

PGT-13-S



BU	BU71
Interface	HIPERFACE DSL®
FAQ	FAQ

Release date	10/2021 (Host Mode / Hardware) 12/2022 (Emulator Mode / Licence)
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[DSP-Link](#)

Links

[PGT-13-S \(sick.com\)](#)

[Product Information DE](#)

[Product Information EN](#)

[Operating Instruction DE/EN](#)

[Technical Information \(HTTP REST API\) DE/EN](#)

[Ready for sales - PGT-13-S Master mode](#)

[Workspace PGT-13-S](#)

Further information to the PLP: [PGT-13-S](#)

Sales documents:

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FAB-Sheet_PG...13-S_EN.pptx



MIP_PGT-13-S_EN.pptx



2024_06_14 PGT-13-S Hos...de with video link

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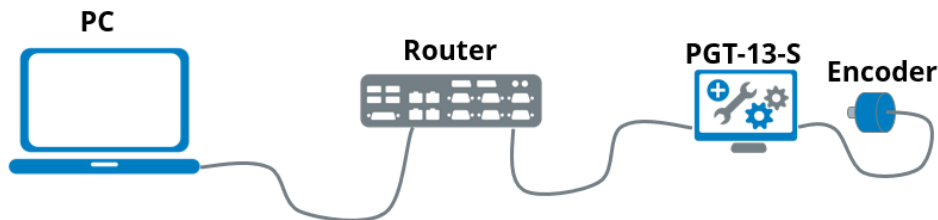
Basic Information:

The Ethernet Connection

https://video.sick.com/media/t/0_fc4fc6j2

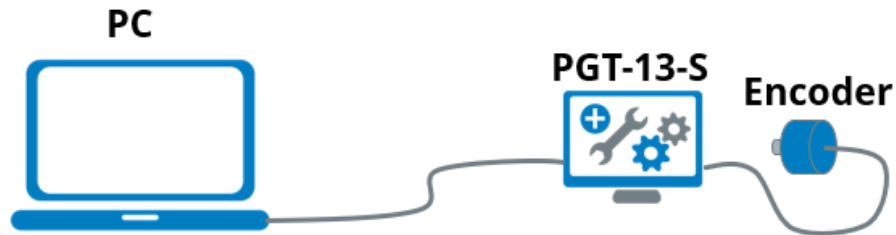
How to connect the PGT-13-S to a PC?

