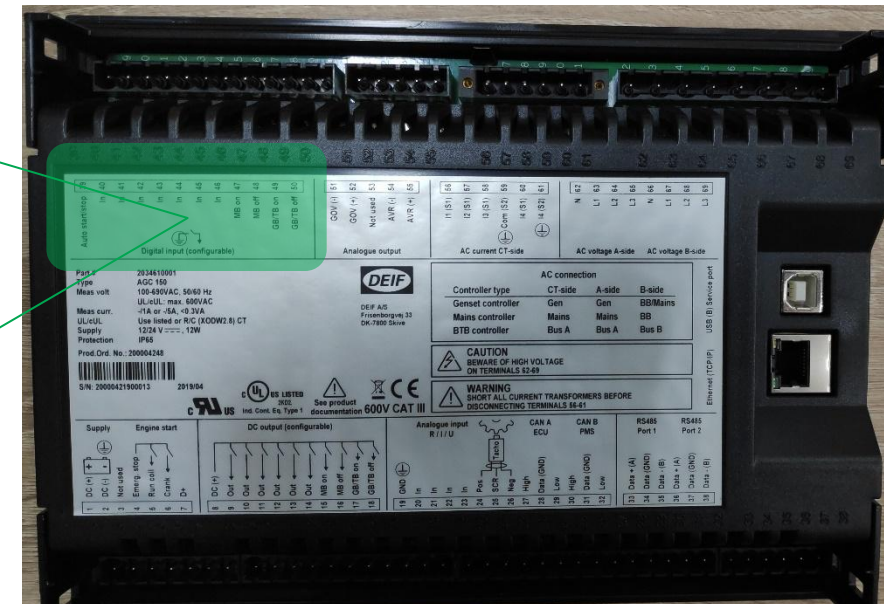
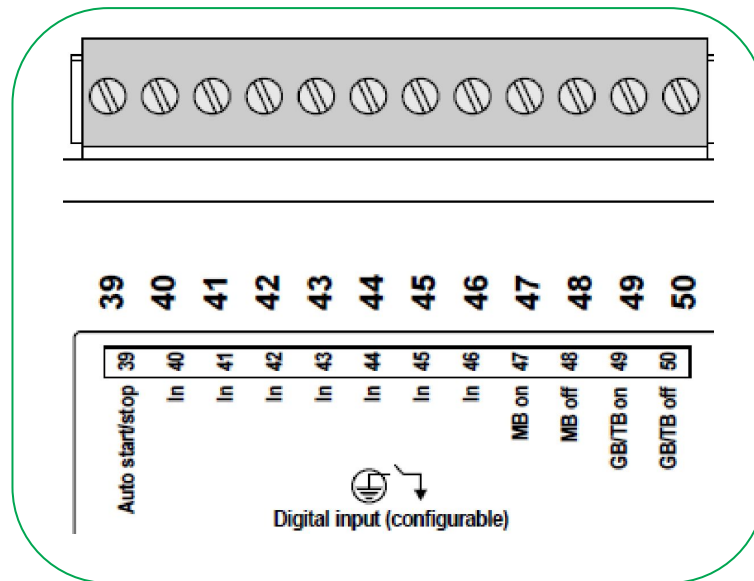


Digital Input

12 digital inputs, activated by negative (-) VDC signal

Each can be configured as:

1. **Alarms** ☐ setup by Display or USW
2. **Function** ☐ setup by USW only



Digital Input

1. Digital input as **alarm**

Parameter > I/O settings > Inputs > Digital inputs

The screenshot displays the DEIF parameter configuration interface. The left sidebar shows the navigation tree with 'Parameters' selected. The main area is titled 'Digital input' and shows settings for three digital inputs: 39, 40, and 41. Each input has a checkbox to enable it, a description, a timer value (10 seconds), and a failclass dropdown menu. Annotations highlight the enable checkbox for Digital input 39 with the text '[√] to enable', the failclass dropdown menu for Digital input 40 with the text 'Action', and the timer value for Digital input 39 with the text 'Set delay'.

View mode: ☒ Tree ☐ List

DEIF

Device

Alarms

Trending

Advanced Protection

Parameters

I/O

Basic settings

Communication

Engine

Generator

Busbar

Mains

Breakers

Synchronisation

Power set points

Power management

I/O settings

Inputs

Digital input

Outputs

External I/O

Functions

Alternative configuration

USW specific parameters

Digital input 39

☒ Description: Setup of digital input on terminal 39

Timer: 10 sec (0 .. 100)

Failclass: Warning

Digital input 40

☐ Description: Setup of digital input on terminal 40

Timer: 10 sec (0 .. 100)

Failclass: Warning

Digital input 41

☐ Description: Setup of digital input on terminal 41

Timer: 10 sec (0 .. 100)

Failclass: Warning

Set delay

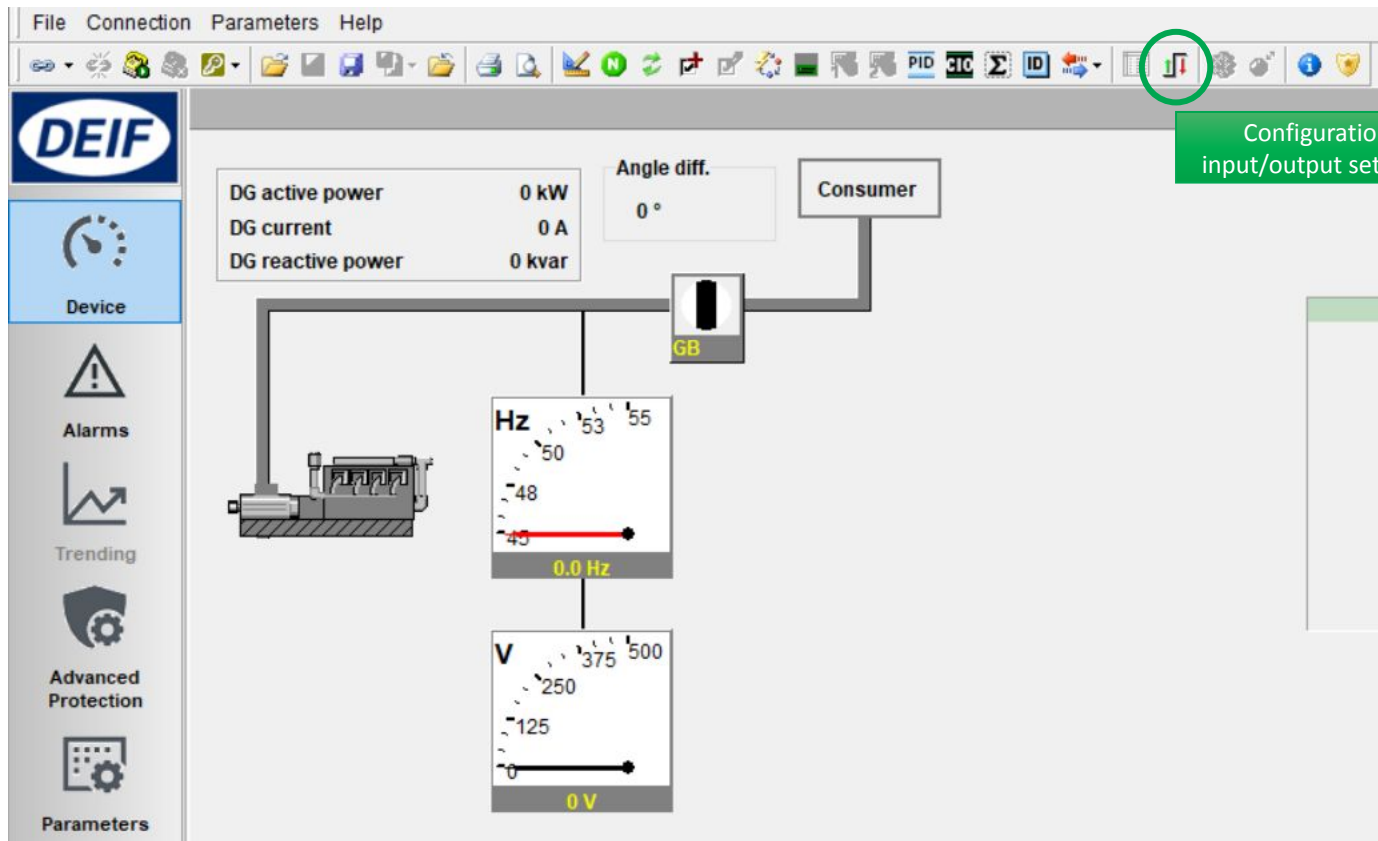
Action

[√] to enable

Digital Input

2. Digital input as **Function**

Click icon *I/O settings*



The screenshot shows the 'I/O settings' dialog box. The 'Inputs' tab is selected. The dialog box contains several sections, each with a dropdown menu for 'I/O number / function'. The sections are: Start enable (Not used), Auto start/stop (Dig. input 39, Term 39), Remote Start (Not used), Remote Stop (Not used), Alternative start (Not used), Remove starter (Not used), Low speed (Not used), Binary running detection (Not used), and Remote GB On (Not used). A 'Close' button is located at the bottom right of the dialog box.

Digital Input

Default assignment

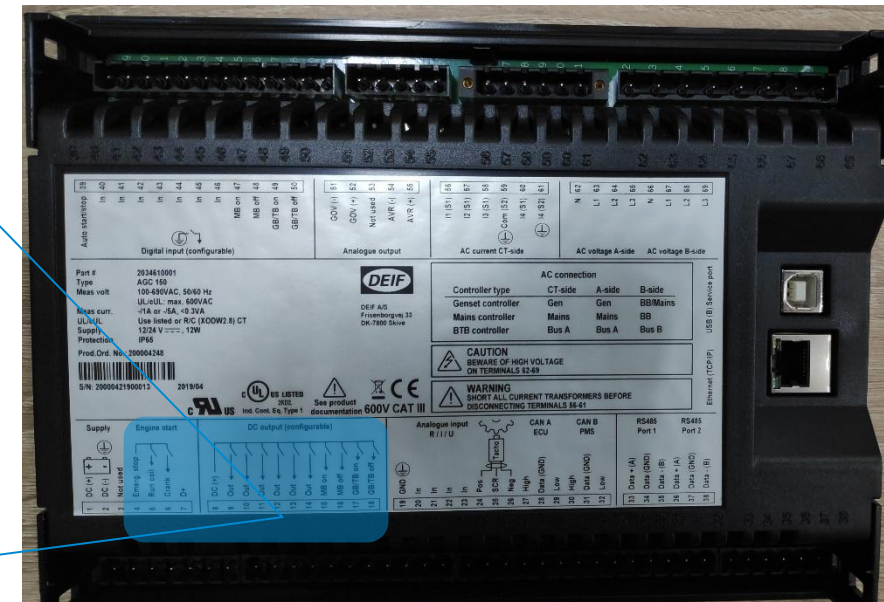
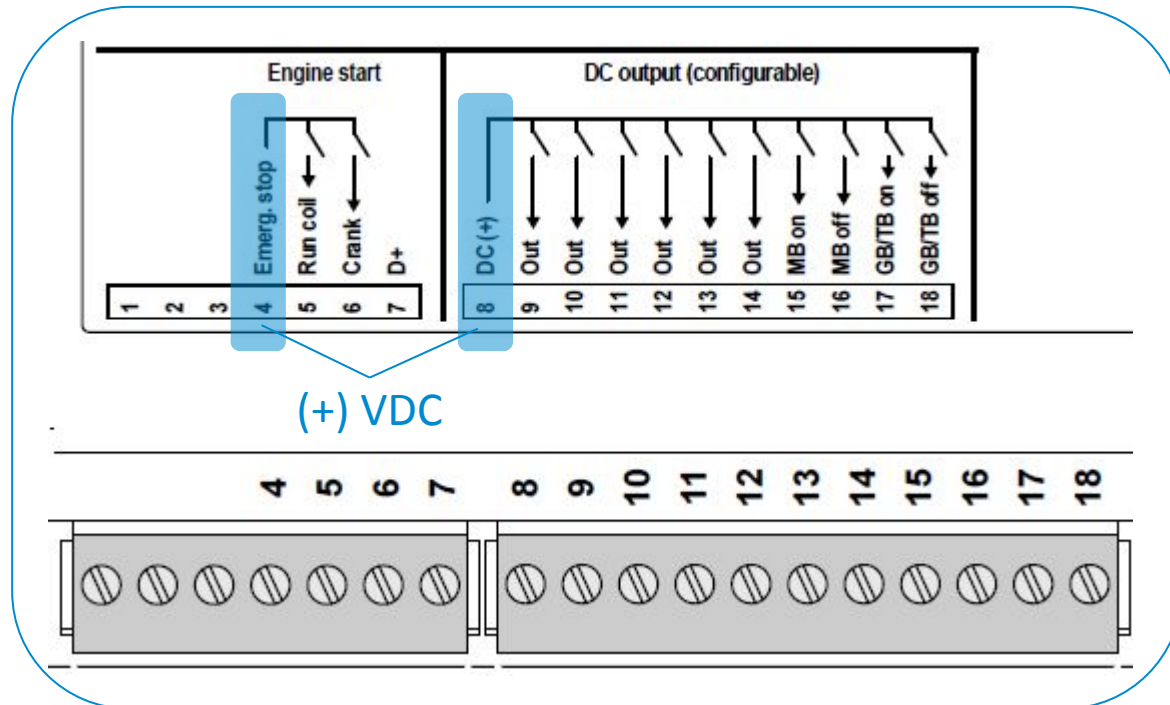
Terminal no.	Function	Remarks
39	Auto start/stop	For remote start signal
40	Not used	
41	Not used	
42	Not used	
43	Not used	
44	Not used	
45	Not used	
46	Not used	
47	Status MB ON	For application with Mains
48	Status MB OFF	For application with Mains
49	Status GB ON	
50	Status GB OFF	

Digital Output

12 digital outputs (DC outputs)

Require common positive (+) VDC

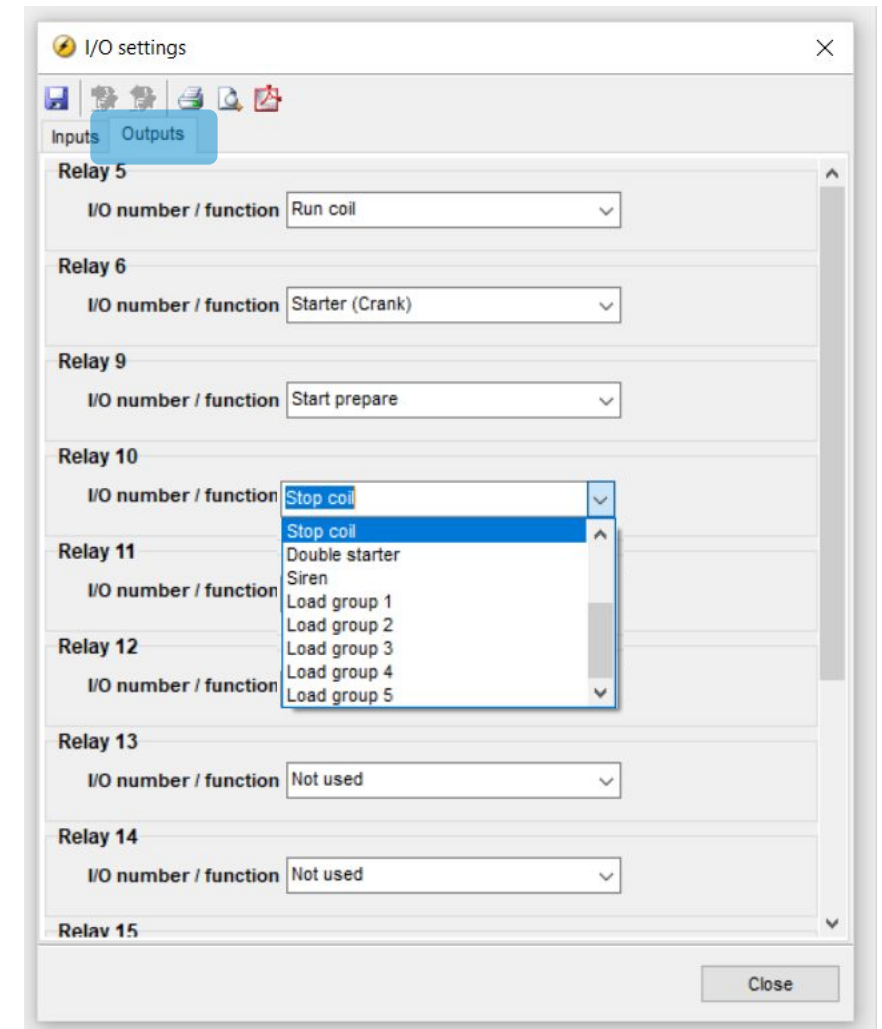
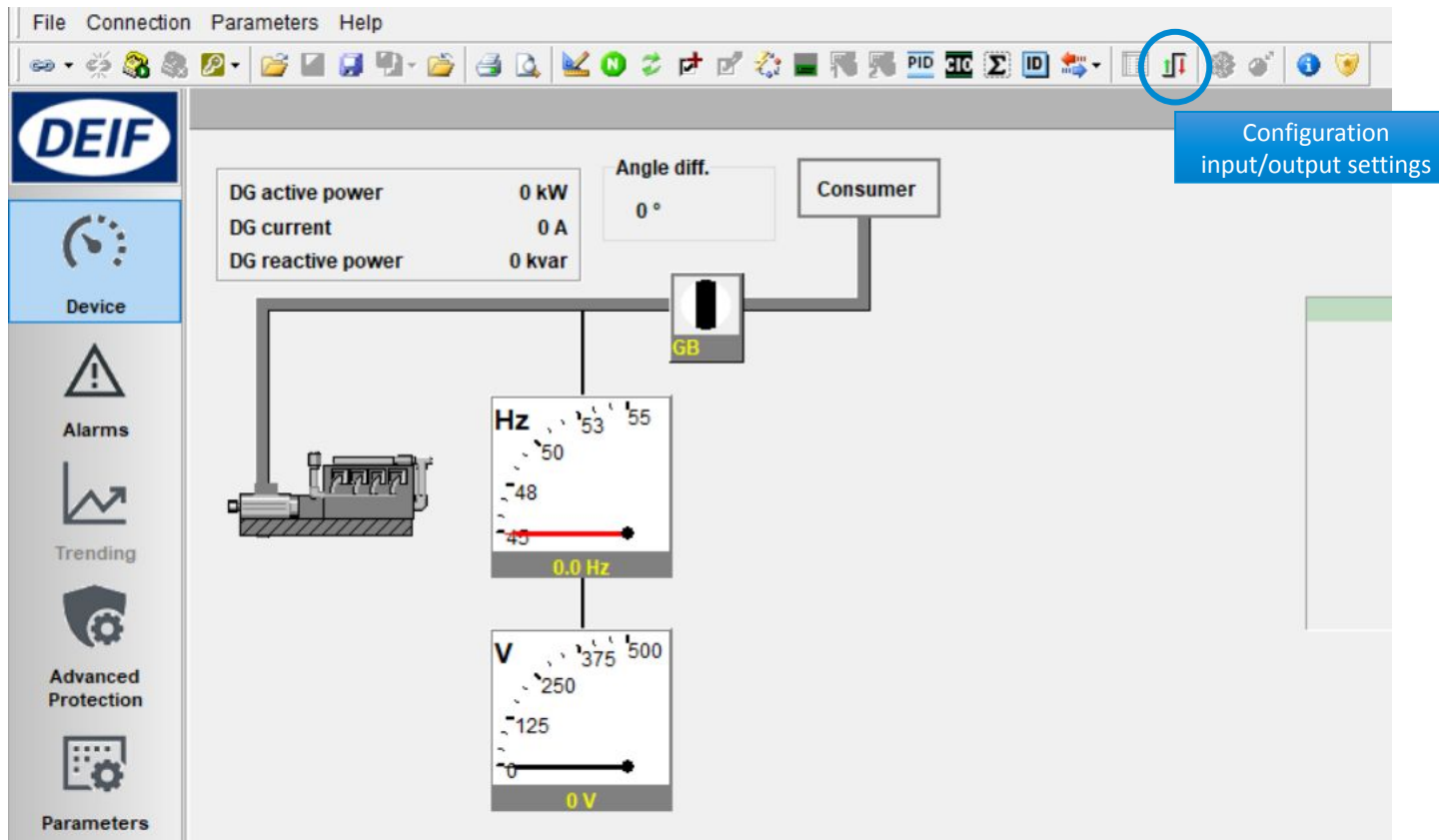
Configuration by USW



