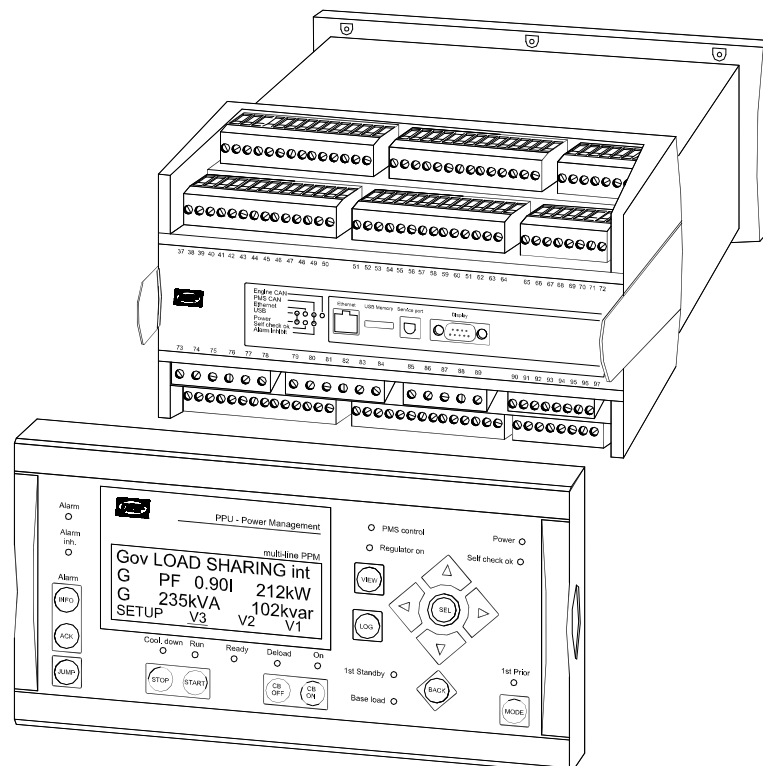


Description of options

Option X, Additional display and operator's panel for PPU Power Management (PPM)

4189340493B



- Description of option
- Functional description
- Parameter list

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1. Warnings and legal information

Legal information and responsibility

DEIF takes no responsibility for installation or operation of the generator set. If there is any doubt about how to install or operate the generator set controlled by the unit, the company responsible for the installation or the operation of the set must be contacted.

The units are not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.

Electrostatic discharge awareness

Sufficient care must be taken to protect the terminals against static discharges during the installation. Once the unit is installed and connected, these precautions are no longer necessary.

Safety issues

Installing the unit implies work with dangerous currents and voltages. Therefore, the installation should only be carried out by authorised personnel who understand the risks involved in working with live electrical equipment.



Be aware of the hazardous live currents and voltages. Do not touch any AC measurement inputs as this could lead to injury or death.

Definitions

Throughout this document a number of notes and warnings will be presented. To ensure that these are noticed, they will be highlighted in order to separate them from the general text.

Notes



The notes provide general information which will be helpful for the reader to bear in mind.

Warning



The warnings indicate a potentially dangerous situation which could result in death, personal injury or damaged equipment, if certain guidelines are not followed.

2. Description of option

X2 option

The option includes an additional standard display (DU-2) for the PPM unit to be connected to the original display unit via a CANbus connection.

With additional DU-2 units it is possible to operate the system from various positions, e.g. start/stop, alarm acknowledge, readings, access setpoints etc.



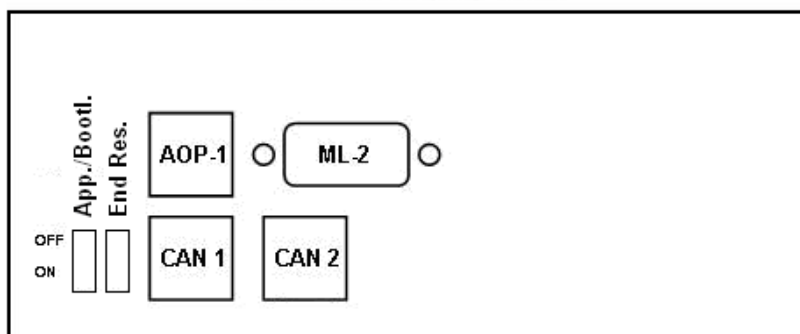
A maximum of three standard displays can be connected to each PPM unit.