1. Via a Network

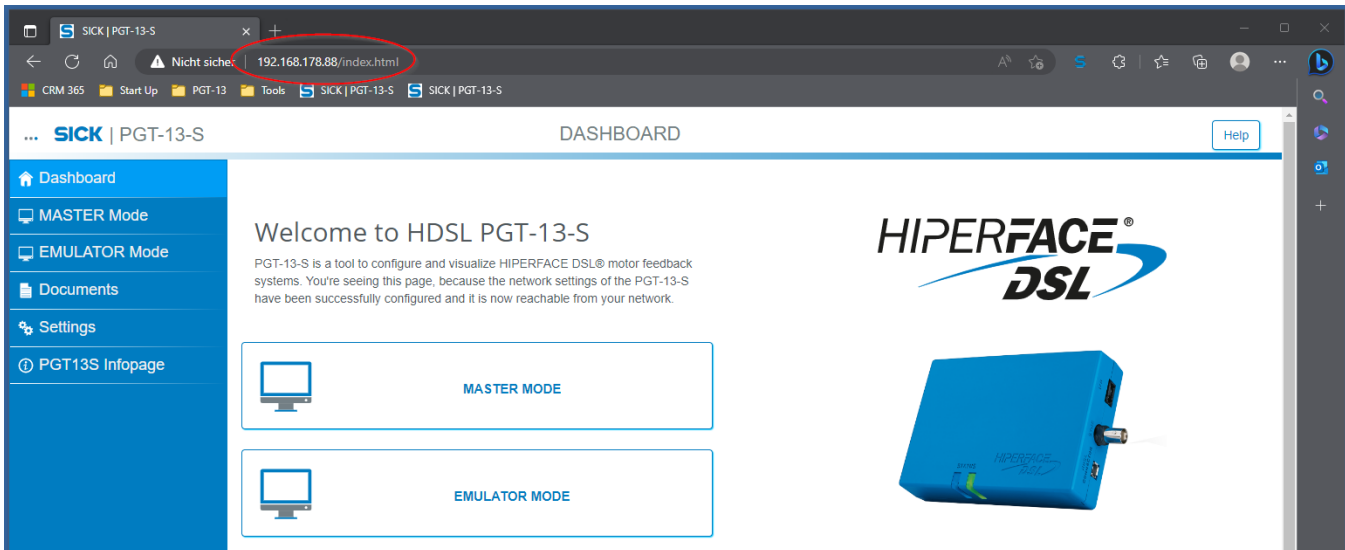


- a. You can locate your device via the IP-address search with **SOPAS recommended way**
- b. You can locate your device via the unique device name, if your network router supports the **DNS server**.
The unique device name can be found on the type label of the device.
The name of the device is: "https://pgt13s'serialnumber" the 'serialnumber' can be found on the type label.
- c. Use a fix, manual adjusted, IP address

2. Via a direct connection



- a. You can locate your device via the IP-address search with SOPAS
- b. Use a fix, manual adjusted, IP address



Cookies?

Please accept the "cookies", because this allows the PGT-13-S to store some user specific settings. Otherwise, the PGT-13-S will always start up with the default settings.

There is no possibility to store the settings on the PGT-13-S itself.

Problems with the Ethernet connection?

In the SICK company network or another network

Depending on the location, it could be that the network devices has to be recognized by the IT. Another possibility is to make a direct connection with a USB network adaptor.

In a non company network like: at home, machine, lab, ...

Here are 2 Links, to pages which describes, how to get a connection to devices in the local network at home or on customer site. This information is also relevant, if you make a point to point connection with the PGT-13-S

- [Windows Defender Desktop Firewall](#)
- [Additional information for service technicians and RnD](#)

Host Mode (Master Mode)

The "Host Mode (Master Mode)" is to communicate with an encoder. It can be used to check and program an Hiperface DSL encoder.



There are several tabs, with different functionalities:

Connection

The tab "Connection" gives feedback about the quality of the Hiperface DSL connection between the PGT-13-S and the encoder.

The screenshot shows the 'CONNECTION' tab in the SICK PGT-13-S interface. The left sidebar contains navigation options: Dashboard, MASTER Mode, Connection (selected), Datasheet, Administration, Sensor Data, Sensor Errors, EEPROM, User Data, Resource Dictionary, HDL Messaging, EMULATOR Mode, Documents, Settings, PGT13S Infopage, Update Rate (100 ms), and MFB Access Level: 0. The main content area is titled 'CONNECTION' and includes a 'Help' and 'Fast Login' button. An information icon states: 'This page gives you an overview of the connection status.' Below this, there are two sections: 'HDSL Connection' and 'Supply Values'. The 'HDSL Connection' section lists: HDSL Link (Up), Line Delay (100 ns), Cable Length (0 - 10 m), Master RSSI (0 to 12), Slave RSSI (0 to 7), and Quality Monitor (0 to 15). There are also two buttons: 'HDSL Output Enable' (a toggle switch) and 'HDSL Protocol Reset'. The 'Supply Values' section lists: Encoder's Supply Voltage (11.81 V) and Current Consumption (55.40mA). The footer shows '© 2021 - 2022 SICK AG'.

HDSL Connection

1	HDSL Link	Feedback, if the connection to the encoder is active
2	Line Delay	Time delay, in the Hiperface DSL frame, between the master (PGT-13-S) request and the slave (encoder) response
3	Cable Length	Calculated cable length. It is calculated from the "Line Delay"
4	Master RSSI	Signal quality of the encoder's response
5	Slave RSSI	Signal quality of the master's request
6	Quality Monitor	Event based signal monitoring
7	HDSL Output enable	Here it is possible to switch on/off the link to the encoder
8	HDSL Protocol Reset	Here it is possible to do a Hiperface DSL protocol reset

Supply Values

1	Encoder's Supply Voltage	The supply voltage from the PGT-13-S to the encoder
2	Current Consumption	The current consumption of the encoder, measured by the PGT-13-S


Datasheet

In the tab "Data sheet" you find the basic information about the connected encoder.

All shown values are directly read out values from the encoder's resources. There is nothing calculated or expected by the PGT-13-S.