Digital Output

Setup digital output

Click icon *I/O settings*



Digital output

Default assignment:

Terminal no.	Function	Remarks
4	Common (+) for DO 5-6	Also serves as Emergency stop
5	Run coil	
6	Starter (crank)	
-----	-----	-----
8	Common (+) for DO 9-18	
9	Start prepare	
10	Stop coil	
11	Status OK	
12	Horn	
13	Not used	
14	Not used	
15	MB ON	For application with Mains
16	MB OFF	For application with Mains
17	GB ON	
18	GB OFF	

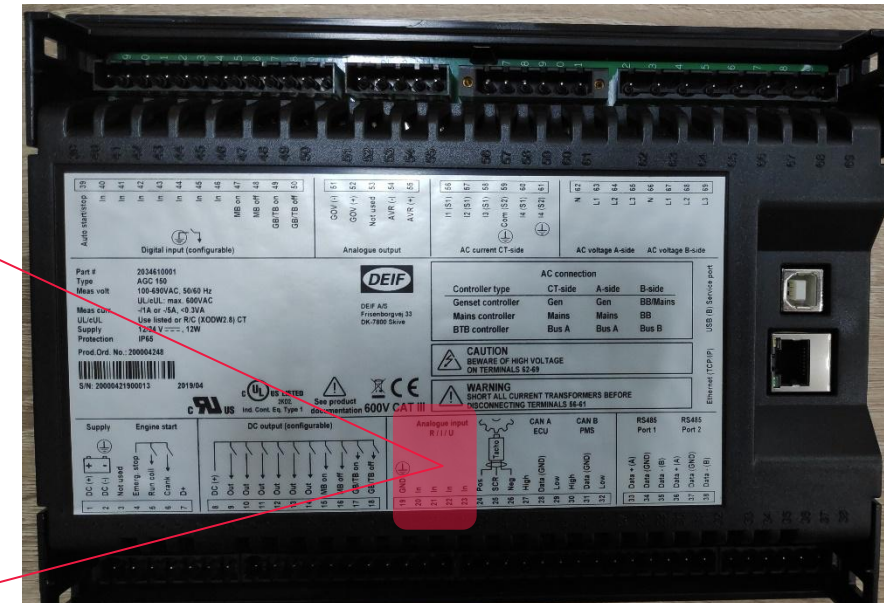
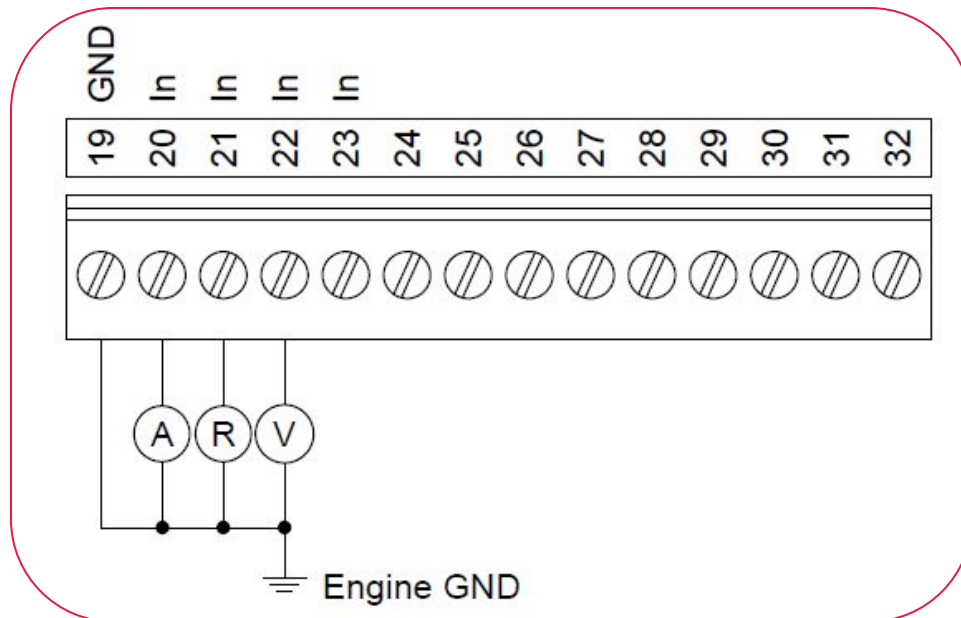
Analog Input

4 multi inputs

Selectable for:

- 4-20 mA - RMI Oil Pressure
- 0-10 VDC - RMI Water Temperature
- PT100 - RMI Fuel Level
- Binary input

Setup by USW



Analog Input

Configuring multi inputs

DEIF

Advanced Protection

Parameters

Inputs/Outputs

I/O

Multi Input

Options

Logs

Translations

Input 20 Input 21 Input 22 Input 23

Input type: RMI oil pressure

Scaling: V 1/10

Selected curve

Output vs. Input graph showing a linear relationship. Legend: 40, 50, 60, 80, 100, 110, 115, 120.

Configurable curve

Set point	Input	Output
Set point 1	10	40
Set point 2	44.9	50
Set point 3	81	60
Set point 4	134.7	80
Set point 5	184	100
Set point 6	200	110
Set point 7	210	115
Set point 8	220	120

RMI type: Configurable

Bar/celsius

1st Alarm

Alarm when input is: High

Set point: 5

Delay: 10 Sec.

Fail class: Warning

Output A: Not used

Output B: Not used

Auto acknowledge: OFF

Inhibits: Inhibits...

2nd Alarm

Alarm when input is: High

Set point: 5

Delay: 10 Sec.

Fail class: Warning

Output A: Not used

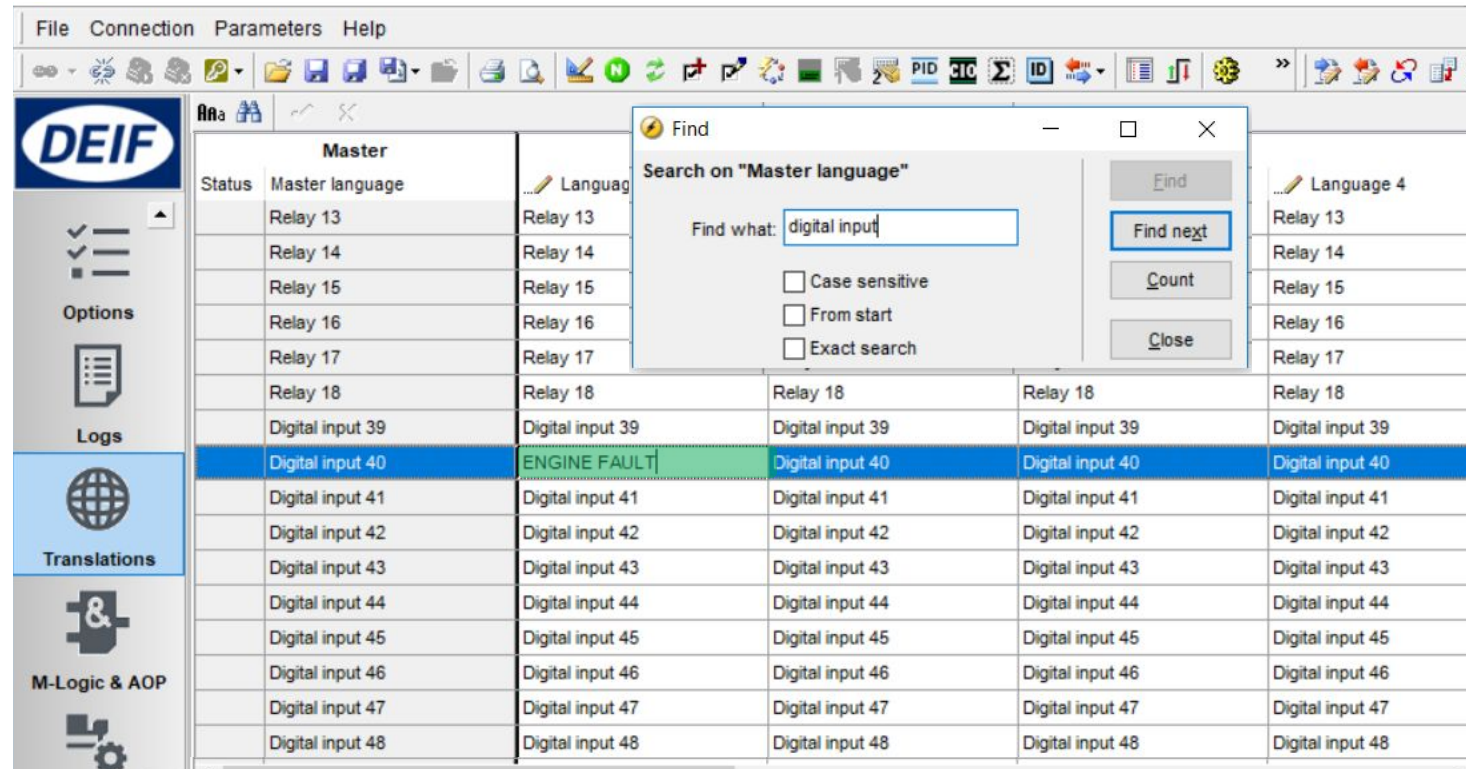
Output B: Not used

Auto acknowledge: OFF

Inhibits: Inhibits...

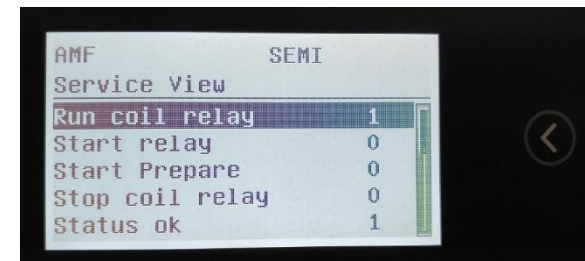
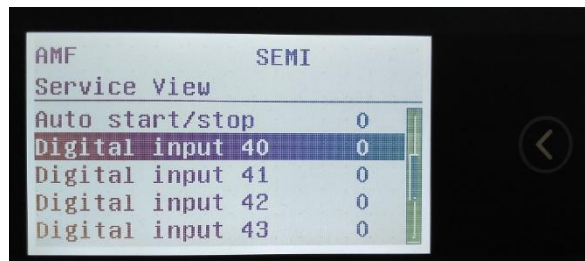
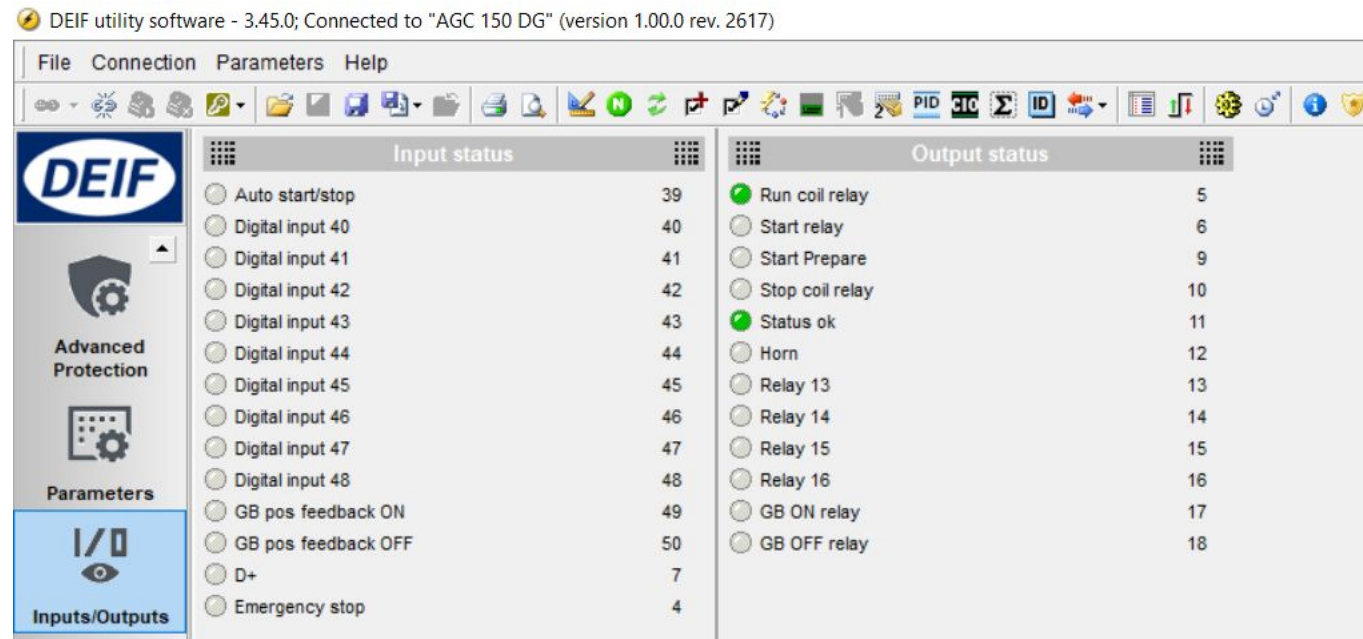
Input & Output Text

To change text, use **Translations**



Input & Output Status

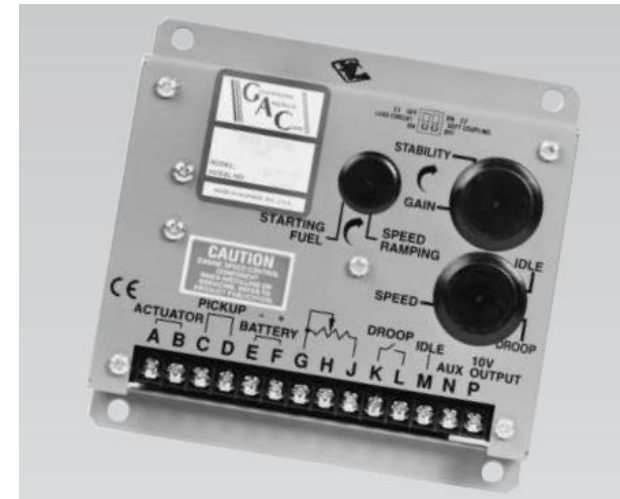
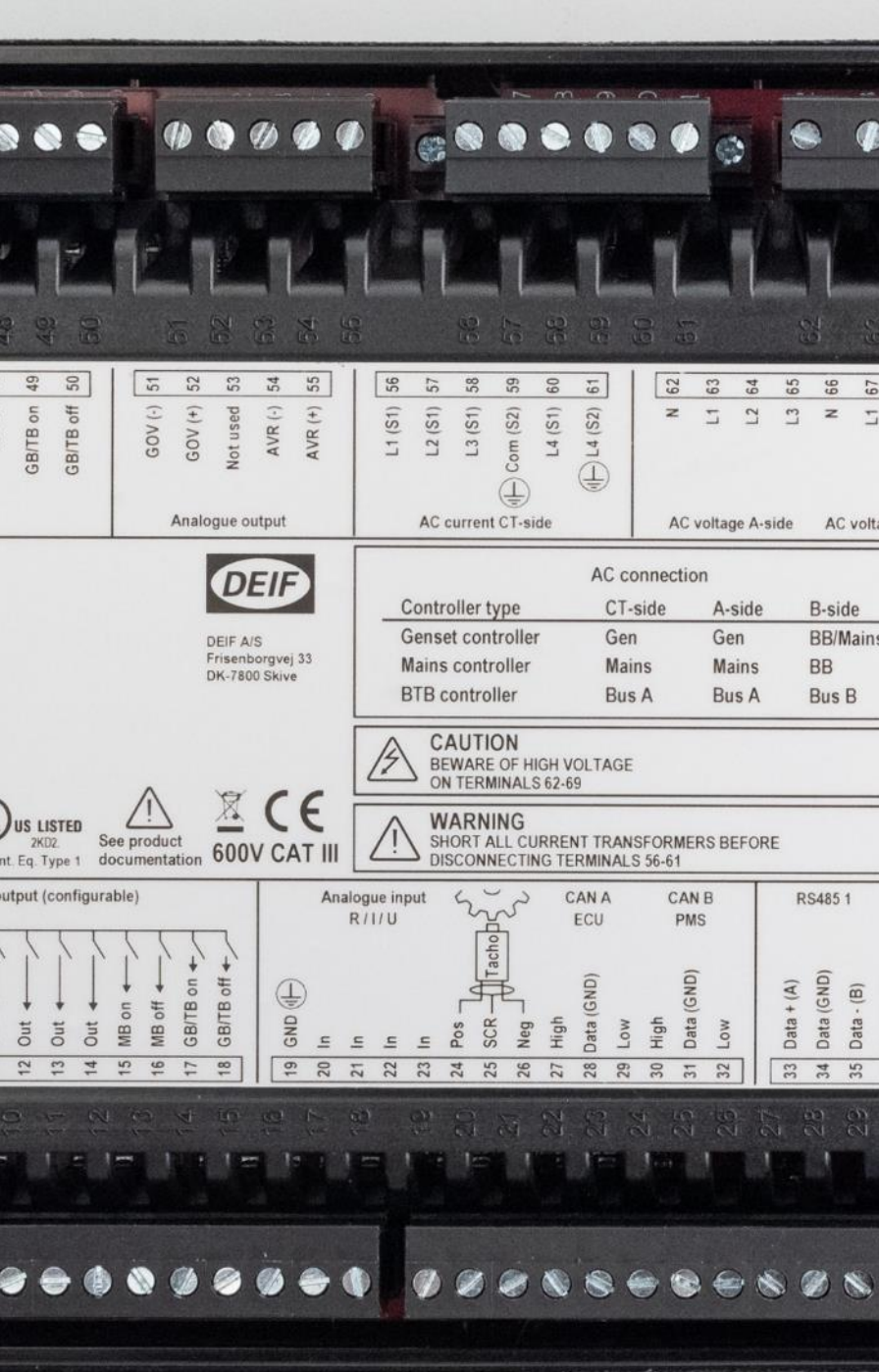
Any digital input/output can be monitored through USW and display