The maximum length of the CANbus line is 200 m.

Back side view

Standard display DU-2

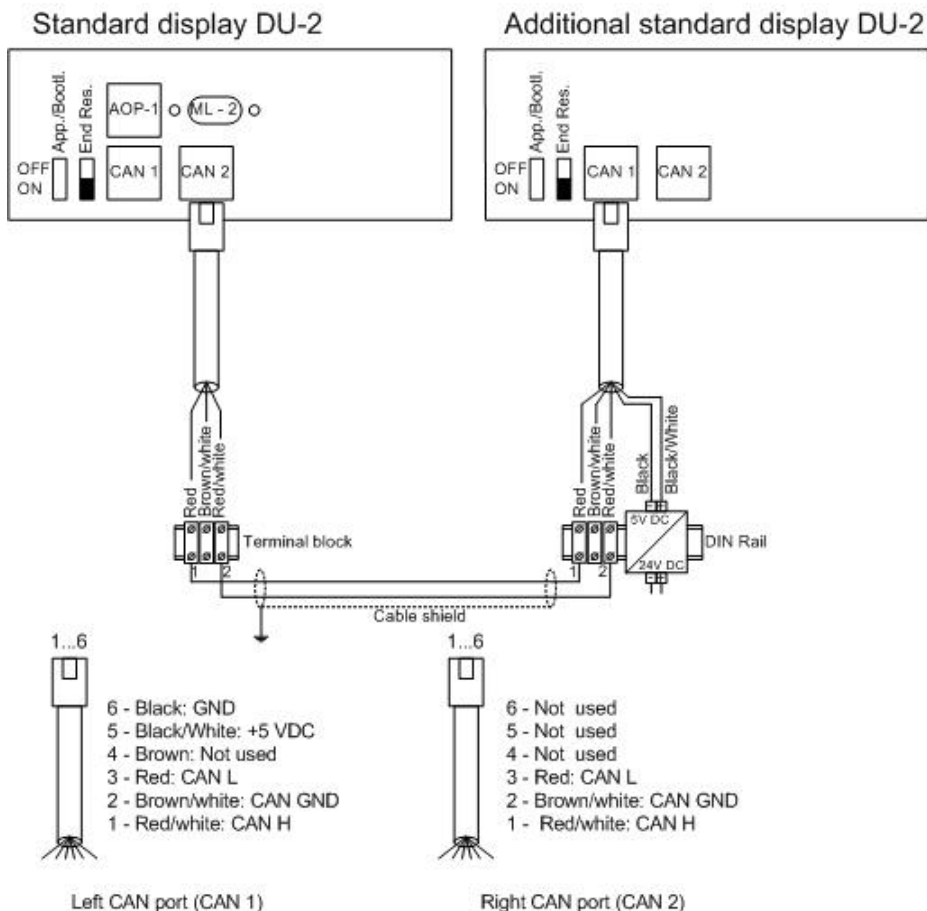


Connectors:

- PPM: The serial connection to/from the display port of the PPM unit.
- AOP-1: Not used.
- CAN 1: Auxiliary DC supply and CANbus communication to/from other DU-2 or AOP-2 units.
- CAN 2: CANbus communication to/from other DU-2 or AOP-2 units.
- End resistor: Dip switch for 120 Ohm end resistor for the CANbus communication. Dip switch no. 2 is not to be used.
- App./Bootl.: Possibility to upgrade the display software.

Installation of multiple DU-2:

Wiring



The maximum length of the CANbus line is 200 m.