... SICK | PGT-13-S DATASHEET Help Fast Login

- Dashboard
- MASTER Mode ^
- Connection
 - Datasheet**
 - Administration
 - Sensor Data v
 - Sensor Errors v
 - _EEPROM**
 - User Data
 - Resource Dictionary
 - HDSL Messaging
- EMULATOR Mode
- Documents
- Settings
- PGT13S Infopage
- Update Values
- MFB Access Level: 0

 Overview of the connected sensor's technical parameters, concerning Resources from the Identification and Monitoring Nodes.

Identification		Specification	
Type	EEM37-0KF0C017A	Operating temperature range min	-40 °C
Encoder Type	Rotative	Operating temperature range max	125 °C
Resolution per revolution	17 bit	Operating speed	6000 rpm
Measurement step per revolution	131072steps/turn	Supply voltage min	7 V
Number of the absolute ascertainable revolutions	Multiturn 4096revolution	Supply voltage max	12 V
User Memory Size	8192byte		
HW Revision	HW_A		
Serial number	U9390004T		
FW Revision	1.1.0.377R		
FW Date	24.02.21		

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Administration

https://video.sick.com/media/t/0_vic7x064

... SICK | PGT-13-S ADMINISTRATION Help Fast Login

Dashboard
 MASTER Mode ^
 Connection
 Datasheet
 Administration
 Sensor Data v
 Sensor Errors v
 _EEPROM
 User Data
 Resource Dictionary
 HDSL Messaging
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 PGT13S Infopage

Encoder Administration related information and settings, concerning Resources from the Identification Node.

Encoder Reset
 Execute an encoder reset, by accessing RID 100h "RESET"; offset 0. The encoder will be available after the specified HDSL start-up time 500ms.

Set Access Level
 Select the encoder Access Level, which determines which functions are accessible by the user application. The access level required for each encoder resource can be read out using a direct access. Please see the Resource Element Propertiers under Resource Dictionary tab.
 Access Level
 Access Key

Encoder Factory Settings
 Allows resetting of all user-defined encoder settings, by accessing RID 108h. Warning! Operation cannot be undone!
 Parameter

User-Defined Encoder Index
 Change the User-Defined Encoder Index, by accessing RID 109h. Used in multi-axis systems.
 Index 0

Set Position
 Using this resource, an arbitrary position value can be allocated to the current mechanical shaft position. With synchronous servo drives, the position information is used for motor commutation. The incorrect use of this resource can adversely affect the motor.
 Set position to the following value

MFB Access Level: 0

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Encoder Reset

Performs a soft reset of the encoder (resource 100h "RESET")

Set Access Level

With this functionality you can set the access level of the encoder. In total, there are 7 access levels available. For the customer, there are 4 access levels accessible.

(resource 104h "SETACCESS")

Access level	Access Code
1	1111
2	2222
3	3333
4	4444

Encoder Factory Settings

It is possible to set the encoder back to factory settings. There are also several levels available, depending how deep the factory reset should be. (resource 108h "FACRESET")

It is possible to reset the following things:

- Set Position
- Counter
- delete user data
- delete error messages
- delete the histogram

To execute the factory reset, there is (depending on the level) a password needed.
The passwords are available in the Hiperface DSL documentation. Available passwords are:

- RESETUFS
 - reset file system
- RESETALL
 - reset file system
 - reset error protocol (but not the histogram)

User-Defined Encoder Index

With the "user defined encoder index", it is possible to give the encoder a unique number in the system. This is needed, if a customer has a Safety drive with 2 or more axis. SAFEDSL017 & SAFEDSL022 (resource 109h "ENCIDENT" & resource 111h "ENCINDEX")

Set Position

To set the position to a defined value.
(resource 101h "SETPOS")

Diagnostic Report

The diagnostic report is an overview of all the data, which can be read out in the Master mode.

It can be used, for the customers, to send relevant information to SICK, to get a 1st feedback about the encoder.