Analog Regulation

SPEED REGULATION - ANALOG

VOLTAGE REGULATION - ANALOG



Speed Regulation - Analog

1. Setup terminal analog output

Parameter > Engine > Gov > *General configuration*

View mode: ☒ Tree ☐ List

DEIF

Basic settings
Communication
Engine
 > Running detection
 > Start sequence
 > Stop sequence
 Gov
 > **General configuration**
 > Relay configuration
 > EIC configuration
 > Speed PID
 Manuel step
 Offset for control signal
 Regulation failure
 > Battery/Aux supply
 > Protections
 > Maintenance
 Shutdown Override
Generator

Reg. output GOV
Description: Selection of regulation output used for governor regulation
Set point: **Analogue**
Governor output
Description: Transducer selection number in case of analogue output for the speed governor
Output A: **Transducer 52**

Parameter "Reg. output GOV" (Channel 2781)
Set point: Analogue
Password level: service
Enable
High Alarm
Inverse proportional
Auto acknowledge
Inhibits...
Write OK Cancel

Set as analog
Set transducer 52

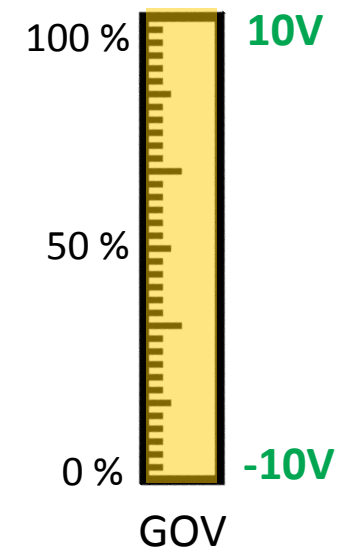
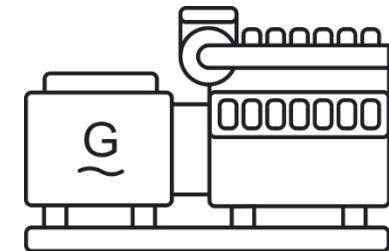
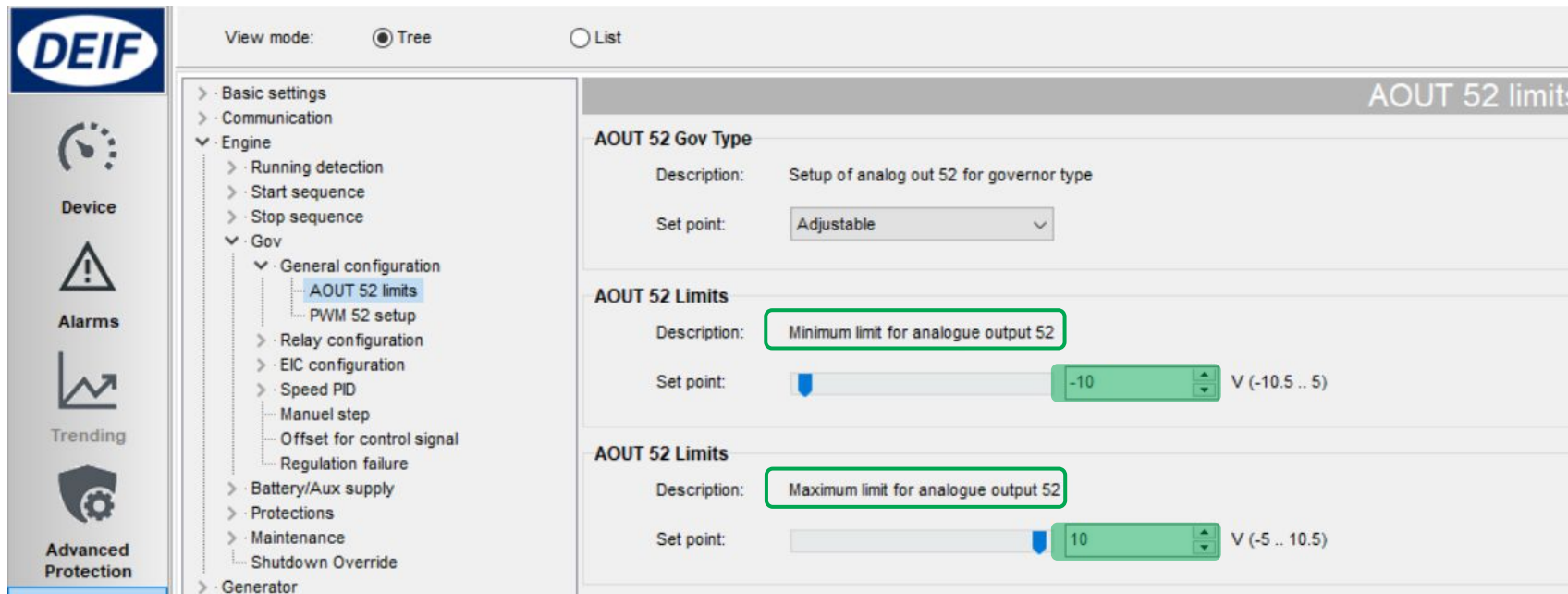
More setting

47	48	49	50	51	52	53	54	55	56	57	58	59	60
GOV (-)	GOV (+)	Not used	AVR (-)	AVR (+)	Analogue output								

Speed Regulation - Analog

2. Setting analog output range (VDC)

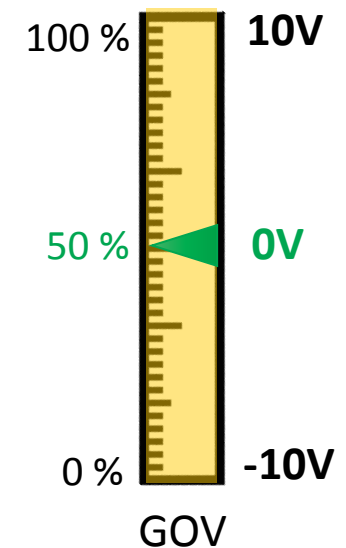
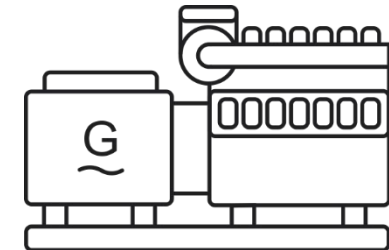
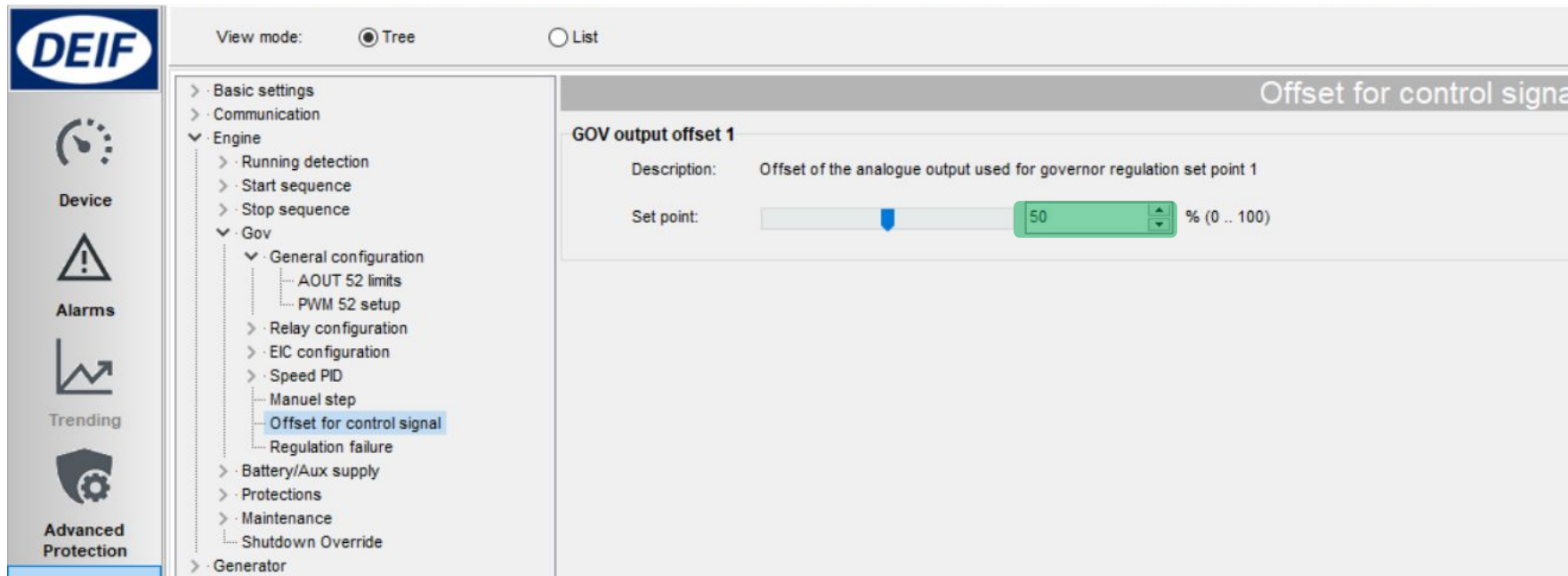
Parameter > Engine > Gov > General configuration > **AOUT 52 limits**



Speed Regulation - Analog

3. Setting offset / center

Parameter > Engine > Gov > *Offset for control signal*

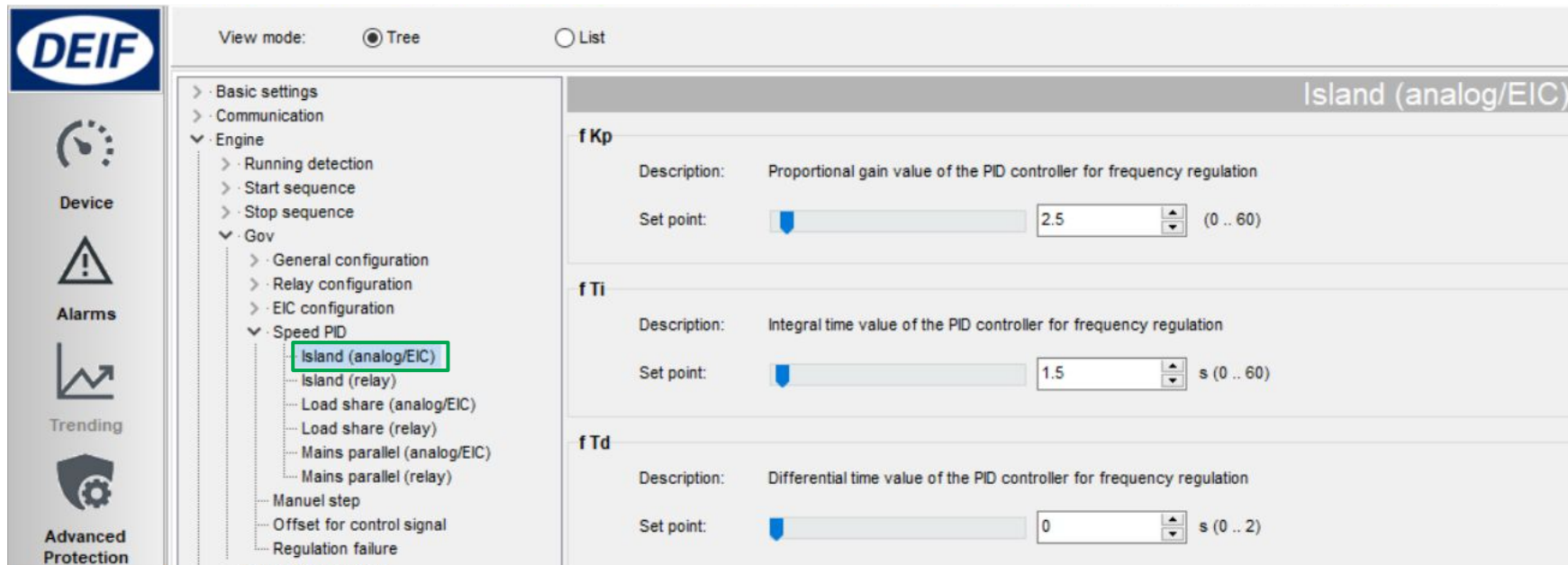
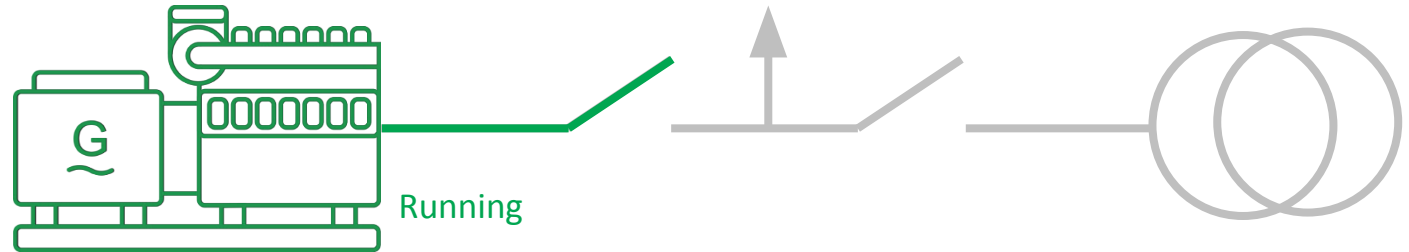


Speed Regulation – Analog Gain

1. PID Island

Parameter > Engine > Gov > Speed PID

> *Island (analog/EIC)*

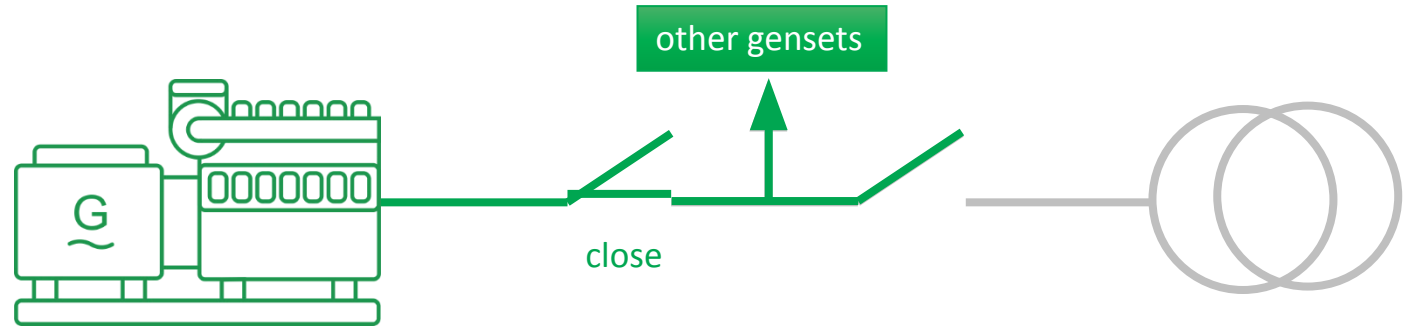


Speed Regulation – Analog Gain

2. PID Load sharing

Parameter > Engine > Gov > Speed PID

> *Load share (analog/EIC)*



The screenshot shows the DEIF control interface. On the left is a navigation tree with the following structure:

- Basic settings
- Communication
- Engine
 - Running detection
 - Start sequence
 - Stop sequence
 - Gov
 - General configuration
 - Relay configuration
 - EIC configuration
 - Speed PID
 - Island (analog/EIC)
 - Island (relay)
 - Load share (analog/EIC)**
 - Load share (relay)
 - Mains parallel (analog/EIC)
 - Mains parallel (relay)
 - Manuel step
 - Offset for control signal
 - Regulation failure

On the right, the configuration for 'Load share (analog/EIC)' is displayed:

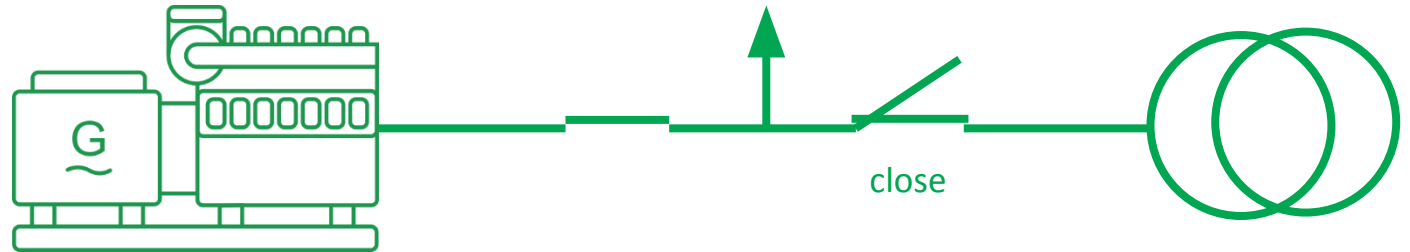
Load share (analog/EIC)	
P loadsh. f Kp	
Description:	Proportional gain value of the PID controller for load sharing
Set point:	2.5 (0 .. 60)
P loadsh. f Ti	
Description:	Integral time value of the PID controller for load sharing
Set point:	1.5 s (0 .. 60)
P loadsh. f Td	
Description:	Differential time value of the PID controller for load sharing
Set point:	0 s (0 .. 2)

Speed Regulation – Analog Gain

3. PID Mains parallel

Parameter > Engine > Gov > Speed PID

> *Mains parallel (analog/EIC)*



The screenshot shows the DEIF control interface. On the left is a navigation tree with the following structure:

- > Basic settings
- > Communication
- ▼ Engine
 - > Running detection
 - > Start sequence
 - > Stop sequence
 - ▼ Gov
 - > General configuration
 - > Relay configuration
 - > EIC configuration
 - ▼ Speed PID
 - Island (analog/EIC)
 - Island (relay)
 - Load share (analog/EIC)
 - Load share (relay)
 - Mains parallel (analog/EIC)**
 - Mains parallel (relay)
 - Manuel step
 - Offset for control signal
 - Regulation failure
 - > Battery/Aux supply

The main panel displays the configuration for 'Mains parallel (analog/EIC)'. It contains three sections:

- P Kp**
 - Description: Proportional gain value of the PID controller for power regulation
 - Set point: 2.5 (0 .. 60)
- P Ti**
 - Description: Integral time value of the PID controller for power regulation
 - Set point: 1.5 s (0 .. 60)
- P Td**
 - Description: Differential time value of the PID controller for power regulation
 - Set point: 0 s (0 .. 2)

Voltage Regulation - Analog

1. Setup terminal analog output

Parameter > Generator > AVR > *General configuration*

View mode: ☒ Tree ☐ List

DEIF

Device

Alarms

Trending

Advanced Protection

Parameters

Basic settings

Communication

Engine

Generator

AC configuration

AVR

General configuration

Relay configuration

DAVR configuration

Voltage PID

Manuel step

Offset for control signal

Regulation failure

Voltage protections

Current protections

Frequency protections

Power protections

Reactive power protections

Busbar

Mains

Breakers

Synchronisation

Power set points

Power management

IO settings

General configuration

Reg. output AVR

Description: Selection of regulation output used for AVR regulation

Set point: Analogue

AVR output

Description: Transducer selection number in case of analogue output for the voltage regulator

Output A: Transducer 55

Parameter "Reg. output AVR" (Channel 2782)

Set point: Analogue

Password level: service

Enable

High Alarm

Inverse proportional

Auto acknowledge

Inhibits...