A DC/DC converter for the DC supply voltage and 2 x 1 m cable with an RJ45 plug in one end and stripped wires in the other end are included in the DU-2 delivery.

End resistor:

- 2 units connected: Dip switch no. 1 has to be set to ON on both units (factory setting).
- 3 units connected: Dip switch no. 1 has to be set to ON on unit 1 and unit 3.
- More than 3 units connected: Dip switch no. 1 has to be set to ON on the first and the last unit on the CANbus line.

CAN ID configuration

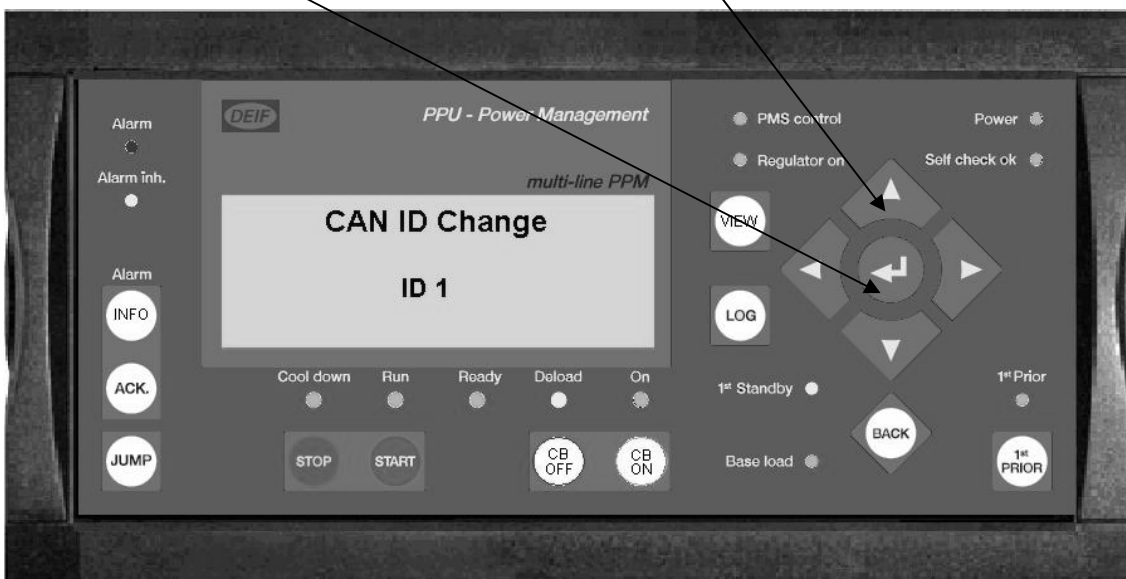
The CAN ID on the DU-2 can be set from 0 to 3. If it is set to zero, the CANbus communication is deactivated. This is what is usually done when no extra display or AOP-2 are to be used on the same PPM unit. But in case of using two or three displays on the same PPM unit, all the displays must have their own CAN ID number this way; the first one must be ID 1, the second ID 2 and in case of a third display, it must be configured as ID 3.

The CAN ID selection is done in the following way:

1. On the DU-2, press the left , up  and right  buttons at the same time to activate a CAN ID selection menu.



2. Select the desired CAN ID with the up  and down  buttons and press ENTER.



The CAN ID of the DU-2 has now been selected.



The DU-2 which is connected to the PPM unit has to have CAN ID no. 1.



The CANbus IDNo. to the second DU-2 has to be set to IDNo. 2 and the CANbus IDNo. to the third DU-2 has to be set to IDNo. 3.

Display master/slave functions

In this case, it is only allowed to edit parameters or use the START, STOP, CB ON, CB OFF, or 1st PRIOR push-buttons from one display panel at a time.

Pressing the "VIEW" push-button for more than three seconds on a slave display (a non master display).



will activate the master password check. After entering the master password, the display will be set as master display, and the old master display is changed into slave display.

