

Technical Bulletin 197

Updated PROFINET GSDML Files and New OPT-3-PFNET-IN Module Released

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Products Affected	Optidrive P2 and Optidrive Eco

Overview

Inverter Drives is introducing the new OPT-3-PFNET-IN PROFINET communication module.

The communication hardware has changed, but the standard Optidrive P2 and Optidrive Eco process-data arrangement is retained to minimise changes to existing PLC applications.

GSDML selection and PROFINET module replacement

OPT-2-PFNET-IN and OPT-3-PFNET-IN can be used side by side in the same PLC project and on the same PROFINET network. Each device must, however, be configured using the GSDML file that matches the installed communication module.

IMPORTANT: OPT-3-PFNET-IN IS NOT A DROP-IN REPLACEMENT FOR OPT-2-PFNET-IN

The OPT-2-PFNET-IN and OPT-3-PFNET-IN GSDML files are **not interchangeable**.

Replacing an OPT-2-PFNET-IN with an OPT-3-PFNET-IN requires the PLC project to be updated. The existing PROFINET device must be replaced in the PLC hardware configuration with the corresponding OPT-3-PFNET-IN device using the matching GSDML file, and the updated hardware configuration must then be downloaded to the PLC.

If the PLC project cannot be updated, or the updated hardware configuration cannot be downloaded to the PLC, OPT-2-PFNET-IN must be used as a like-for-like replacement. Do not substitute OPT-3-PFNET-IN.

Updated GSDML files and hardware catalogue location

The GSDML files for both OPT-2-PFNET-IN and OPT-3-PFNET-IN have been updated and are available to download from inverterdrives.com.

Both files now use a common vendor location in the PROFINET hardware catalogue, with a separate product folder for each communication module. This makes it easier to identify and select the correct device when both module generations are used in the same project.

After installing the updated GSDML files, the devices are located under:

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PROFINET IO
└─ Drives
    └─ HMS Industrial Networks
        └─ OPT-2-PFNET-IN
            │ └─ Eco (OPT-2-PFNET-IN)
            │ └─ P2 (OPT-2-PFNET-IN)
            │
            └─ OPT-3-PFNET-IN
                │ └─ Eco (OPT-3-PFNET-IN)
                └─ P2 (OPT-3-PFNET-IN)
  
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The current GSDML files are:

Product	GSDML file
OPT-2-PFNET-IN	GSDML-V2.3-HMS-OPT2PFNETIN-20260924.xml
OPT-3-PFNET-IN	GSDML-V2.46-HMS-OPT3PFNETIN-20260924.xml

Download the matching approved package from invertekdrives.com.

Module label identification:

- OPT-2-PFNET-IN: 54-PFNET-P2,
- OPT-3-PFNET-IN: 54-M40PF-00.

What remains the same

The standard process-data arrangement remains the same for both modules:

- Four 16-bit words, or 8 bytes, in each direction: PLC outputs to the drive and drive feedback to PLC inputs.
- The word order and standard process-data functions are retained.
- The GSDML automatically assigns Output 4W to slot 1 and Input 4W to slot 2. Manual mapping of the four standard words in each direction is not required, although PLC addresses and tags must still be checked.
- Both products use PROFINET RT with Optidrive P2 and Optidrive Eco. The supplied GSDML files do not enable IRT.
- Both GSDML files retain the same eight drive start-up parameters for each drive family. P1-12 defaults to 4: *Fieldbus Control* unless changed in the PLC hardware configuration.

What changes with OPT-3-PFNET-IN

OPT-3-PFNET-IN uses different PROFINET device, module and submodule identification from OPT-2-PFNET-IN.

It therefore requires:

- its own GSDML file;
- the corresponding OPT-3-PFNET-IN device to be selected in the PLC hardware configuration;
- the updated hardware configuration to be downloaded to the PLC.

For this reason, OPT-3-PFNET-IN is not a drop-in replacement for an OPT-2-PFNET-IN in an unchanged PLC project.

In addition, MRP Client is supported by OPT-3-PFNET-IN when used in a correctly configured PROFINET ring. MRP is not supported by OPT-2-PFNET-IN.

Process data

The mapping below applies to both PROFINET modules:

PDI = PLC outputs (PLC to drive)

PDO = PLC inputs (drive to PLC).

Word	PLC to drive - PDI / slot 1	Drive to PLC - PDO / slot 2
1	Control Word	Status Word
2	Frequency Reference (x10)	Actual Frequency (x10)
3	P5-14 Selection	P5-12 Selection
4	P5-13 Selection	P5-08 Selection

Configure start-up parameters in the PLC project

Select your drive in the PLC project's hardware configuration and open its module parameter settings.

Configure the required start-up values, then download the updated hardware configuration to the PLC.

At each PROFINET start-up parameterisation, the PLC writes these values to the drive and overwrites different local settings. Do not rely on changes made only at the drive. This applies to all eight parameters below, not only P1-12.

Parameter	Function	P2 default	Eco default
P1-12	Primary Command Source	4: Fieldbus Control	4: Fieldbus Control
P5-05	Communications Loss Timeout	10: 1 s	10: 1 s
P5-06	Communications Loss Action	0: Trip	0: Trip
P5-07	Fieldbus Ramp Control	0: Disable	0: Disable
P5-08	PDO Word 4 data selection	0: Motor Torque	1: Motor Power
P5-12	PDO Word 3 data selection	0: Motor Current	0: Motor Current
P5-13	PDI Word 4 data selection	0: Fieldbus Ramp Time	0: Fieldbus Ramp Time
P5-14	PDI Word 3 data selection	0: Torque Reference / Limit	0: Off

The table shows GSDML start-up defaults, not drive factory defaults.

Review P5-05 and P5-06 and test the required loss-of-communication behaviour before operation. Other drive settings, such as P1-14, P4-06, P4-07 and P9-38, are not part of these eight start-up records.

When replacing OPT-2-PFNET-IN with OPT-3-PFNET-IN

When replacing an existing OPT-2-PFNET-IN:

1. Install the approved OPT-3-PFNET-IN GSDML.
2. In the PLC hardware configuration, replace the existing OPT-2-PFNET-IN device with:
 - P2 (OPT-3-PFNET-IN) for Optidrive P2, or
 - Eco (OPT-3-PFNET-IN) for Optidrive Eco.
3. Check the PROFINET device name and IP settings.
4. Check PLC I/O addresses and existing tags.
5. Review all eight start-up parameter values.
6. Download the updated hardware configuration to the PLC.
7. Test drive control, speed reference, status feedback and communication-loss behaviour before returning the machine to service.

Do not install OPT-3-PFNET-IN as a replacement if the PLC hardware configuration cannot be updated and downloaded. In this situation, use OPT-2-PFNET-IN as the like-for-like replacement.

Existing PLC control logic can normally continue to use the same four control words and four feedback words, provided that the addresses, tags and start-up settings are correctly assigned after the hardware configuration has been updated.

Updated supporting documentation

The updated User Guide is **82-PFNET-IN_V2.04**.

Both updated GSDML files include English, German, French, Spanish, Italian and additional display languages.

The updated GSDML files also introduce revised catalogue identification and a common vendor location under HMS Industrial Networks, with separate OPT-2-PFNET-IN and OPT-3-PFNET-IN product folders.

The standard process-data mapping, parameter numbers and drive start-up parameter functions remain unchanged.