Write OK Cancel

More setting

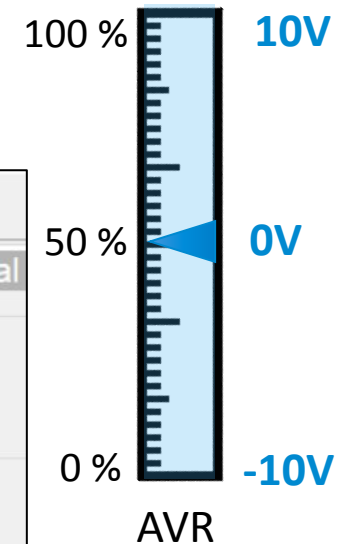
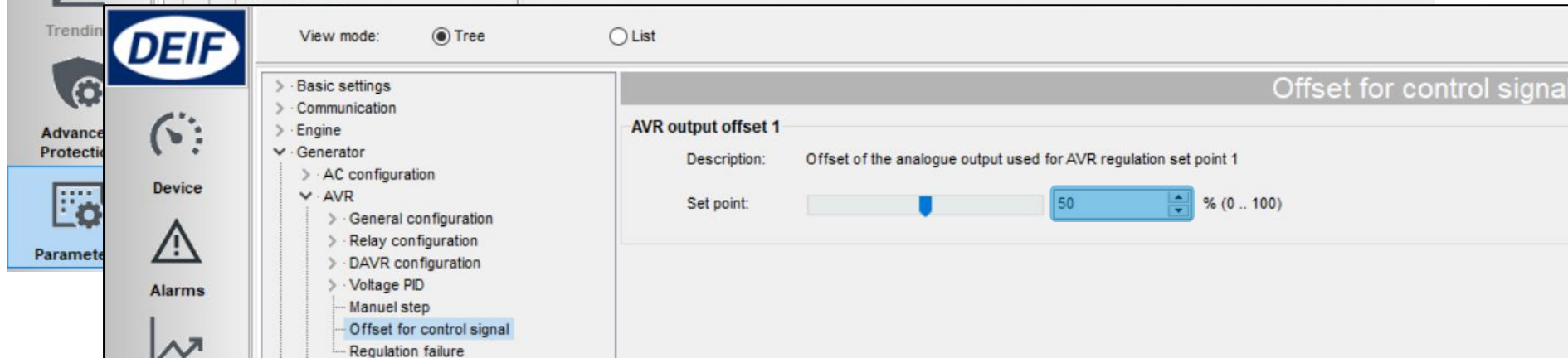
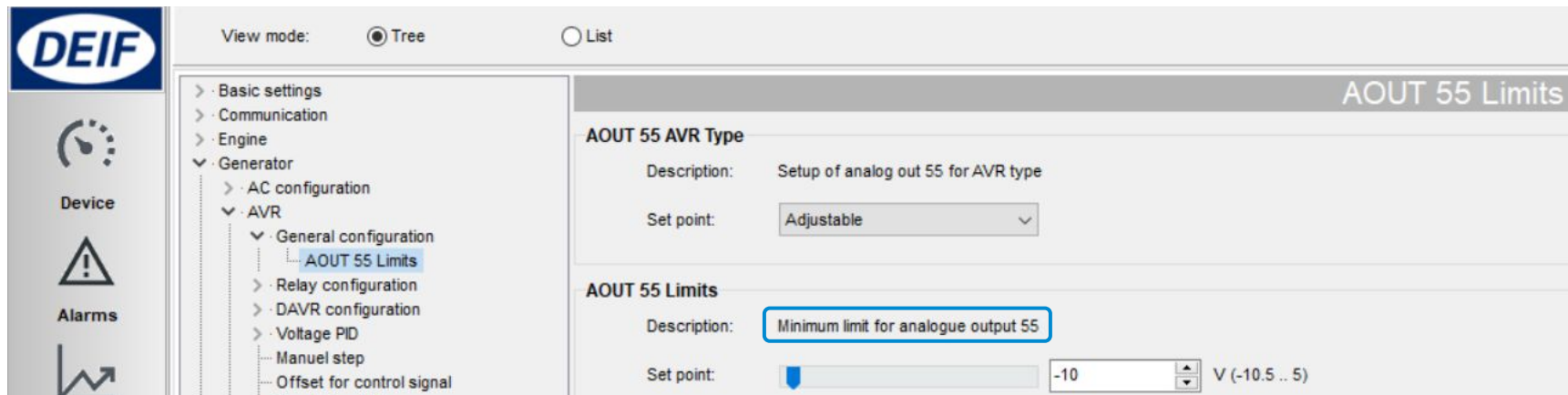
47	48	49	50	51	52	53	54	55	56	57	58	59	60
47	48	49	50	51	52	53	54	55	56	57	58	59	60
				GOV (-)	GOV (+)	Not used	AVR (-)	AVR (+)					
Analogue output													

Voltage Regulation - Analog

2. Setting analog output range & center

Parameter > Generator > AVR > General configuration > [AOUT 55 limits](#)

Parameter > Generator > AVR > [Offset for control signal](#)



Voltage Regulation – Analog Gain

Same principle with speed PID

Parameter > Generator > AVR > Voltage PID >

□ Island (analog/EIC)

□ Load share (analog/EIC)

□ Mains parallel (analog/EIC)

The screenshot displays the DEIF configuration software interface. On the left is a sidebar with icons for Device, Alarms, Trending, and Advanced Protection. The main area shows a tree view of the configuration hierarchy. The 'Voltage PID' section is expanded, showing three sub-panels: 'Island (analog/EIC)', 'Load share (analog/EIC)', and 'Mains parallel (analog/EIC)'. Each panel shows the 'U Kp' parameter. The 'Mains parallel (analog/EIC)' panel is the most detailed, showing the 'Q Kp', 'Q Ti', and 'Q Td' parameters with their descriptions and set points.

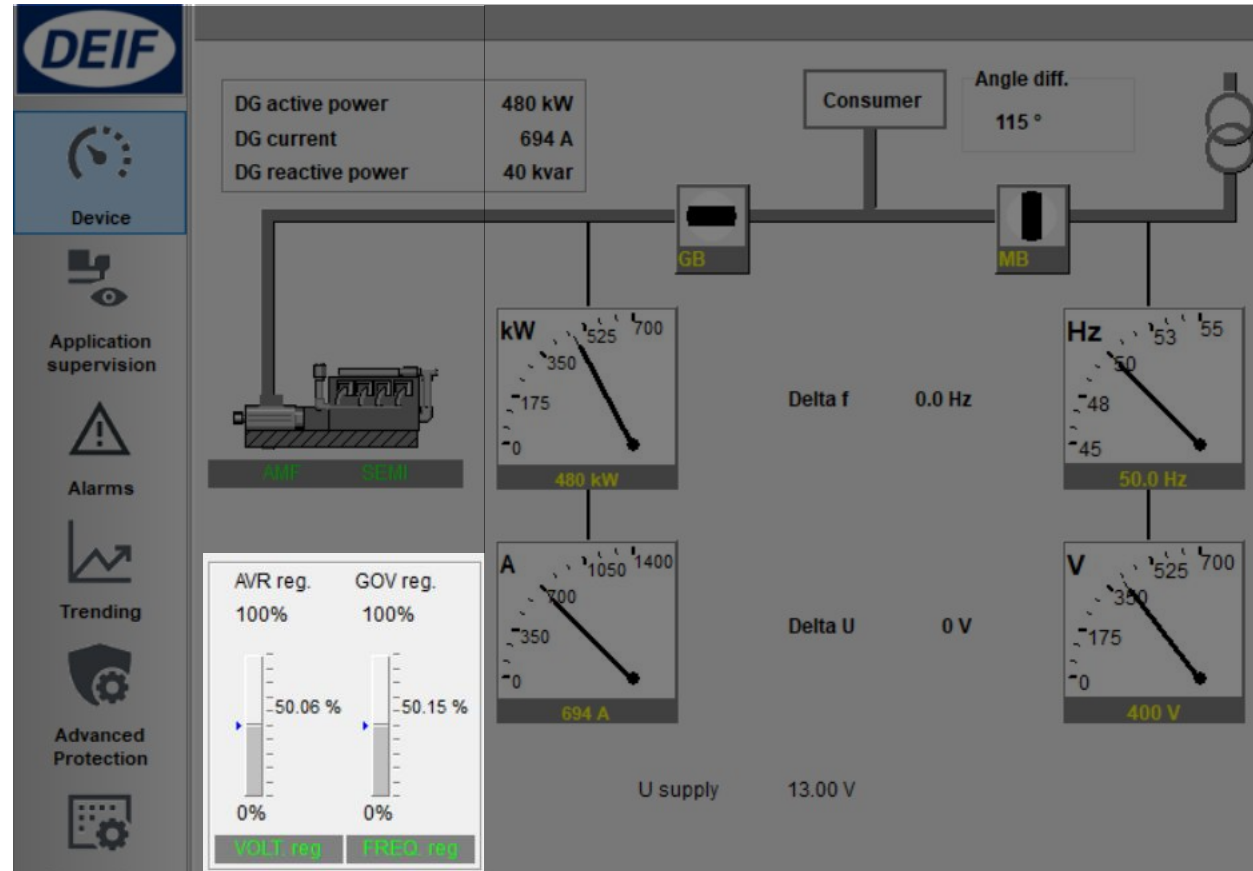
Parameter	Description	Set point	Range
U Kp	Proportional gain value of the PID controller for reactive power regulation	2.5	(0 .. 60)
Q Kp	Proportional gain value of the PID controller for reactive power regulation	2.5	(0 .. 60)
Q Ti	Integral time value of the PID controller for reactive power regulation	1.5	s (0 .. 60)
Q Td	Differential time value of the PID controller for reactive power regulation	0	s (0 .. 2)

Analog Regulation Status

Check **Device**

> Governor reg.

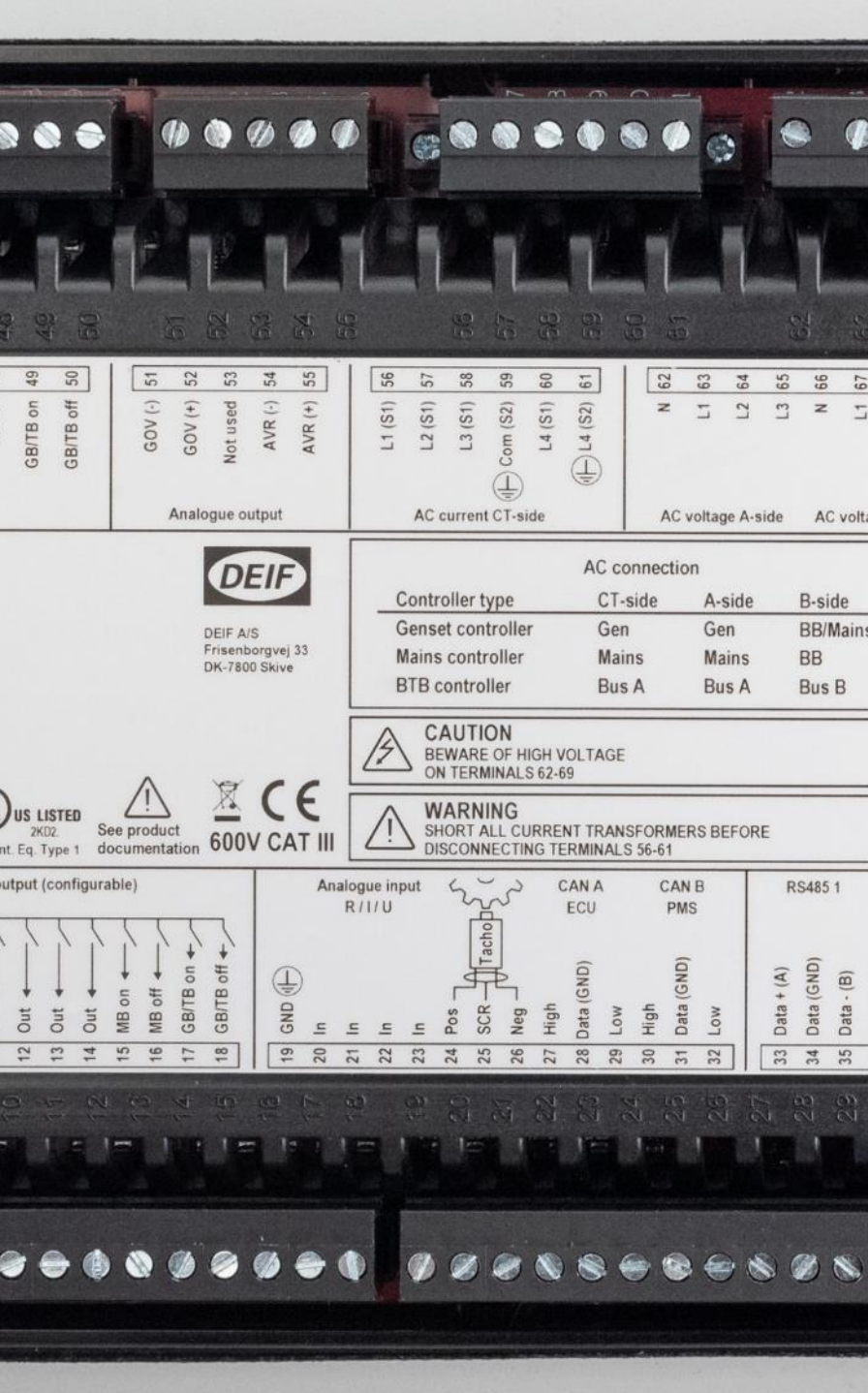
> AVR reg.