From a slave display panel, it is only possible to acknowledge the alarms and read the measured status or parameter values. It is not possible to **edit** values or to use the push-buttons START, STOP, CB ON, CB OFF or 1st PRIOR. When pressing one of these push-buttons or when trying to modify a parameter on a slave display, the message "120 Second. display" will appear as information message for three seconds on the display, and no further action will follow.

Adjusting the backlight intensity

In case of placement of the display unit on the bridge, the backlight intensity and LED intensity (except the alarm LED) can be adjusted by pressing the jump push-button and selecting the channel number 9150.

The intensity can be changed by using the UP/DOWN arrow buttons on the display. After adjusting the backlight intensity, the "ENTER" push-button has to be pressed.

Error handling

Duplicate CAN ID

If two units on the CANbus have the same CAN ID, the following will be displayed:

Warning: Two displays have same CAN ID Press Enter.

When ENTER is pressed, the CAN ID change menu will be displayed, and another CAN ID can be selected for the unit.

X4 option

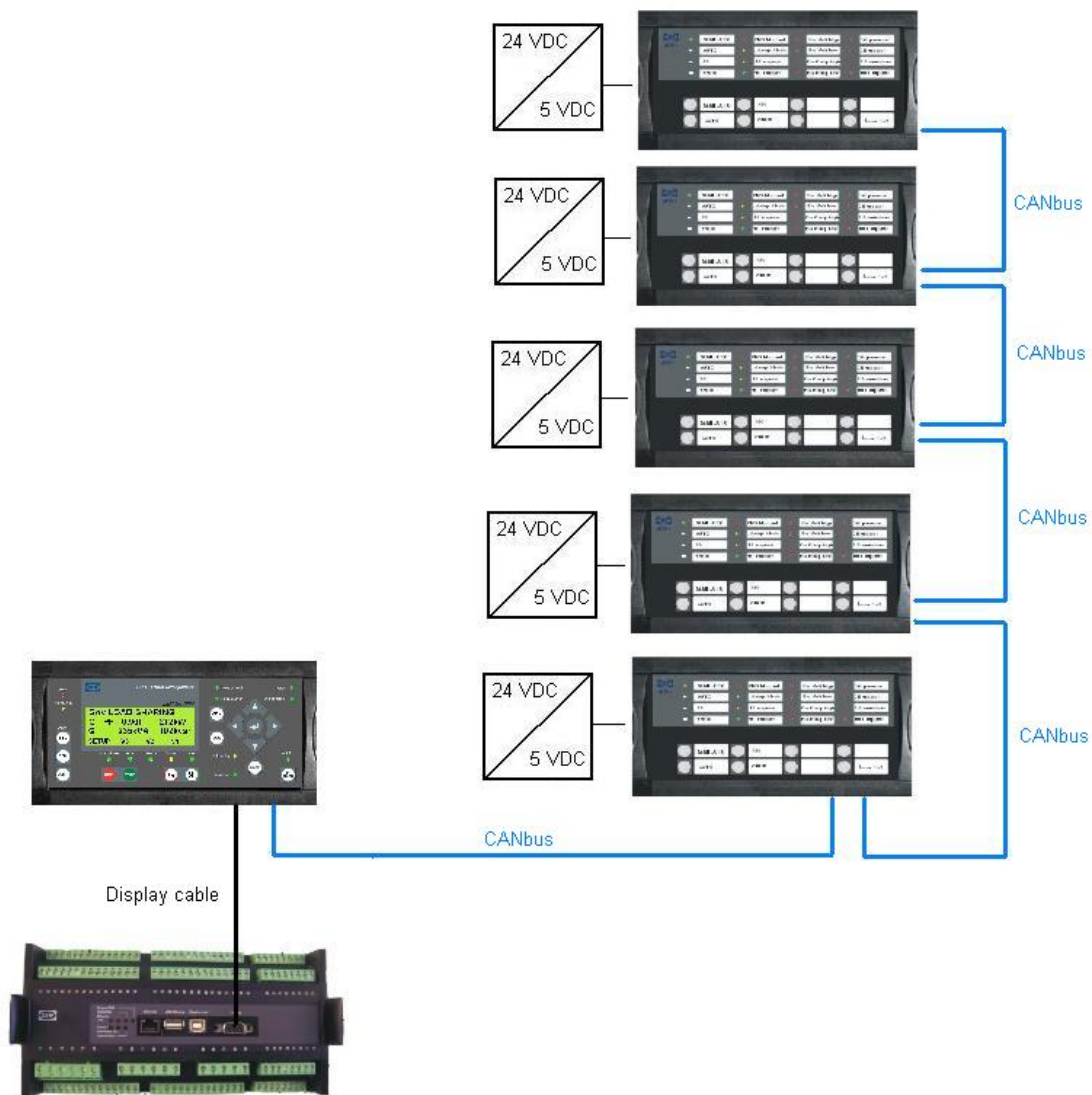
This option includes additional operator panel(s) (AOP-2) which can be connected to the standard display via a CANbus communication line. The AOP-2 has 16 configurable LEDs and eight buttons.