Here an example of a printed *.pdf:



Sensor Data

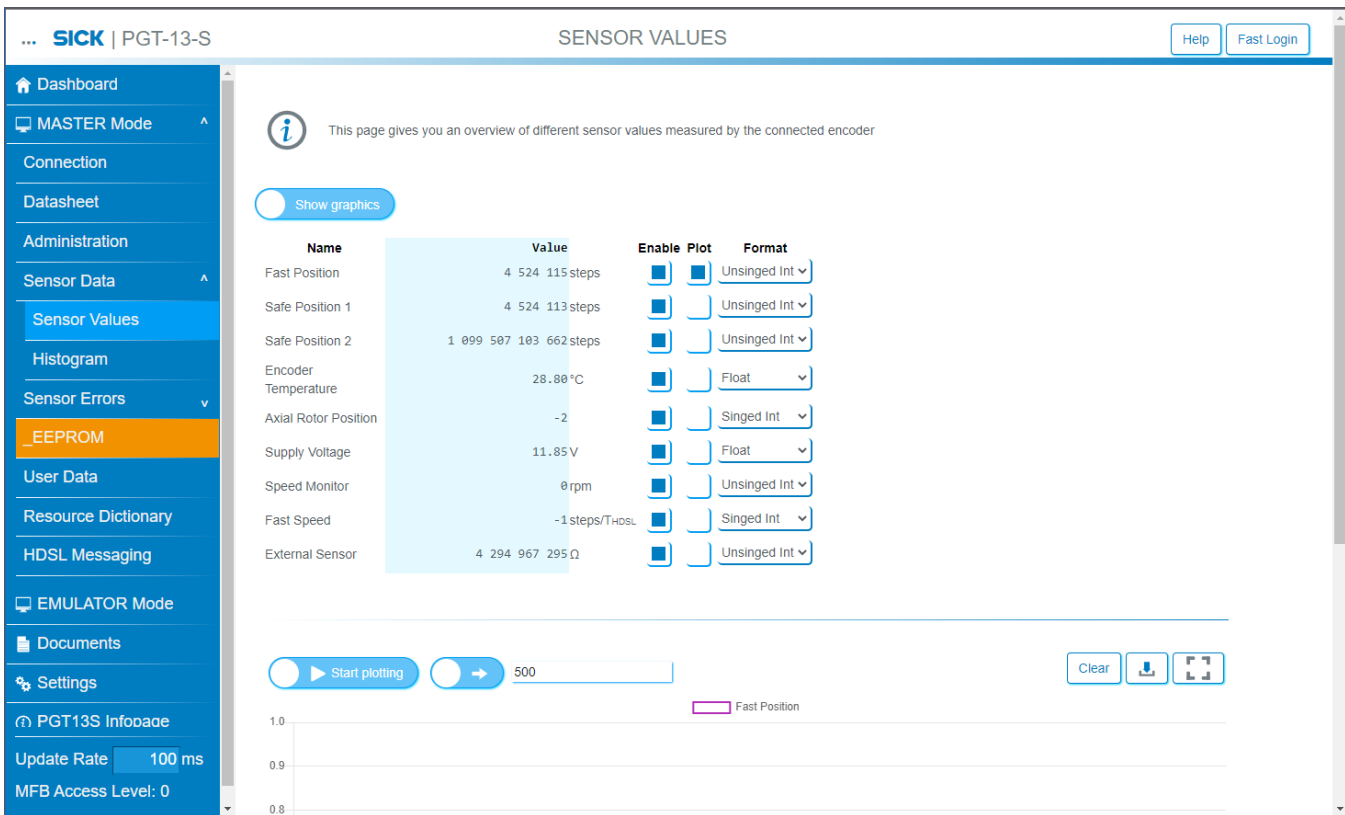
https://video.sick.com/media/t/0_pkbjk077

In the tab "sensor data" we have an overview of the measured values and the diagnostic values of the connected sensor.

The tab is split into 3 parts:

Sensor Values

The part "Sensor Values shows cyclic and acyclic measured sensor values (position, speed, LED current, temperature, supply voltage, ...)



Not all values are enabled at the start of the page. They need to be "enabled" manually. There is a checkbox for the "Plot". This is to mark, which values are showed in parallel in the plot. It is also possible to choose the "Format" how the value is displayed (binary, hexadecimal, unsigned Integer, Float with decimal point).

With the button "Show graphics", it is possible to enable some visualization of the displayed values:

There is also a "Plot" function available.

To use this, you have to choose the needed values with the checkbox "Plot". Then you can start with "start plotting" to record the values.