Relay regulation

SPEED REGULATION - RELAY

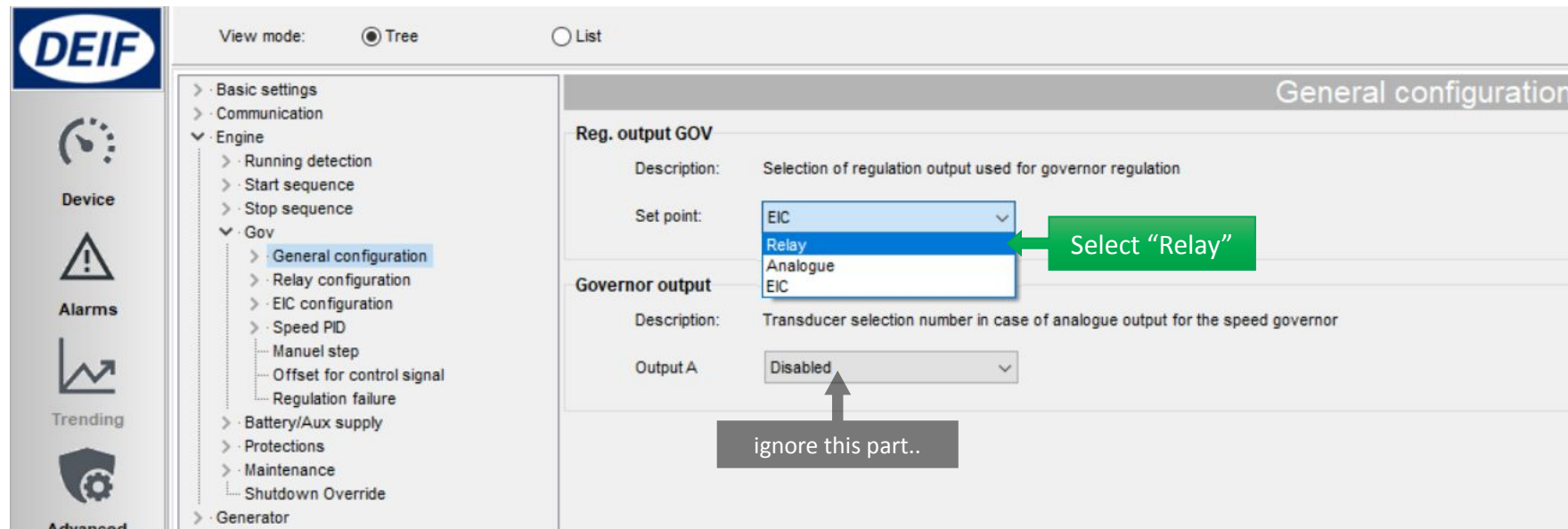
VOLTAGE REGULATION - RELAY



Speed Regulation - Relay

1. Change Gov setting to relay

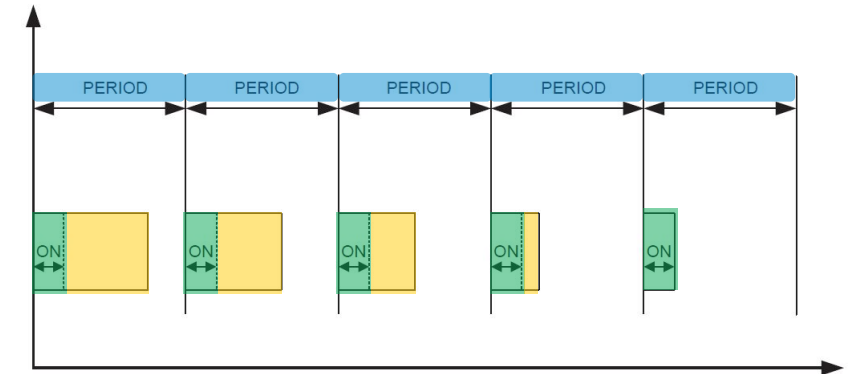
Parameter > Engine > Gov > *General configuration*



Speed Regulation - Relay

2. Setup pulse signal and choosing relay terminals

Parameter > Engine > Gov > Relay configuration > *Output and period*



The screenshot shows the DEIF software interface. On the left is a navigation tree with the following structure:

- Basic settings
- Communication
- Engine
 - Running detection
 - Start sequence
 - Stop sequence
 - Gov
 - General configuration
 - Relay configuration
 - Output and period**
 - EIC configuration
 - Speed PID
 - Manuel step
 - Offset for control signal
 - Regulation failure
 - Battery/Aux supply
 - Protections
 - Maintenance
 - Shutdown Override
- Generator

The main panel is titled 'Output and period' and contains the following settings:

- GOV ON time**
 - Description: The min. ON time of the relay outputs used for governor relay regulation
 - Set point: 500 ms (10 .. 6500)
- GOV period time**
 - Description: The regulator period time used for governor relay regulation
 - Set point: 2500 ms (250 .. 32500)
- Output A**: Terminal 13 (with a red arrow pointing to 'Increase')
- Output B**: Terminal 14 (with a red arrow pointing to 'Decrease')

A red box highlights the 'Output A' and 'Output B' dropdown menus. Below this box is a red text box that says 'Select any unused DO'.

Speed Regulation - Relay

3. Setup speed Gain

Parameter > Engine > Gov > Speed PID >

- Island (relay)
- Load share (relay)
- Mains Parallel (relay)

The screenshot displays the DEIF parameter configuration software interface. On the left, a sidebar contains icons for 'Device', 'Alarms', and 'Trending'. The main area features a hierarchical tree view on the left and a detailed parameter configuration panel on the right. The tree view is expanded to show the 'Speed PID' settings for three different relay modes: 'Island (relay)', 'Load share (relay)', and 'Mains parallel (relay)'. The 'Speed PID' section is further expanded to show the 'P deadband' and 'P Kp relay' parameters. The 'P deadband' parameter is set to 2% (0.2 .. 10), and the 'P Kp relay' parameter is set to 10 (0 .. 100).

View mode: ☒ Tree ☐ List

Island (relay)

f deadband

Load share (relay)

P L S f deadband

Mains parallel (relay)

P deadband

Description: Deadband of the controller for frequency regulation

Set point: % (0.2 .. 10)

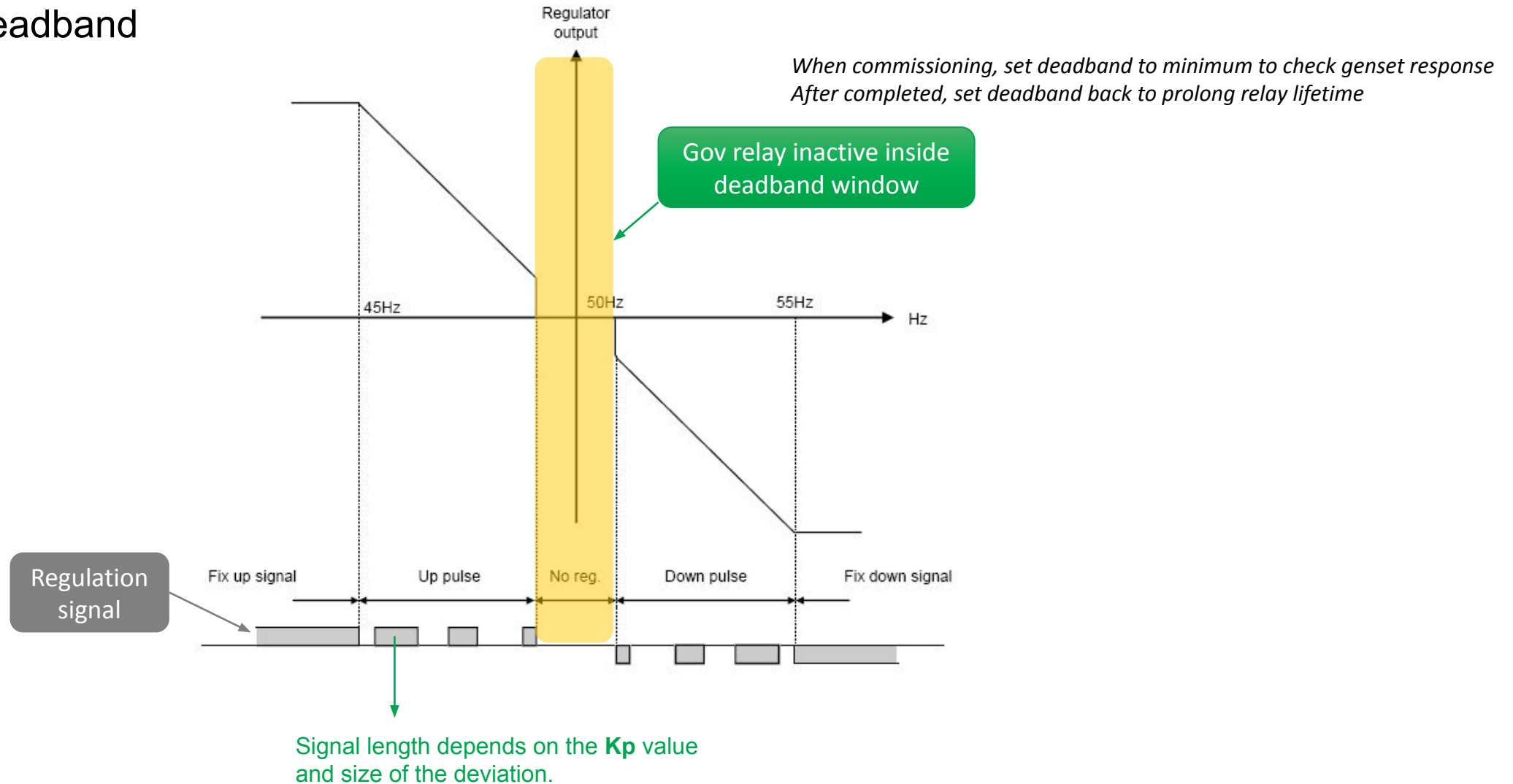
P Kp relay

Description: Proportional gain value of the controller for frequency regulation

Set point: (0 .. 100)

Speed Regulation - Relay

Regulation Deadband



Voltage Regulation - Relay

1. Change AVR setting to relay

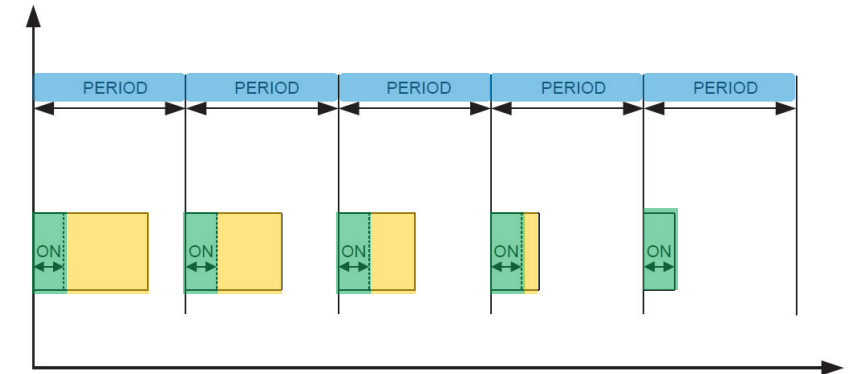
Parameter > Generator > AVR > General configuration

The screenshot displays the DEIF parameter configuration interface. On the left, a sidebar shows the navigation tree with 'General configuration' selected under the 'AVR' section. The main area is titled 'General configuration' and contains two sections: 'Reg. output AVR' and 'AVR output'. In the 'Reg. output AVR' section, the 'Set point' dropdown menu is open, showing the following options: EIC, Relay, Analogue, and EIC. A blue arrow points to the 'Relay' option with the text 'Select "Relay"'. In the 'AVR output' section, the 'Output A' dropdown menu is set to 'Transducer 55'. A grey arrow points to this dropdown with the text 'ignore this setting'.

Voltage Regulation - Relay

2. Setup pulse signal and choosing relay terminals

Parameter > Generator > AVR > Relay configuration > *Output and period*



The screenshot shows the DEIF parameter configuration interface. The left sidebar contains a tree view of parameters, with 'Generator' > 'AVR' > 'Relay configuration' > 'Output and period' selected. The main area displays the 'Output and period' configuration page. It includes two sections: 'AVR ON time' and 'AVR period time'. The 'AVR ON time' section has a description 'Min. ON time of the relay outputs for AVR regulation' and a set point of 100 ms (range 10 .. 3000). The 'AVR period time' section has a description 'AVR duty cycle time' and a set point of 500 ms (range 50 .. 15000). Below these, there are two dropdown menus for 'Output A' and 'Output B', both currently set to 'Not used'. A red box highlights these dropdowns, with red arrows pointing to them from the text 'Relay Increase' and 'Relay Decrease'. A red box below the dropdowns contains the text 'Select any unused DO'.

Voltage Regulation - Relay

3. Setup voltage Gain

Parameter > Generator > AVR > Voltage PID >

- Island (relay)
- Load share (relay)
- Mains Parallel (relay)

When commissioning, set deadband to minimum to check genset response
After completed, set deadband back to prolong relay lifetime

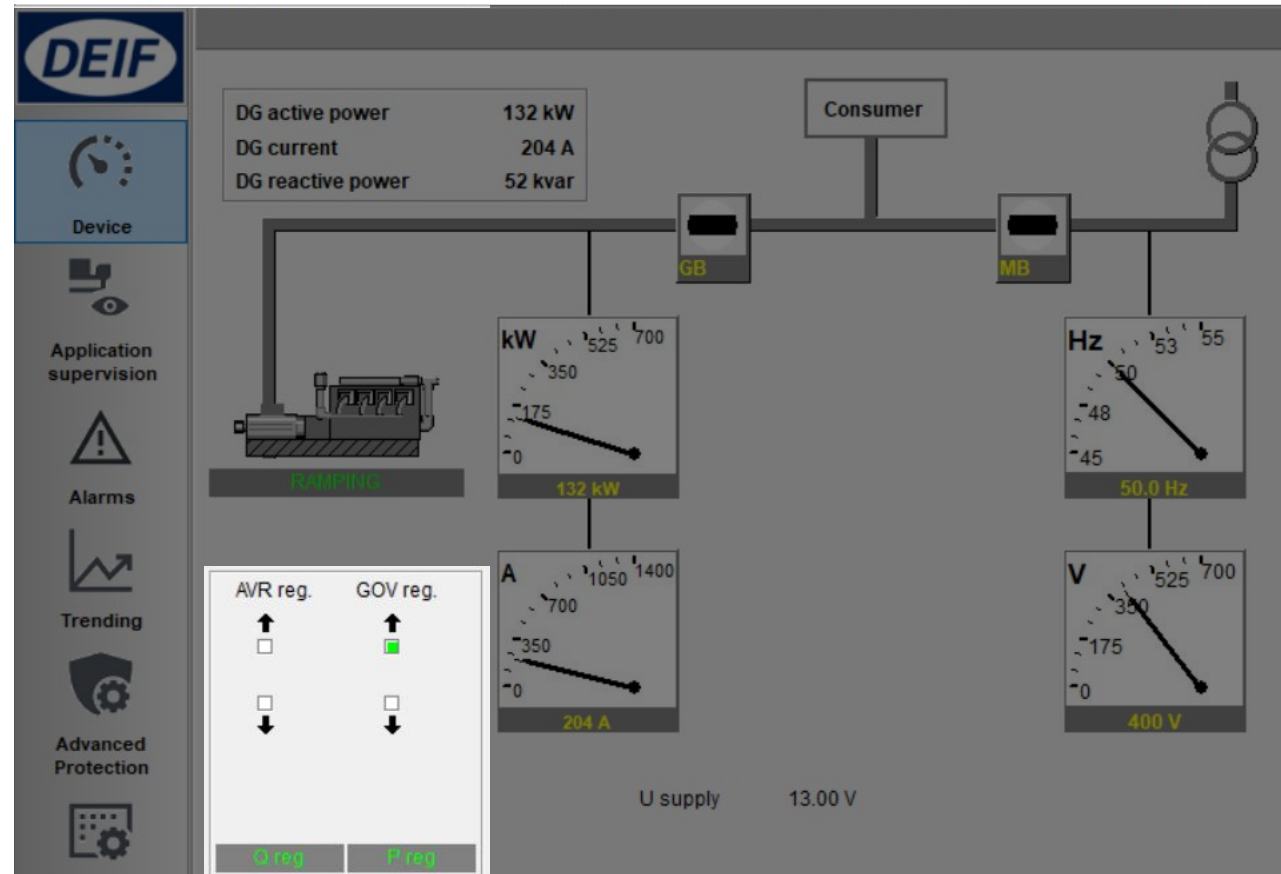
The screenshot displays the DEIF control interface. On the left, a sidebar contains the DEIF logo and navigation icons for 'Advanced Protection', 'Parameters', and 'I/O'. The main area shows a hierarchical tree view of the configuration menu. The 'Generator' section is expanded, showing 'AC configuration', 'Engine', 'AVR', and 'Voltage PID'. The 'Voltage PID' section is further expanded, showing 'Island (analog/EIC)', 'Island (relay)', 'Load share (analog/EIC)', 'Load share (relay)', 'Mains parallel (analog/EIC)', and 'Mains parallel (relay)'. The 'Load share (relay)' option is selected, and its configuration page is displayed on the right. This page shows the 'Q L S U deadband' setting with a description: 'Deadband of the voltage regulation in load sharing'. Below this, the 'Q deadband' setting is shown with a description: 'Deadband of the controller for reactive power regulation' and a set point of 2%. The 'Q Kp relay' setting is also shown with a description: 'Proportional gain value for the reactive power regulation' and a set point of 10. The 'Mains parallel (relay)' option is also visible in the tree view.

Relay Regulation Status

Check **Device**

> Governor reg.

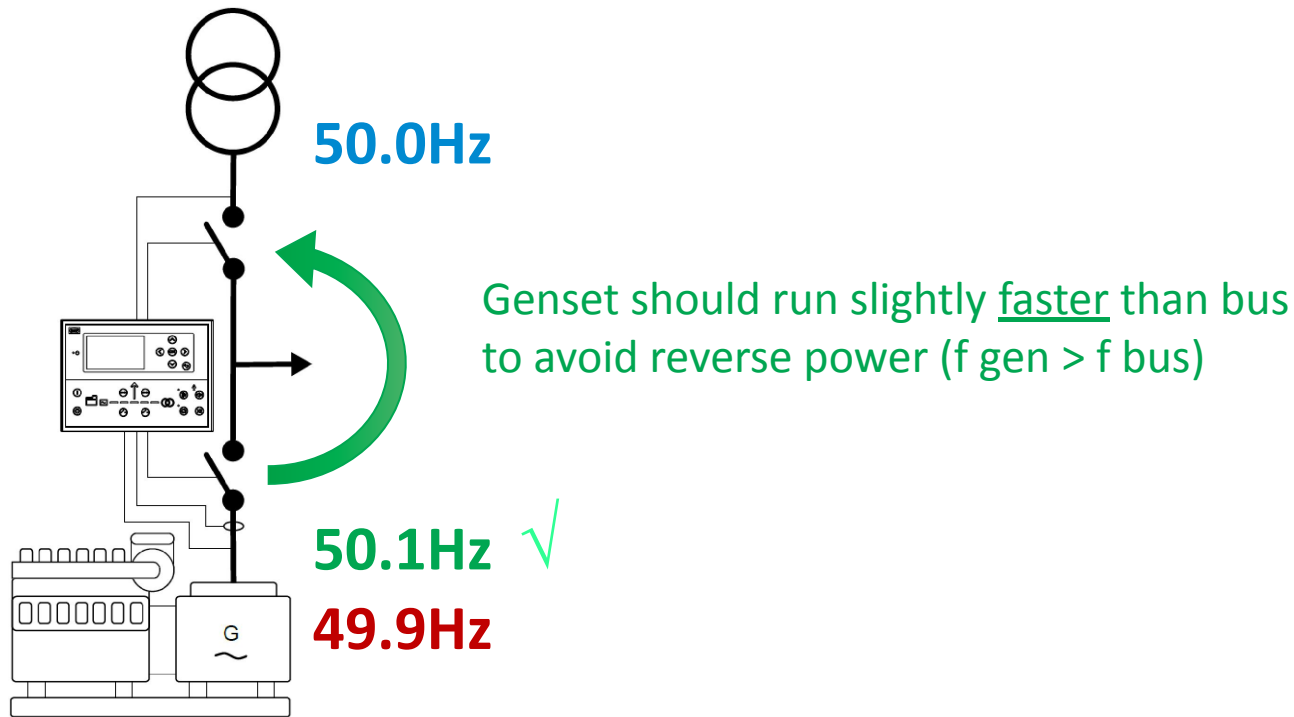
> AVR reg.