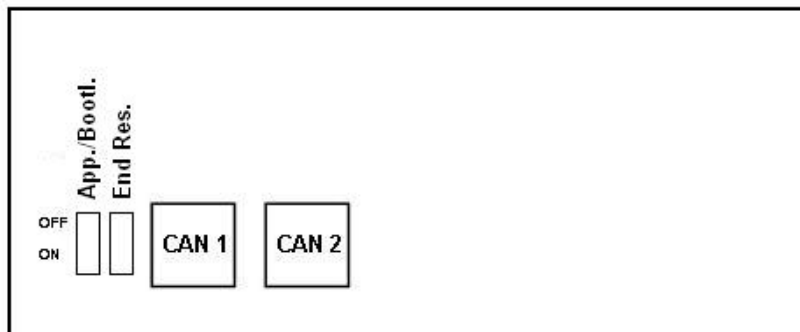
A maximum of five AOP-2 units can be connected to the DG command unit.



The maximum length of the CANbus line is 200 m.



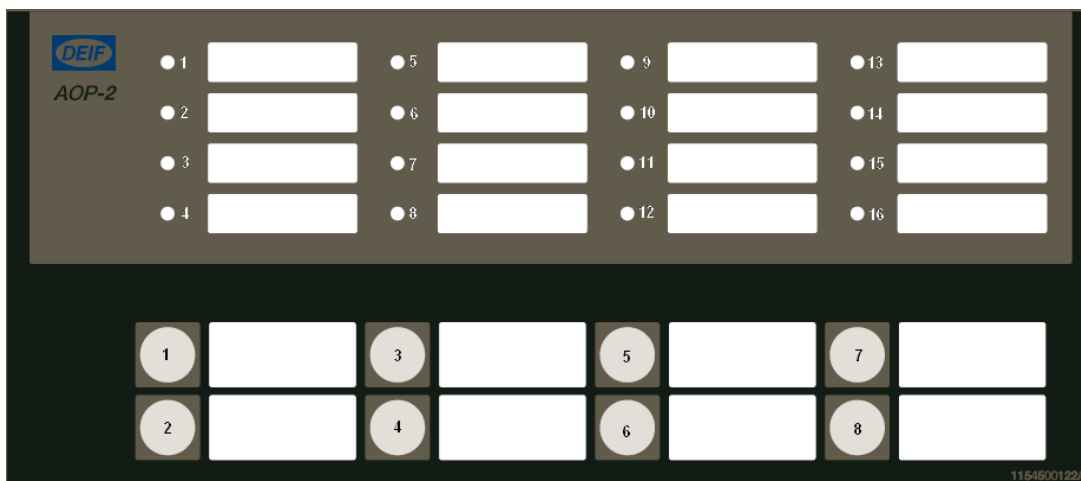
Back view of the AOP-2



Connectors:

- CAN 1: Auxiliary DC supply and CANbus communication to/from other DU-2 or AOP-2 units.
- CAN 2: CANbus communication to/from other DU-2 or AOP-2 units and status relay output.
- End resistor: Dip switch for 120 Ohm end resistor for the CANbus communication. Dip switch no. 2 is not to be used.
- App./Bootl.: Possibility to upgrade the display software.

