

Technical Note



Migrating from an existing 5207/52x8-DFNT-HART to PLX51-HART-4I

Document Code: TN_PLX51HART4I_Migrating from 5207/52x8-DFNT-HART_01-1905

Date: May 22, 2019

Revision: 01

Only applicable with ControlLogix and CompactLogix.

Converting from:

- 5207-DFNT-HART
- 52x8-DFNT-HART



Converting to:

- PLX51-HART-4I



How to Contact Us

Asia Pacific

Regional Office

+60.3.7941.2888

support.ap@prosoft-technology.com

North Asia

(China, Hong Kong)

+86.21.5187.7337

support.ap@prosoft-technology.com

Europe/Middle East/Africa

Regional Office

+33.(0)5.34.36.87.20

support.emea@prosoft-technology.com

Latin America

Regional Office

+52.222.264.1814

support.la@prosoft-technology.com

North America

Corporate Office

+1.661.716.5100

support@prosoft-technology.com

It is highly recommended to review the PLX51-HART-4I training video on ProSoft Technology's YouTube channel: <https://www.youtube.com/watch?v=EvkF5s7zCqc>

- 5207/52x8-DFNT-HART use **ProSoft Configuration Builder**
- PLX51-HART-4I uses **ProSoft PLX50 Configuration Utility**

You can download the tools free of charge on our website:

- ProSoft Configuration Builder:
https://www.prosoft-technology.com/Products/ProSoft-Software/ProSoft-Configuration-Builder#related_downloads
- ProSoft PLX51 Configuration Utility:
https://www.prosoft-technology.com/Products/ProSoft-Software/ProSoft-PLX50-Configuration-Utility#related_downloads

The **PLX51-HART-4I** is built with 4 HART channels, you will have to use 2 gateways to connect up to 8 analog input devices, 3 gateways to connect up to 12 analog input devices...

Additional features/functions are available on PLX51-HART-4I:

- FTD-DTM compatible for Asset Management Systems
- Ethernet configuration and diagnostic
 - HART device discovery, configuration, status, statistics, trends...
 - HART analog input calibration

5207/52x8-DFNT-HART_01-1905

- **52x8-DFNT-HART:**

This gateway is an EtherNet/IP-HART analog solution, 5208 supports 4 channels and 5228 supports 8 channels.

Only one HART device is connected per channel to get the analog value and to communicate over HART protocol.

Assuming device configuration is as below for a 4 channels gateway.

```
[HART Analog Card 0]
Database Register      : 3000
CH1 Low                : 0
CH1 High               : 0
CH2 Low                : 0
CH2 High               : 0
CH3 Low                : 0
CH3 High               : 0
CH4 Low                : 0
CH4 High               : 0

[HART Port 0]
Enabled                : Yes
Preambles              : 5
Primary Master         : Yes
Retry Count            : 3
DB Address Status      : 100
Command Count         : 0
Auto-Poll Code         : p2p
Auto-Poll DB Address   : 2000
Auto-Poll Swap Float   : No change
Max Device Count       : 1
```

- Analog value for each channel is stored from the word address set into **Database Register** parameter (i.e.: word address 3000, or Int_Data[3000]). Two words per channel have to be read to get the analog value.
- Data read with Auto-poll feature are stored from word address 2000 Int_Data[2000] according **Auto-Poll DB Address** parameter. The result has a size of 50 words.

Into ControlLogix/CompactLogix program, multiple messages (Class 3) are set to read those values. Those MSGs target the Int_Data[..] corresponding to word addresses set for **Database Register** and **Auto-Poll DB Address** parameters.

By using PLX51-HART-4I and once each channel configuration is set. The PLX51 is declared into the I/O Configuration of ControlLogix/CompactLogix programming tool. Class 1 method is used, previous messages are not used. Controller Tags and UDTs are imported, they will provide all information into the Input Image.

The sample ladder, Controller Tags and UDTs can be downloaded with following link.

https://www.prosoft-technology.com/content/download/13052/250594/version/2/file/PLX51_HART_4I_Sample_Ladder.zip

- **5207-DFNT-HART:**

This gateway is an EtherNet/IP-HART multidrop solution. Each channel supports up to 15 HART devices. Usually the Auto-Poll feature is used. 50 words of data are provided per devices, and those data are certainly read by using multiple messages into the ControlLogix/CompactLogix program. Those messages read data from the internal word address set with **Auto-Poll DB Address** parameter.

By using the PLX51-HART-4I on multidrop mode, the principle is different. Instead of to have a device sending a list of command (Auto-Poll feature) and storing data into a database, all messages have to be set into the ControlLogix/CompactLogix program.

Those messages are CIP Generic custom type, they are used to set the HART channel, HART id, HART command which will be passed to the HART device through the PLX51.

Another technical note describes how to set those messages.

https://www.prosoft-technology.com/content/download/13263/293745/version/4/file/PLX51_HART_4I_4O_TN001_Multidrop_Setup.pdf

The 5207-DFNT-HART Auto-Poll feature uses below command list. Those command will have to be set into CIP Generic custom messages.

CMD	Description
0	Read Unique Identifier
3	Read Current and Four Dynamic Variables
13	Read Tag, Descriptor and Date
14	Read PV Sensor Information
15	Read Output Information

_____END OF TECHNICAL NOTE_____