Synchronisation

AGC always perform synchronism check before closing breakers

All modes: Auto, Semi Auto, and Manual



Allowed maximum slip frequency: **0.3Hz**



Synchronisation

Change slip frequency & voltage

Synchronisation > Dynamic synchronisation

The screenshot shows the DEIF software interface. On the left is a navigation tree with categories: Basic settings, Communication, Engine, Generator, Busbar, Mains, Breakers, and Synchronisation. Under Synchronisation, the options are Synchronisation type, Dynamic synchronisation (highlighted), Synchronisation regulator, Static synchronisation, Synchronisation failure, and CBE (Close before excitation). The main panel is titled 'Dynamic synchronisation' and contains two sections: 'Slip Frequency' (highlighted with a green box) and 'Slip Voltage'. The 'Slip Frequency' section has two parameters: 'Sync. dfMax' with a description 'Max. allowable frequency difference for Dynamic synchronisation' and a set point of 0.3 Hz (range 0 .. 0.5); and 'Sync. dfMin' with a description 'Min. allowable frequency difference for Dynamic synchronisation' and a set point of 0 Hz (range -0.5 .. 0.3). Each set point has a slider and a numeric input field.

Here, to sync with 50.0Hz 400V busbar, genset need to run:

- Freq between 50.0 – 50.3Hz
- Voltage between 380 – 420V

Normally no need changing these settings

This screenshot shows the 'Slip Voltage' section of the DEIF software interface, highlighted with a green box. It contains two parameters: 'Sync. dUMax' with a description 'Max. allowable voltage difference for Dynamic synchronisation' and a set point of 5 % (range 2 .. 10); and 'Sync. dUMin' with a description 'Max. allowable value the regulated voltage must be below voltage to sync to' and a set point of -5 % (range -10 .. 0). Each set point has a slider and a numeric input field.

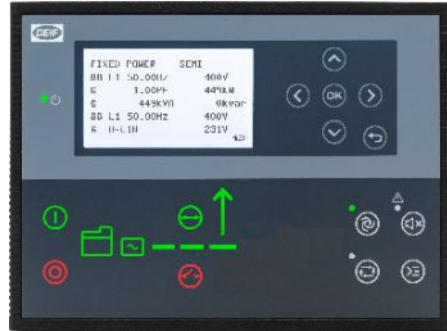
Application

SINGLE GENSET

MULTIPLE GENSETS



Adapting Mimic



Standalone Island



Standalone AMF



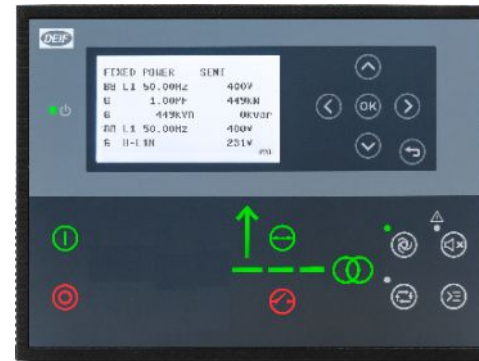
Standalone Parallel without MB



Genset



MAINS+TB



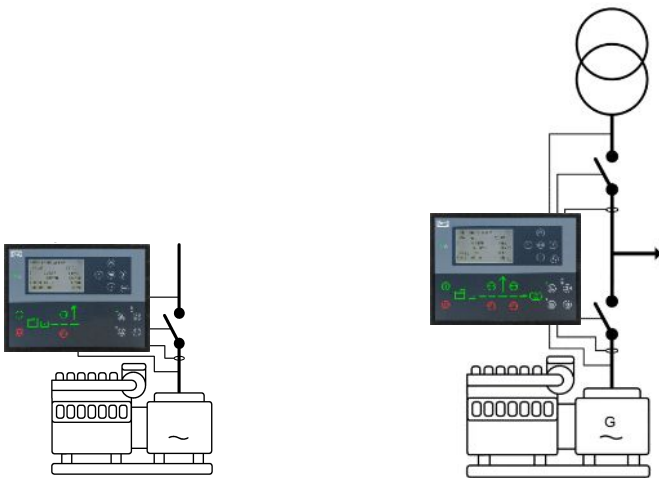
MAINS



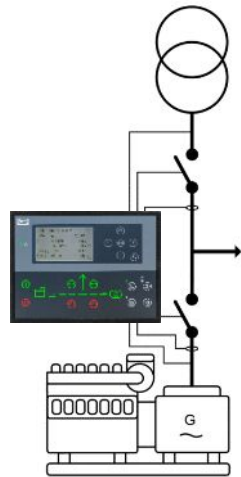
BTB

Typical Applications for AGC 150

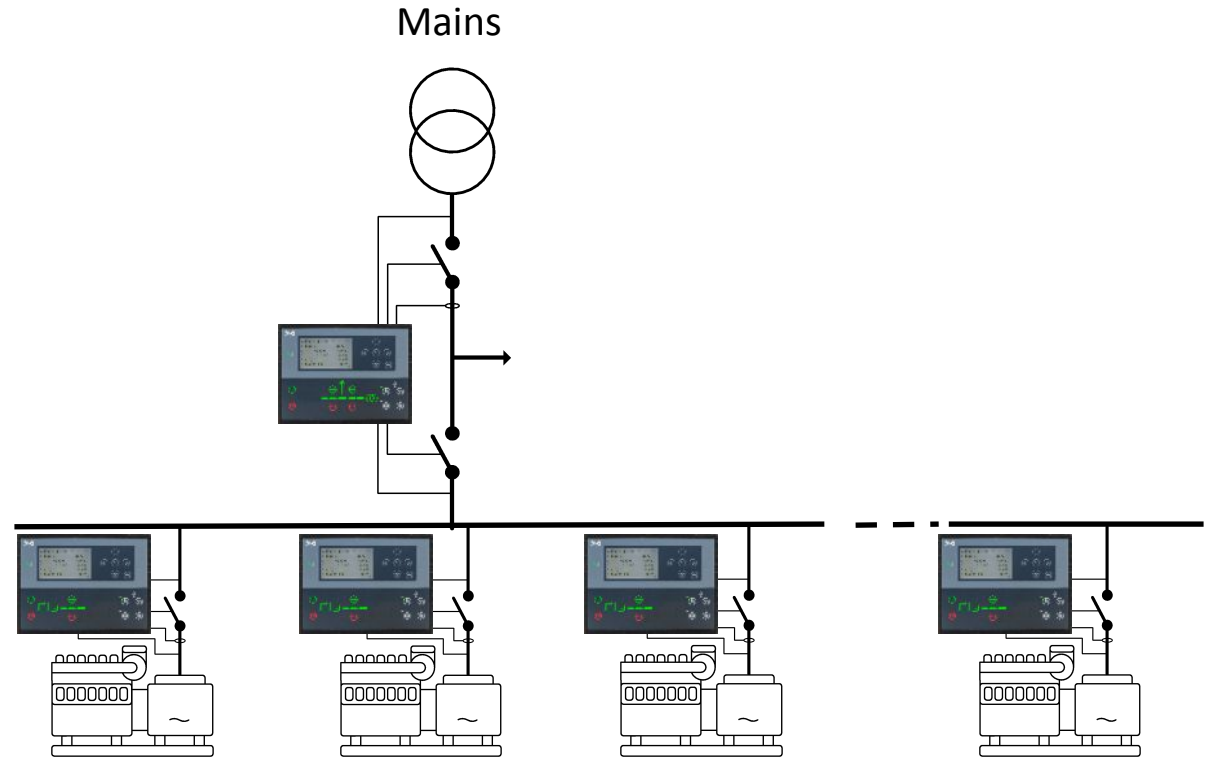
- Single Genset
- Single Genset with Mains
- Multiple Genset's with Mains



Single Genset



Single Genset w. Mains



Genset 1

Genset 2

Genset 3

Genset 32

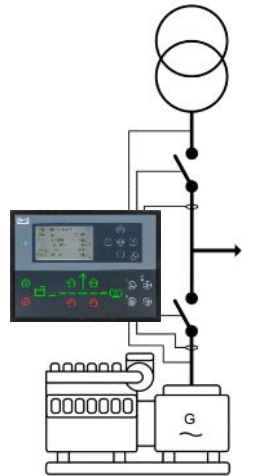
(SW packagers dependent)

Application

SINGLE GENSET

Single Genset

- Application configuration
- New plant configuration



Single Genset
with Mains

The screenshot shows the DEIF software interface for configuring a single genset. The main window is titled "Application 1: Standard plant". On the left, there is a sidebar with icons for "Options", "Translations", "M-Logic & AOP", and "Application configuration". The "Application configuration" icon is highlighted with a green arrow. The main area shows the "Area configuration - Top" section with a "Source" dropdown menu set to "Mains". A green arrow points to this dropdown with the label "Mains". Below this, the "Bottom" section shows a "Source" dropdown menu set to "Diesel gen". To the right, there is a "Plant options" dialog box. A green arrow points to the "Plant type" dropdown menu, which is set to "Single DG". A green label "Single DG" is placed next to the dropdown. The dialog box also shows "Product type" as "AGC 150 DG" and "Application emulation" as "Off".

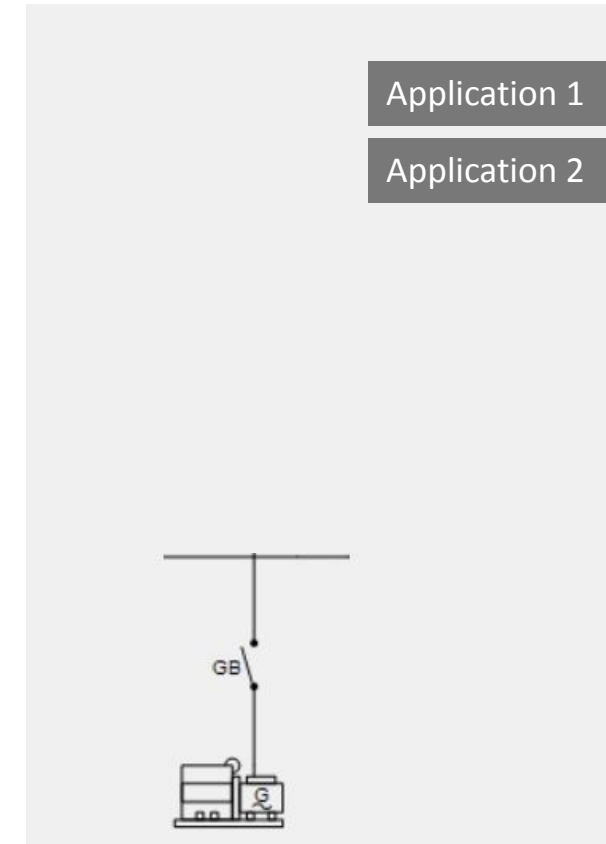
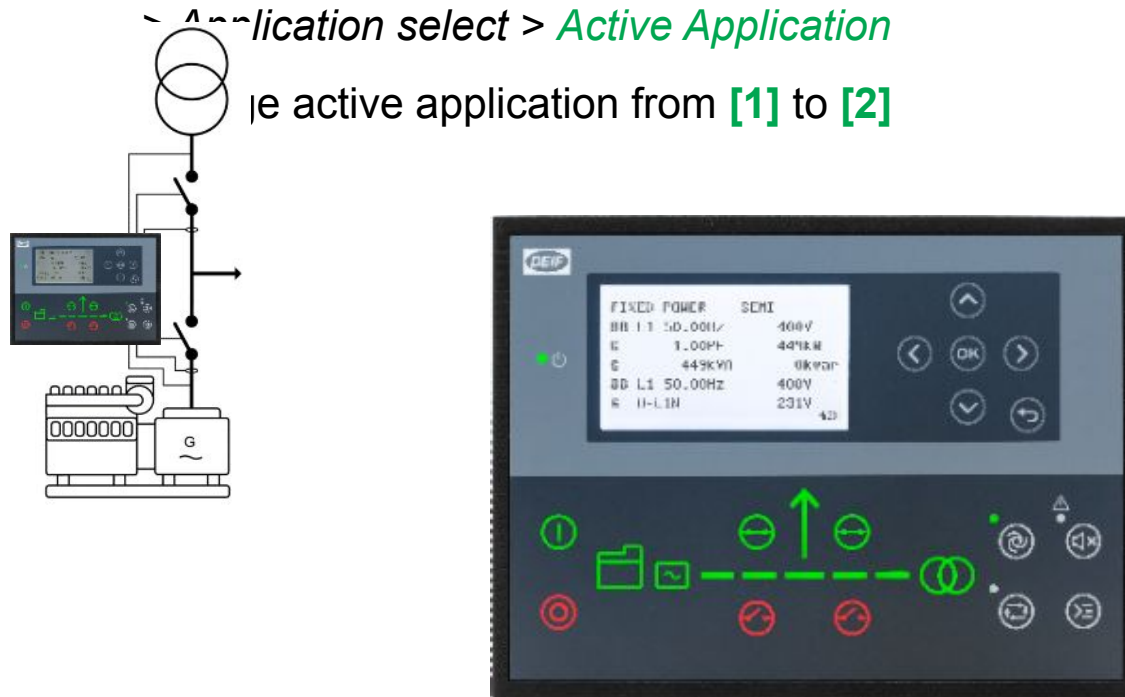
Single Genset

Alternative setup:*

Access from AGC 150 display:

Settings > Basic settings > Application type > Standalone or PM >

Application select > Active Application
Select the active application from [1] to [2]

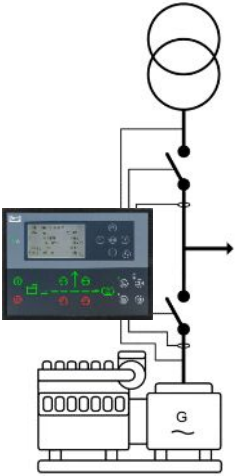


*Only works if application 2 in default factory setting

Single Genset

Select Genset Mode

Parameter > Basic settings > Application type > Genset type > Genset/plant mode



The diagram shows a genset system with a control panel and a generator unit. The control panel has a screen displaying various parameters and a set of physical buttons. The generator unit is labeled 'G' and is connected to a busbar system.

DEIF

View mode: ☒ Tree ☐ List

Basic settings

- Application type
 - Genset type
 - Genset/plant mode**
- Measurement setup
- Nominal settings
- Controller settings
- Communication
- Engine
- Generator
- Busbar
- Mains
- Breakers
- Synchronisation
- Power set points
- Power management
- VO settings
- Functions
- Alternative configuration
- USW specific parameters

Genset/plant mode

Genset Mode

Description: Generator running mode

Set point: **Auto, Mains Failure**

Example: AMF

Device

Alarms

Trending

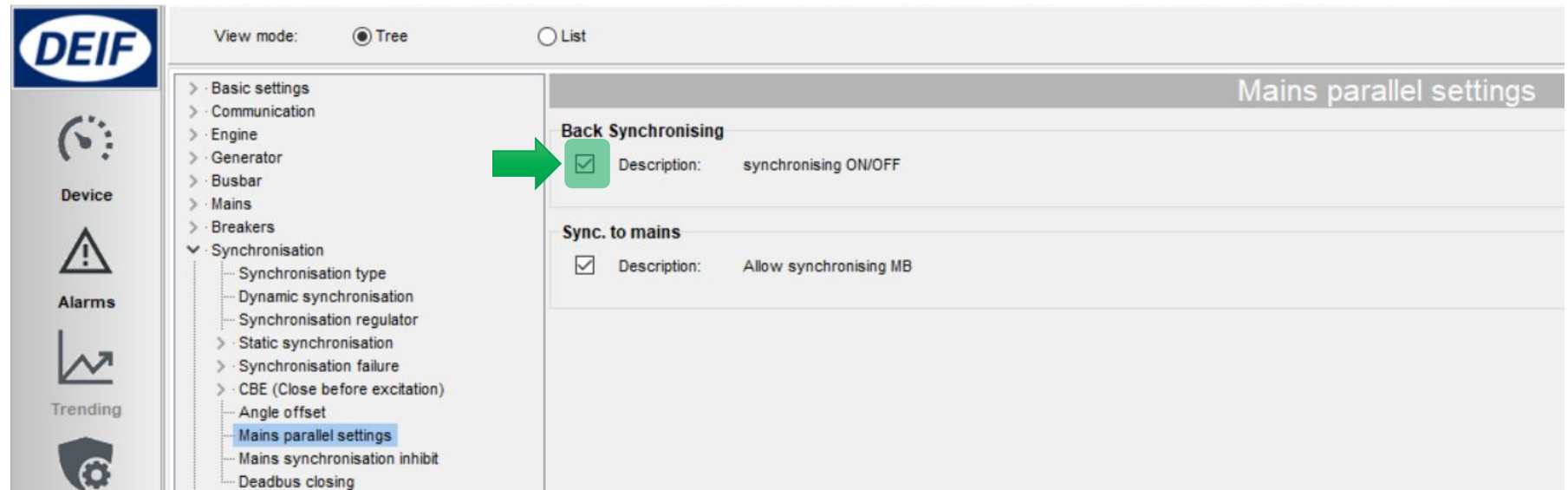
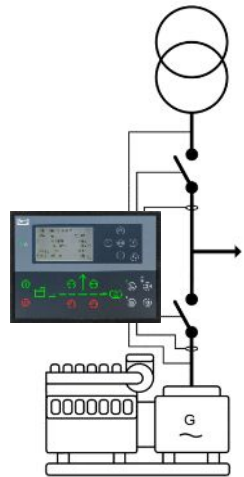
Advanced Protection

Parameters

Single Genset

Enable Back Synchronising

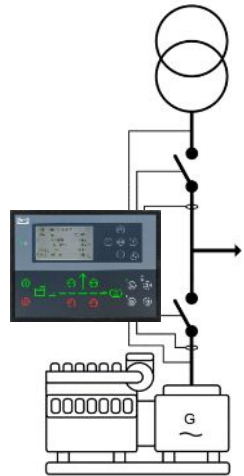
Parameter > Synchronisation > Mains parallel settings