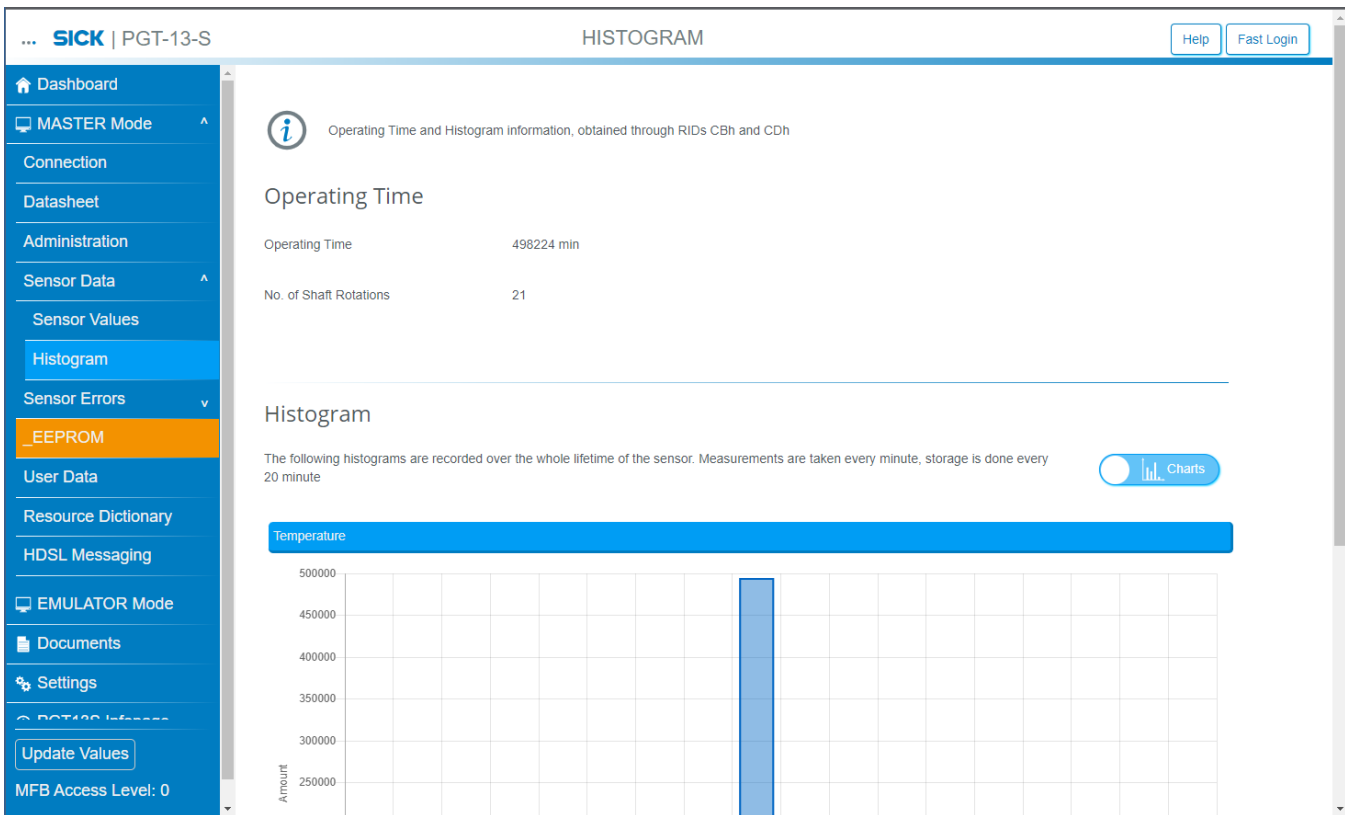
It is possible to adjust the number of measurements default value is 50. With the button "right from the number of measurements" you can switch between:

- stop after the number of measurements (default)
- continue after the defined number of measurements and delete the older one

With "Clear", you can clear the plot
 It is also possible to save the values in a "*.json" file
 There is also the possibility to view the plot in "full screen"

Histogram

The part "Histogram" gives an rough overview about how long and how the encoder was used



The Histogram functionality of the encoder, captures each minute a value. each 20 minutes, the values are stored into the EEprom.