Front side view



As shown on the drawing, the configurable LEDs are named 1 to 16, and the buttons are named 1 to 8.

CAN ID configuration

The CAN ID for the AOP-2 can be changed by the following procedure:

1. Push button no. 7 and no. 8 at the same time to activate the CAN ID change menu; this will activate the LED for the present CAN ID number, and LED no. 16 will be flashing.
2. Use button no. 7 (increase) and button no. 8 (decrease) to change the CAN ID according to the table below.
3. Press button no. 6 to save the CAN ID and return to normal operation.

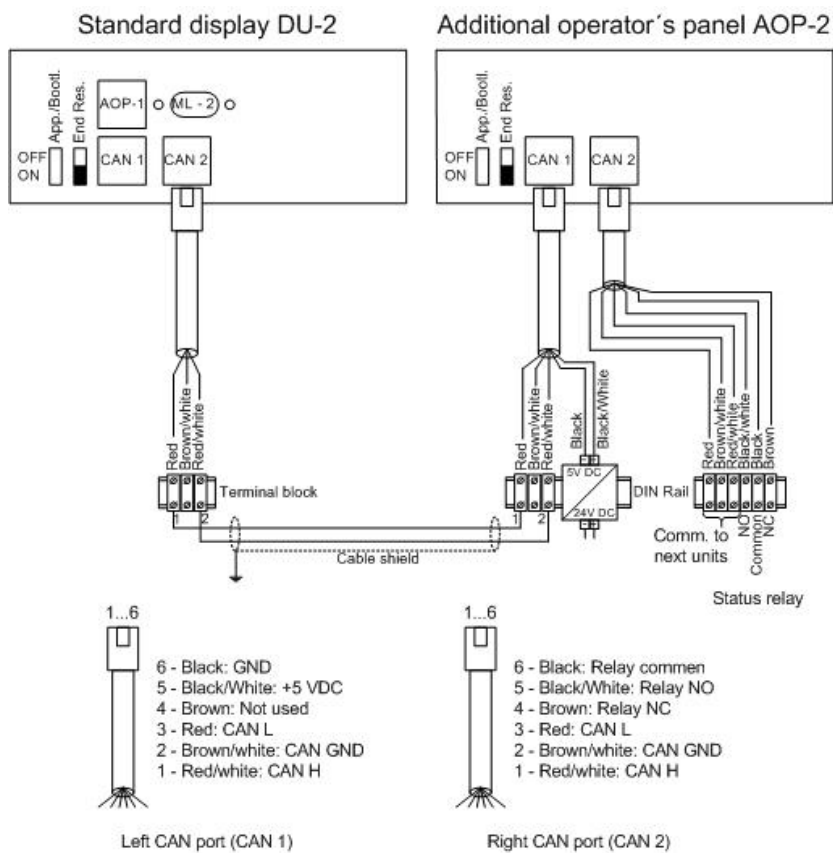
Selection of CAN ID:

CAN ID	Indication of CAN ID selection
0	CANbus OFF: LED 16 flashes
1	LED 1 light steady + LED 16 flashes (default value)
2	LED 2 light steady + LED 16 flashes
3	LED 3 light steady + LED 16 flashes
4	LED 4 light steady + LED 16 flashes
5	LED 5 light steady + LED 16 flashes

Status relay

The status relay will activate approximately five seconds after power up.

Wiring



- i** A DC/DC converter for the DC supply voltage and 2 x 1 m cable with an RJ12 plug in one end and stripped wires in the other end is included in the AOP-2 delivery.
- i** The cable between the terminal blocks should be shielded twisted pair.
- i** The maximum length of the CANbus line is 200 m.