Single Genset

AMF delay settings

Parameter > Mains > AMF function > *AMF timer*



- > Basic settings
- > Communication
- > Engine
- > Generator
- > Busbar
- ▼ Mains
 - > Protections
 - Overlap
 - > Voltage and frequency limits
 - ▼ AMF functions
 - Start sequence ib AMF mode
 - AMF timer
- > Breakers
- > Synchronisation
- > Power set points
- > Power management
- > I/O settings
- > Functions
- > Alternative configuration
- > USW specific parameters

AMF timer

U mains failure

Description: Timer for mains failure voltage detection

Timer: 5 sec (0.5 .. 990)

Mains OK Delay U

Description: Timer for mains voltage ok detection

Timer: 60 sec (2 .. 9900)

f mains failure

Description: Timer for mains failure frequency detection

Timer: 5 sec (0.5 .. 990)

Mains OK Delay f

Description: Timer for mains frequency ok detection

Timer: 60 sec (2 .. 9900)

Modeshift

Description: Allow switch to AMF mode

Set point: **Modeshift ON:** Other modes retain AMF function when Mains fail

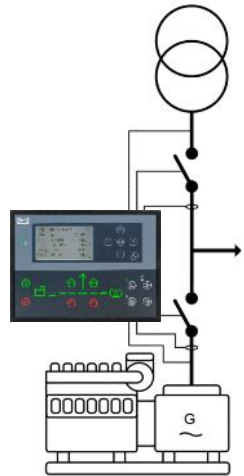
Mains failure delay

Mains Ok delay

Single Genset

Mains failure voltage setpoint

Parameter > Mains > Voltage and frequency limits > Voltage limits



DEIF

View mode: ☒ Tree ☐ List

- > Basic settings
- > Communication
- > Engine
- > Generator
- > Busbar
- ▼ Mains
 - > Protections
 - Overlap
 - ▼ Voltage and frequency limits
 - Voltage settings**
 - Frequency settings
 - > AMF functions
 - > Breakers
 - > Synchronisation

Voltage settings

Low Voltage

Description: set point for mains voltage range low

Set point: % (30 .. 100)

High Voltage

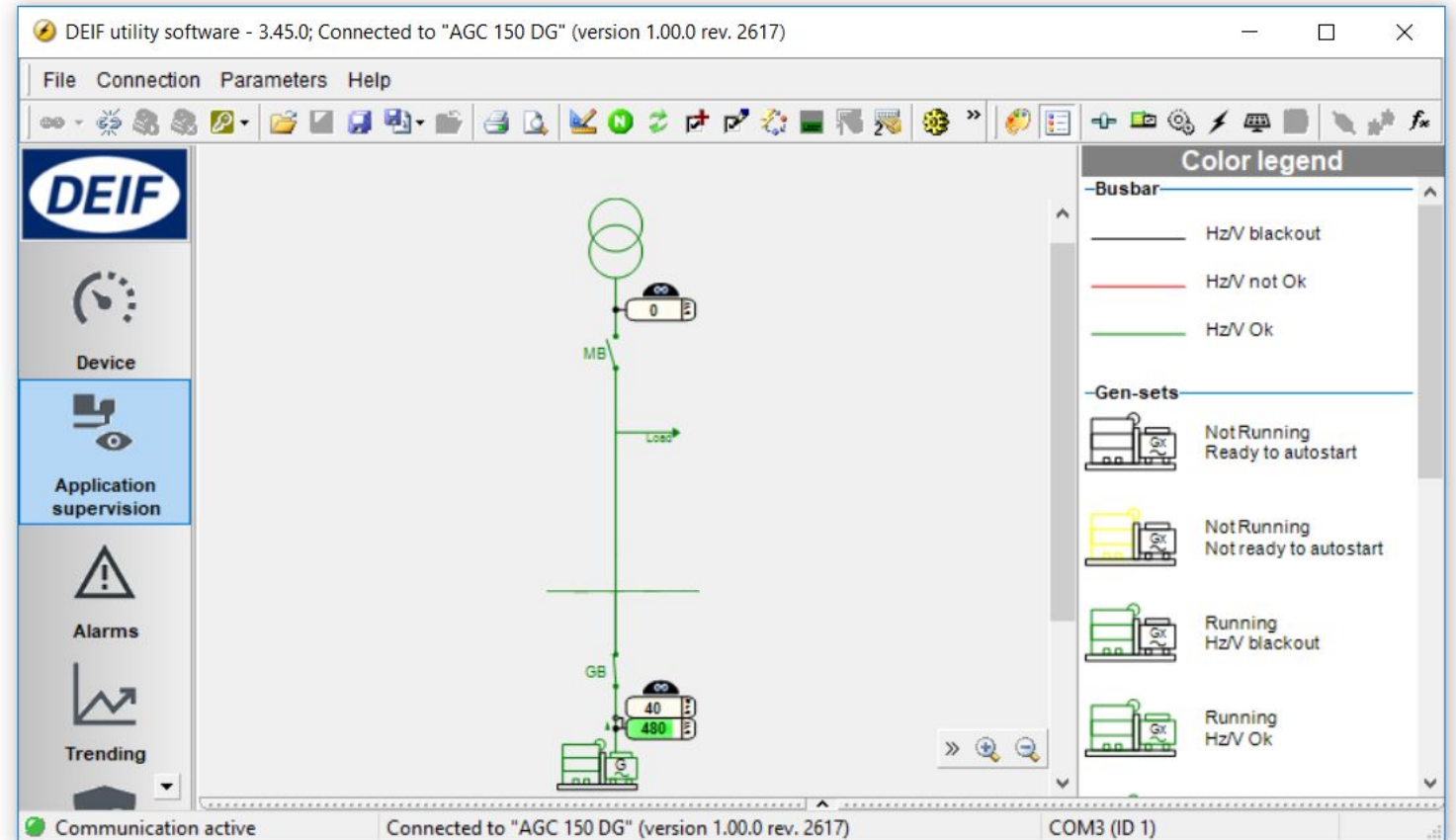
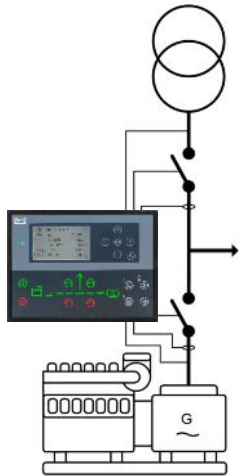
Description: set point for mains voltage range high

Set point: % (100 .. 120)

Single Genset

Done setup single genset?

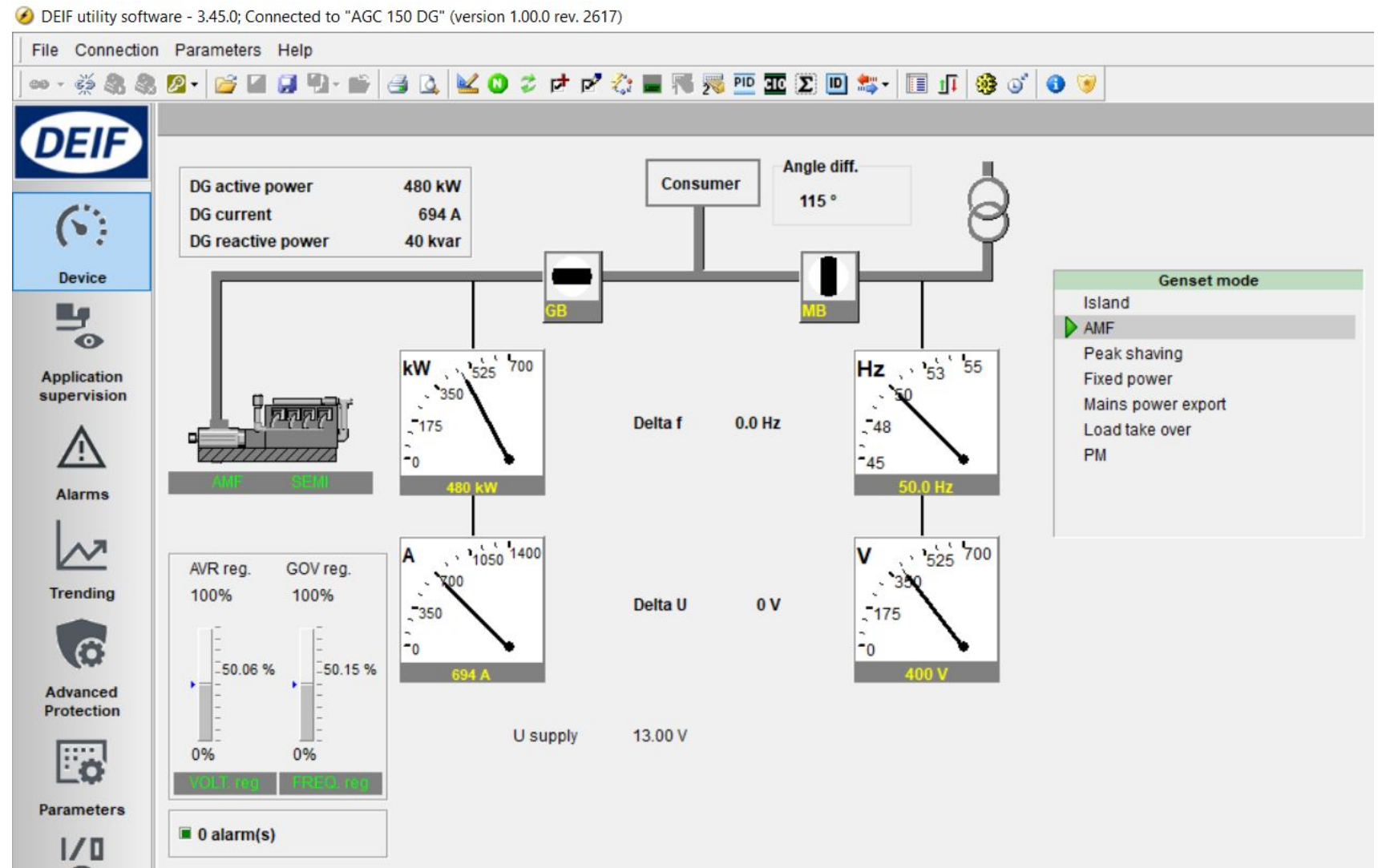
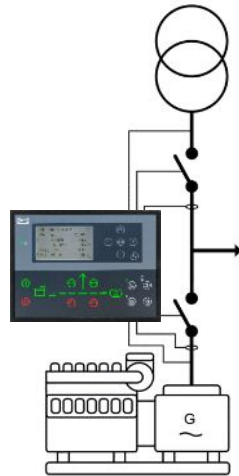
Check **Application Supervision**



Single Genset

Or **Device**

For detailed monitoring



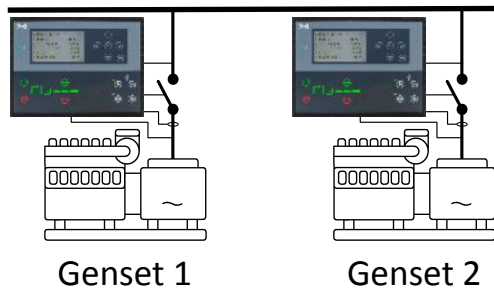
Application

MULTIPLE GENSETS

Multiple Gensets

- *Application configuration*
- *New plant configuration*

2 Gensets

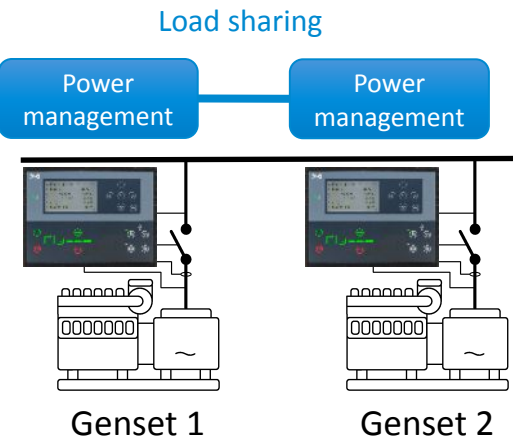


The screenshot shows the DEIF software interface. The main window is titled 'DEIF' and has a menu bar with 'File', 'Connection', 'Parameters', and 'Help'. Below the menu bar is a toolbar with various icons. The main area is divided into two panes. The left pane is titled 'Area control' and 'Plant totals'. It contains a section for 'Area configuration - Top' with a 'Source' dropdown set to 'None' and an 'ID' field set to '0'. Below this is a 'Bottom' section with a 'Source' dropdown set to 'Diesel gen', an 'ID' field set to '0', a checkbox for 'Redundant controller', and a 'GB' dropdown set to 'Pulse'. At the bottom of the left pane are buttons for '< Add', 'Delete', and 'Add >'. The right pane is titled 'Application 1: Standard plant' and shows a schematic diagram of two gensets connected to a busbar. A blue arrow points from the 'Application configuration' button in the left pane to the right pane. Another blue arrow points from the 'Create drawing of 2 gensets' text to the schematic diagram. A third blue arrow points from the 'Standard' option in the 'Plant type' dropdown to the 'Standard' option in the 'Plant options' dialog box. The 'Plant options' dialog box is open on the right side of the screen. It has a 'Product' dropdown set to 'AGC 15'. The 'Plant type' dropdown is set to 'Standard'. Below this is a list of options: 'Standard', 'Single DG', 'Standard', 'Gen-set group', and 'Batchwriter'. The 'Standard' option is selected. Below the list is a 'Name' field. The 'Bus Tie options' section has a checkbox for 'Wrap bus bar'. The 'Power management CAN' section has three radio buttons: 'Primary CAN' (selected), 'Secondary CAN', and 'Primary and Secondary CAN'. The 'Application emulation' section has three radio buttons: 'Off' (selected), 'Breaker and engine cmd. active', and 'Breaker and engine cmd. inactive'. At the bottom of the dialog box are 'OK' and 'Cancel' buttons.

Multiple Gensets

Select Genset Mode

Parameter > Basic settings > Application type > Genset type > Genset/plant mode



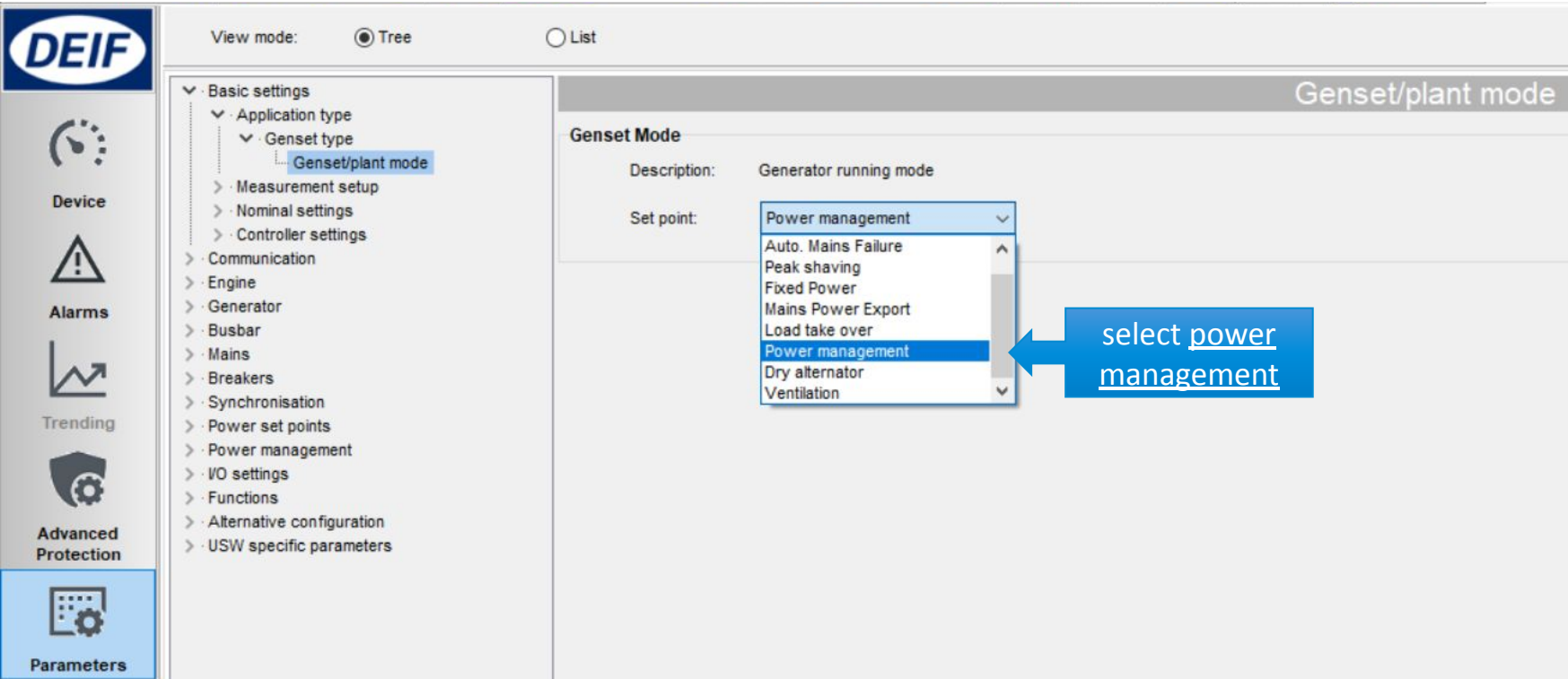
Load sharing

Power management

Power management

Genset 1

Genset 2



DEIF

View mode: ☒ Tree ☐ List

Genset/plant mode

Genset Mode

Description: Generator running mode

Set point:

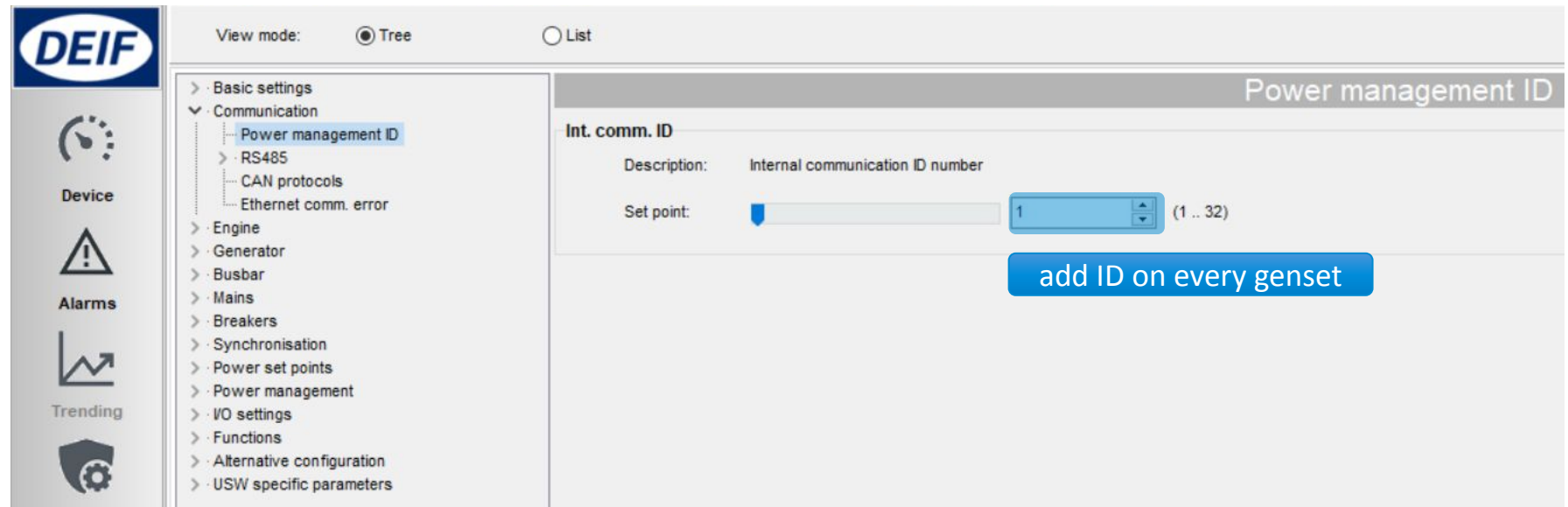
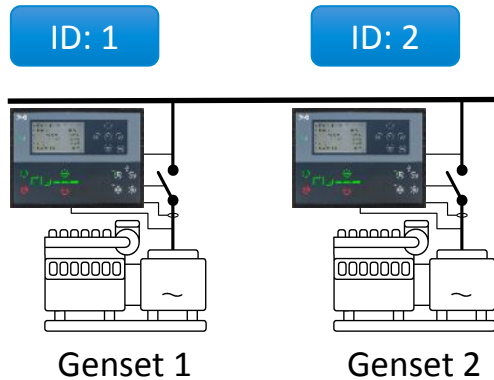
- Power management
- Auto. Mains Failure
- Peak shaving
- Fixed Power
- Mains Power Export
- Load take over
- Power management
- Dry alternator
- Ventilation

select power management

Multiple Gensets

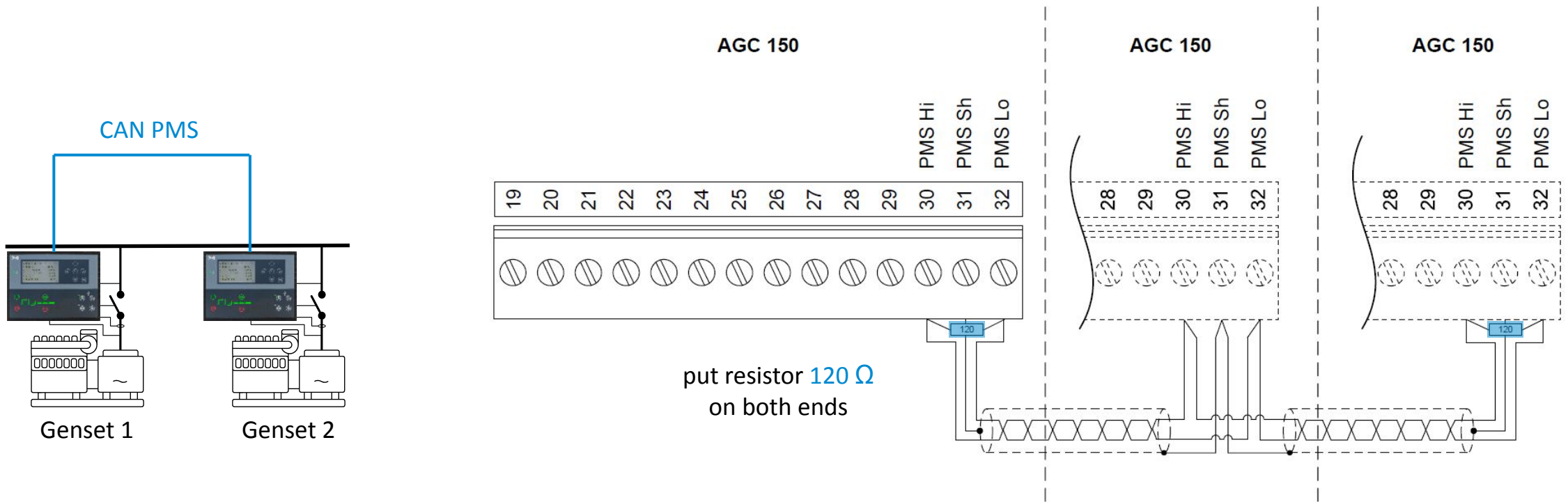
Setup ID Number

Parameter > Communication > Power management ID



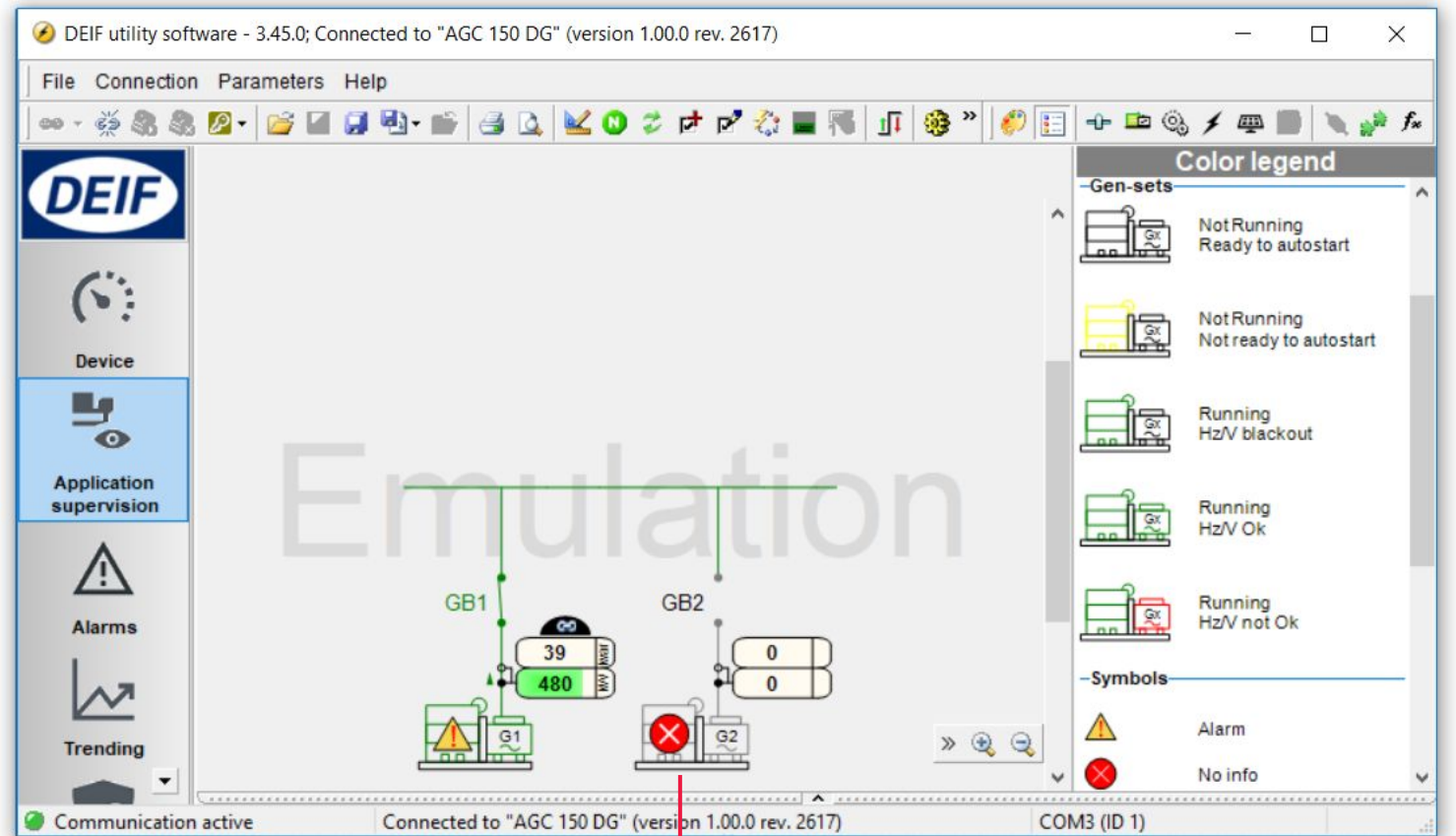
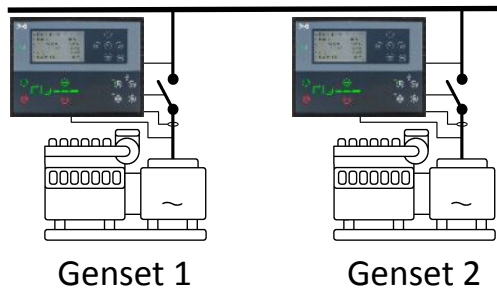
Multiple Gensets

CANbus wiring



Multiple Gensets

Check [Application Supervision](#)

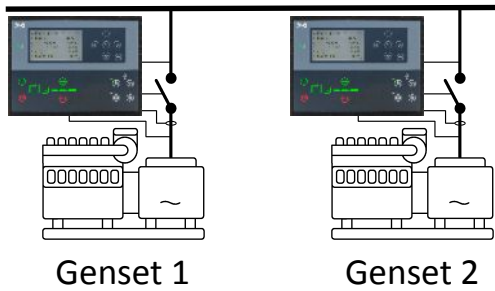


Incorrect communication
will be shown

Power Management

LOAD DEPENDENT START/STOP

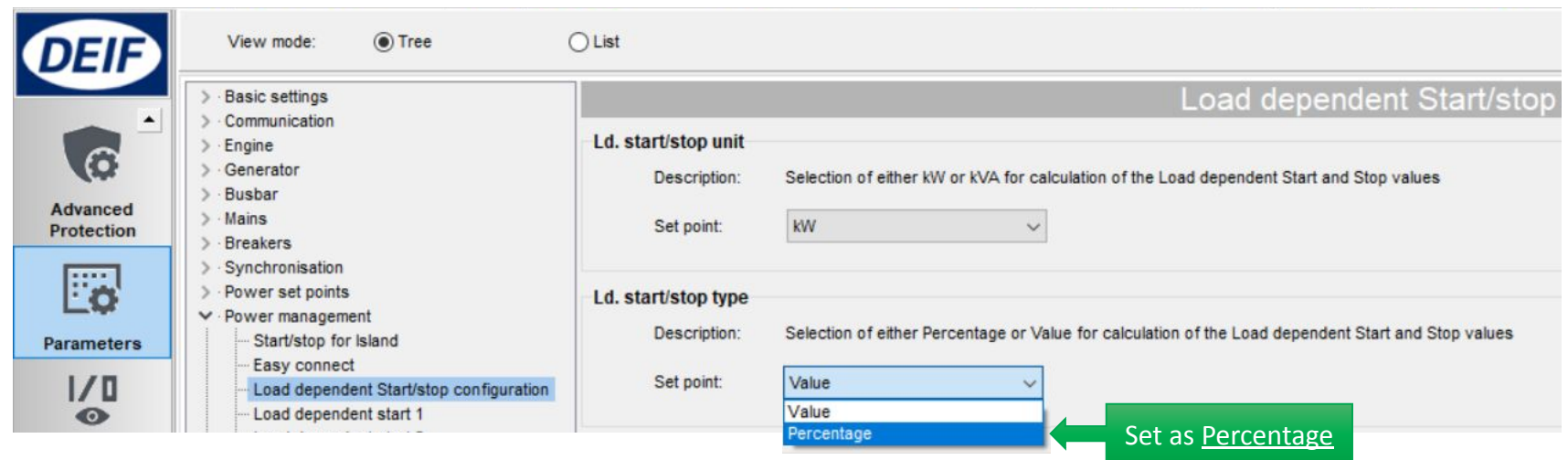
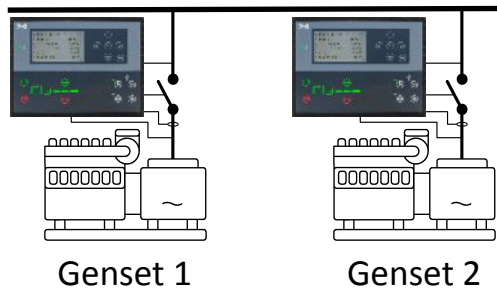
MULTI START



Load dependent start/stop

Configure Start/stop based on load Percentage

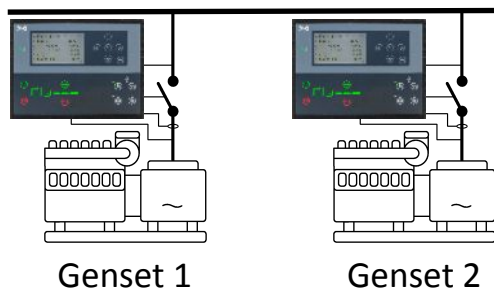
Parameter > Power management > *Load dependent start/stop configuration*



Load dependent start/stop

Start percentage setpoint

Parameter > Power management > *Load dependent start 1*



The screenshot displays the configuration interface for 'Load dependent start 1'. The left sidebar shows a tree view of settings, with 'Load dependent start 1' selected under 'Power management'. The main panel on the right contains the following settings:

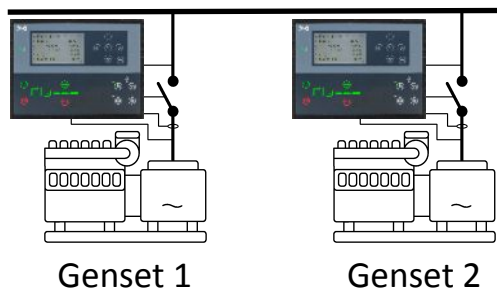
- Ld. start limit P**
Description: Setting for Load dependent Start in kW
Set point: 100 kW (1 .. 20000)
- Ld. start limit S**
Description: Setting for Load dependent Start in kVA
Set point: 100 kVA (1 .. 20000)
- Ld. start limit %**
Description: Setting for Load dependent Start in Percentage
Set point: 90 % (1 .. 100)
- Ld. start timer**
Description: Setup of Load dependent Start limits
Timer: 10 sec (0 .. 990)

The 'Start delay' label is positioned next to the 'Ld. start timer' setting.

Load dependent start/stop

Stop percentage setpoint

Parameter > Power management > *Load dependent stop 1*



Advanced Protection

Parameters

Inputs/Outputs

Multi Input

Options

- > Basic settings
- > Communication
- > Engine
- > Generator
- > Busbar
- > Mains
- > Breakers
- > Synchronisation
- > Power set points
- > Power management
 - Start/stop for Island
 - Easy connect
 - Load dependent Start/stop configuration
 - Load dependent start 1
 - Load dependent start 2
 - Load dependent stop 1**
 - Load dependent stop 2
 - Multi start set
 - > Priority
 - Available power
 - Communication failures
 - Busbar alarms
 - Additional power management settings
- > I/O settings
- > Functions
- > Alternative configuration
- > USW specific parameters

Load dependent stop 1

Ld. stop limit P

Description: Setting for Load dependent Stop in kW

Set point: kW (1 .. 20000)

Ld. stop limit S

Description: Setting for Load dependent Stop in kVA

Set point: kVA (1 .. 20000)

Ld. stop limit %

Description: Setting for Load dependent Stop in Percentage *% capacity after 1 genset removed*

Set point: % (1 .. 100)

Ld. stop timer

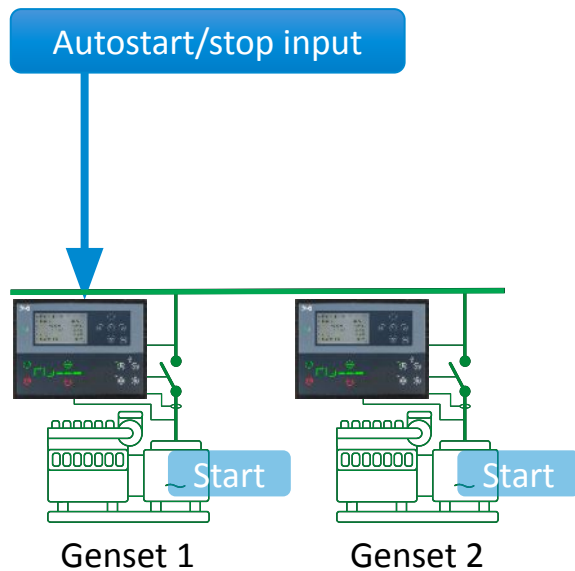
Description: Setup of Load dependent Stop limits *Stopping delay*

Timer: sec (5 .. 990)

Multi start

Setup of how many gensets start together

Parameter > Power management > *Multi start set*



The screenshot shows the 'Multi start set' configuration interface. The 'Parameters' tab is selected, showing a tree view with 'Multi start set' highlighted. The 'Multistart set1' configuration is shown, including 'Description', 'Set point', 'Min. run. set 1', and 'Multistart conf'. A dropdown menu is open for 'Set point', showing options like 'Auto calculation', 'Start 1 DG', 'Start 2 DG', etc. A blue arrow points to 'Start 2 DG' with the text 'Select Start 2 DG'.

Multi start set

Multistart set1

Description: Multistart set 1 (selection of no. of generators to start 1)

Set point: **Auto calculation** (dropdown menu open showing options: Auto calculation, Start 1 DG, **Start 2 DG**, Start 3 DG, Start 4 DG, Start 5 DG, Start 6 DG, Start 7 DG)

Min. run. set 1

Description: Setting 1.

Set point: 1 (0 .. 32)

Multistart conf

Description: Selection of setting for minimum number running.

Set point: Multi start set 1

Questions?



/DEIFgroup



/company/DEIFgroup



/DEIF_group



/DEIFgroup



www.deif.com

Thank you



/DEIFgroup



/company/DEIFgroup



/DEIF_group



/DEIFgroup



www.deif.com