The stored values are:

	name	comment
1	Operating time	There is a counted time (Operating time) which is the time where the encoder was powered. There is also a "remaining task time" which is the time, which is left over. In the example, the sum of "operating time" (1,774) + "remaining task time" (10,510,226) is 10,512,000 minutes, which is 20 years. this is the mission time (Tm) of the device.
2	No. of Shaft Rotations	all turns of the shaft cw and ccw
3	Temperature	The temperature range is shown in a graph in 10°C steps
4	LED current / axial rotor position / distance to the magnetic tape	The LED current range is shown in a graph in 5 mA steps The axial rotor position of capacitive encoders is shown with a value of +-2 digits.
5	Speed	The Speed range is shown in a graph in 500 1/min steps
6	Supply voltage	The Supply voltage range is shown in a graph in 1V steps

sHub (only available if a EDx35 wit external sHub is connected)

the part "sHub" reports the sHub data (if the functionality is supported by the connected device)

... SICK | PGT-13-S SHUB Help Fast Login

- Dashboard
- MASTER Mode ^
- Connection
- Datasheet
- Administration
- Sensor Data ^
- Sensor Values
- Histogram
- sHub
- Sensor Errors v
- _EEPROM**
- User Data
- Resource Dictionary
- HDSL Messaging
- EMULATOR Mode
- Documents
- Settings
- Update Rate
- MFB Access Level: 0

Currently, this page shows only the raw sHub channel values. Datasheet, Sensor Values, Administration, etc. can be found on the corresponding pages.

Enable Channel

Status bytes, PIPE_S	8	8	0	0	0	0	0	0
Data bytes, PIPE_D	128	0	128	0	128	0	128	0

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The sHub data is at the moment provided very rough. In the future, the data will be shown more comfortable. The sHub data is better visible in the tab "Sensor Values"

Sensor Errors

https://video.sick.com/media/t/0_32q0k87t

In the tab "Sensor Errors" we have an overview of the error flags and the error log of the encoder. It is also possible to do a short sensor check, where the basic functionalities of the sensor are checked.

The tab is split into 3 parts:

Error Flags

The Error Flags are showing an overview of the reported error bits from the encoder and the IP-core.

... SICK | PGT-13-S ERROR FLAGS Help Fast Login

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Error Flags
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 Fast Sensor Check
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 User Data
 Resource Dictionary
 HDSL Messaging
EMULATOR Mode
 Documents
 Settings
 Update Rate: 100 ms
 MFB Access Level: 0

ERROR FLAGS

Advanced **Normal View** Clear all Status Register Clear all Events

Encoder Status Register

Encoder Status Register	Status	Hex	Action
ENC_ST0 - 40h	ERROR	0x01; 1	Clear ENC_ST0
ENC_ST1 - 41h	OK	0x00; 0	Clear ENC_ST1
ENC_ST2 - 42h	OK	0x00; 0	Clear ENC_ST2
ENC_ST3 - 43h	OK	0x00; 0	Clear ENC_ST3
ENC_ST4 - 44h	OK	0x00; 0	Clear ENC_ST4
ENC_ST5 - 45h	OK	0x00; 0	Clear ENC_ST5
ENC_ST6 - 46h	OK	0x00; 0	Clear ENC_ST6
ENC_ST7 - 47h	OK	0x00; 0	Clear ENC_ST7

Event Register

Drive Interface	0x0B06	INT	SUM	n/a	n/a	POS	n/a	DTE	PRST	n/a	n/a	MIN	ANS	n/a	QMLW	FREL	n/a
Safe Interface 1	0x7D	SINT	SSUM	SCE	VPOS	QMLW	PRST	MIN	FRES								

Online Status

Drive Interface	0x5082	INT	SUM	FIX0	FIX1	POS	FIX0	DTE	PRST	POSTX	POSTX	MIN	ANS	FIX0	QMLW	FREL	FIX0
Safe Interface 1	0x5001	SINT	SSUM	SCE	FIX1	FIX0	VPOS	FIX0	PRST	POSTX	POSTX	MIN	FIX0	FIX0	QMLW	FIX0	FRES

There are 3 variants of views available:

- Basic
- Advanced / Normal View
- Advanced / Extended View

Please keep in mind:

After the start up of the encoder, the Bit 0 in the Byte 0 is always active (protocol was reset)
 If the connected encoder is a safety encoder, there is also the Bit 0 in the Byte 2 active (encoder self test conducted)

This is normal and the error s can be cleared.

Error Log

the error log of the Hiperface DSL encoder is a ring buffer with 16 entries. Additional to the error code, there are also further other interesting values tracked (at the error time).