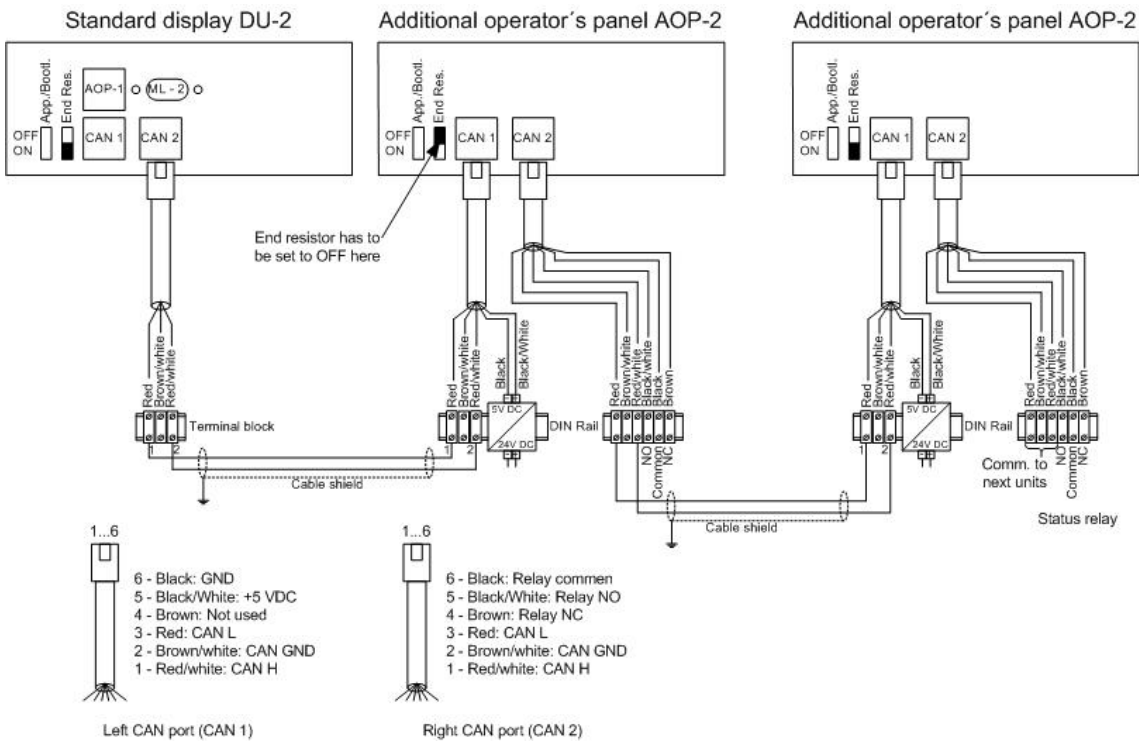
When using more than one AOP-2 unit, all of the AOP-2 units will have the same ID number, i.e. number 1 (default). This enables the possibility to have one AOP-2 in the machine control room, one AOP-2 on the bridge and one additional AOP-2 in another switchboard. The end resistor has to be adjusted if more than one AOP-2 is used in the system.

End resistor on display CANbus

- 2 units connected: Dip switch no. 1 on both units should be set to ON (default).
- 3 units connected: Dip switch no. 1 on unit 1 and unit 3 should be set to ON and OFF on unit 2.
- More than 3 units connected: Dip switch no. 1 on the first and the last unit on the CANbus line should be set to ON and OFF on the other units.

