Communication Interface Electric Drive - NMEA 2000®

Software Update, Setting Parameters and Instances

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Inhalt

1 Software Update

When connected to the USB port of a PC or Laptop, the hardware of the »Communication Interface Electric Drive - NMEA 2000®« works like an USB removable storage device on which the update files can be stored.

1.1 Carry out a Software Update

Step by step

- Connect the Communication Interface to the USB port.
  - ► The interface is now available as a storage device.
- Copy the files **»avr32fwupgrade.uc3«** and **»update.now«** via USB to the storage device.
- Safely disconnect the interface from the PC / Laptop.
- Restart the Communication Interface.
  - ► The software update is carried out, visible by the flashing yellow LED.

NOTE: Since the »Communication Interface Electric Drive - NMEA 2000®« is not compatible with the fpCAN bus, the software of the interface cannot be updated using the update function of the xControl / fpControl system.

2 Setting Parameters

So that the values of power, rpm and torque are correctly displayed, you can parameterize the »Communication Interface Electric Drive - NMEA 2000®«.

There are two ways of setting the parameters. One possibility is a parameter text file that you transfer to the Communication Interface via the USB port of your PC / Laptop.

The second way is transmitting a CAN frame including the parameter values to the Communication Interface.

Let us look at both options in detail.

2.1 Parameterization with a parameter file

When connected to the USB port of a PC or Laptop, the hardware of the »Communication Interface Electric Drive - NMEA 2000®« works like an USB removable storage device on which the parameter file can be stored.

The file name must be **»params.set«**. The file content must be structured exactly as follows:

```
Power:<power in 0.1kW> Speed:<speed in rpm> Torque:<torque in Nm>
```

See an example of the file content for a drive system with 10 kW and 1200 rpm:

```
Power:100 Speed:1200 Torque:80
```

Step by step

- Connect the Communication Interface to the USB port.
  - ► The interface is now available as a storage device.
- Copy the prepared file »params.set« via USB to the storage device.
- Safely disconnect the interface from the PC / Laptop.
- Restart the Communication Interface.
  - ► The parameters are set.

2.2 Parameterization with a CAN message

Transmit a CAN message to CAN Port0 (input data from drive) and address 16 (0x10 hexadecimal) with the following content:

Data Byte	Content	Resolution
0	'F'	
1	'P'	
2	Power [kW], LSB	0,1 kW / bit
3	Power [kW], MSB	
4	Speed [rpm], LSB	1 rpm / bit
5	Speed [rpm], MSB	
6	Torque [Nm], LSB	1 Nm / bit
7	Torque [Nm], MSB	

Table 2.1: Content of the CAN message for parameterization

3 Setting Instances

There are three ways to set the NMEA 2000® system instance and device instance:

- Writing a command to the appropriate PGNs via the Command Group Function PGN 126208,
- copying a text file via USB to the device,
- or transmitting a CAN message.

3.1 Copying a text file via USB to the device

The file name must be **»insts.set«**. The file content must be structured exactly as follows:

```
ECU:<no> FCT:<no> VSYS:<no> ENG:<no> BAT:<no> CON:<no>
```

See an example of the file content: `ECU:1 FCT:0 VSYS:0 ENG:1 BAT:2 CON:0`

3.2 Transmitting a CAN message

Transmitting a CAN message to address 17 (0x11 hexadecimal) with the following content:

Data Byte	Content	Description
0	'F'	
1	'P'	
2	ECU	device type instance used by the name field
3	FCT	function instance used by the name field
4	VSYS	vehicle system instance used by the name field
5	ENG	engine instance used by PGN 127488 / 127489
6	BAT	battery instance (to transmit voltage and current), used by PGN 127508
7	CON	connection instance, used by PGN 127751

Table 3.1: Content of the CAN message for setting the instances

NOTE: The NMEA 2000® ECU instance is a combination of ECU and FCT. For further information refer to the NMEA 2000® documentation.

4 Further information

For further information on the »Communication Interface Electric Drive - NMEA 2000®«, please refer to the corresponding article in the Fischer Panda Knowledgebase:
https://knowledgebase.fischerpanda.de/?p=4923