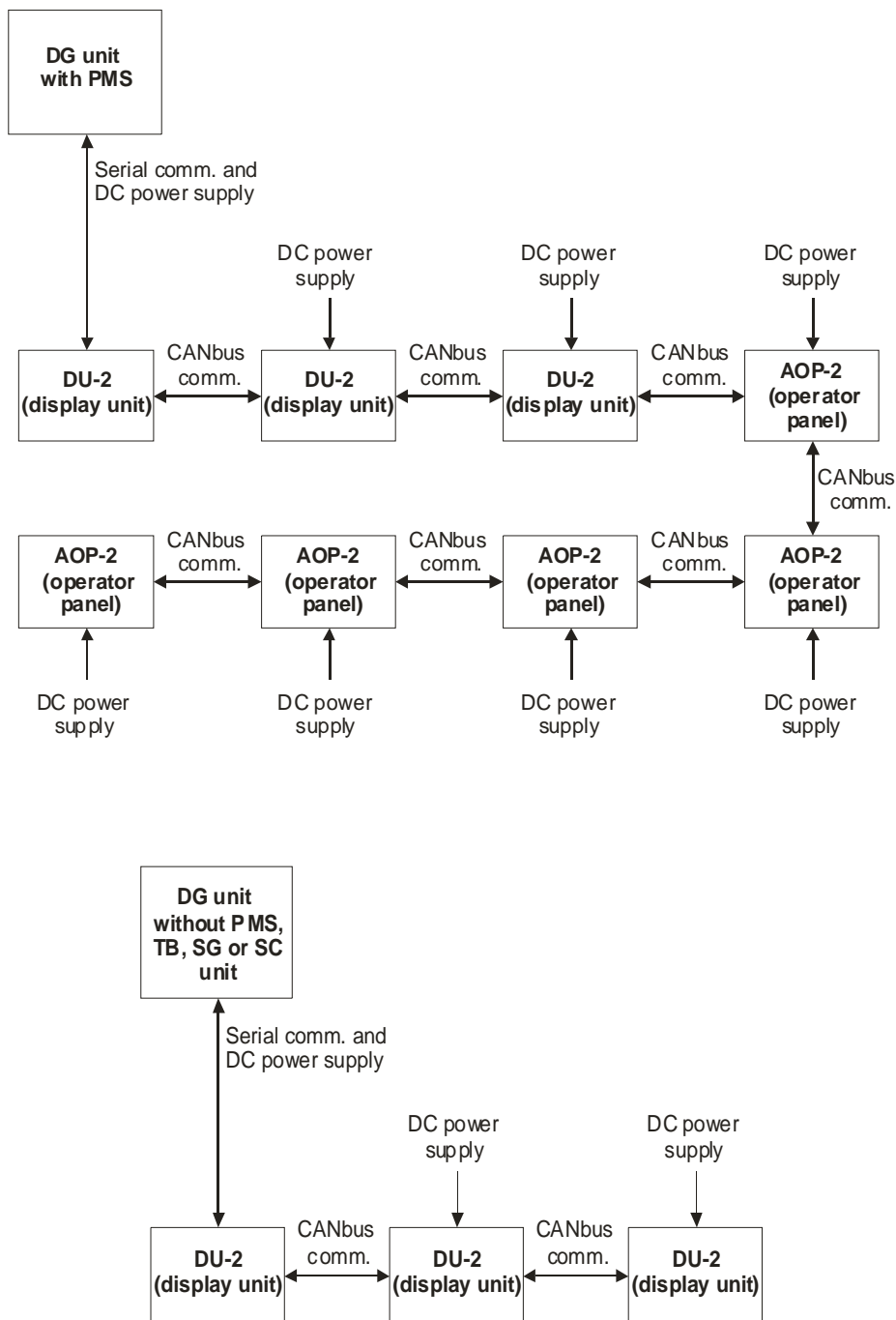
The end resistor is placed on the back of the AOP-2.

Example with one display unit and two AOP-2 units:



3. Functional description

Below is a principle diagram of the connection of the additional displays and operator's panels.



CAN ID configuration

Only one DU-2 has to be connected to the PPM unit by means of the serial cable. The rest of the displays and AOP-2 units are connected to each other with CANbus communication lines and get their information through the DU-2 unit connected to the ML-2 unit.

DEIF A/S reserves the right to change any of the above