... SICK | PGT-13-S ERROR LOG Help Fast Login

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 Resource Dictionary
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 Documents
 Settings
 Update Values
 MFB Access Level: 0

ERROR LOG

View the SICK encoder specific Error Log, obtained by accessing RID CCh ERRORLOG

Error Code		Description	Stamps				
Main	Additional		Rotation Speed [rpm]	Supply Voltage [V]	Technology Specific	Temperature [°C]	Time [min]
0x41	0x46	Resource Access Denied	0	11.83	65534	26.50	490871
0x41	0x46	Resource Access Denied	0	11.83	65534	30.40	490865
0x31	0x35	Critical LED Current / Rotor Position	0	11.839	2	29.70	474847
0x31	0x35	Critical LED Current / Rotor Position	0	11.83	65534	26.50	474822
0x31	0x35	Critical LED Current / Rotor Position	0	11.839	65534	23.60	474816
0x31	0x35	Critical LED Current / Rotor Position	0	11.908	65534	32.20	375472
0x31	0x35	Critical LED Current / Rotor Position	0	11.938	65534	27.80	375471
0x31	0x35	Critical LED Current / Rotor Position	0	11.908	2	32.00	358514
0x31	0x35	Critical LED Current / Rotor Position	0	11.908	65534	32.00	358513
0x31	0x35	Critical LED Current / Rotor Position	0	11.908	65534	31.40	358510
0x31	0x35	Critical LED Current / Rotor Position	0	11.898	2	30.70	358508
0x31	0x35	Critical LED Current / Rotor Position	0	11.898	2	30.70	354394
0x31	0x35	Critical LED Current / Rotor Position	0	11.908	2	28.80	350396
0x31	0x35	Critical LED Current / Rotor Position	0	11.908	2	27.80	350401
0x31	0x35	Critical LED Current / Rotor Position	0	11.711	2	20.40	205606
0x41	0x75	Resource Access Denied	0	11.889	0	31.70	161082

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- rotation speed
- supply voltage
- Technology specific (LED current / axial rotor position / distance to the magnetic tape)
- encoder temperature
- operating time

Fast Sensor Check

The "fast sensor check" is a new function, which was developed in the PGT-13-S. It brings the easy functionality for the customer, to make an easy short encoder check.

... SICK | PGT-13-S FAST SENSOR CHECK Help Fast Login

Dashboard
 MASTER Mode
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 Datasheet
 Administration
 Sensor Data
 Sensor Errors
 Error Flags
 Error Log
 Fast Sensor Check
 EEPROM
 User Data
 Resource Dictionary
 HDSL Messaging
 EMULATOR Mode
 Documents
 Settings
 Update Rate: 100 ms
 MFB Access Level: 0

i This fast sensor check can give you a rough indication about the condition of the connected device. This check can not detect all failures

▶ Start check

Results

Singleturn	OK
Multiturn	OK
Memory	OK

Current Shaft Position

138.68°

5

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Please keep in mind!!

The "fast sensor check" is not an alternative for a complete encoder investigation at SICK. At SICK, we have many more additional tools and measuring instruments to make a much deeper analysis, to find tricky errors.

If you have further questions, please let us know.

Before the sensor check:

It is necessary to turn the encoder for minimum 5 turns. To execute the test, please hit "start check", then turn the encoder.

After the sensor check:

After the 5 turns, the PGT-13-S stops automatically the test and provides the result.

During the Test, the PGT-13-S checks following things:

- basic functionality of the single turn
- basic functionality of the multiturn (for a complete multiturn check, it is necessary to turn the encoder over 4096 turns in both directions)
- memory of the encoder
- basic communication

User Data

https://video.sick.com/media/t/0_vsqkhhik

The tab "User Data" is to store user specific data on the encoder.

The screenshot shows the SICK PGT-13-S USER DATA interface. The sidebar on the left contains navigation options: Dashboard, MASTER Mode, Connection, Datasheet, Administration, Sensor Data, Sensor Errors, EEPROM, User Data, Resource Dictionary, HDL Messaging, EMULATOR Mode, Documents, Settings, and PGT13S Infopage. The main area displays 'Memory usage' with a bar chart showing 384 Byte used out of 8192 Byte. Below this is a 'Files' section with a list of files (temp10 to temp50) and a 'File' section showing the content of a selected file (temp10) in hexadecimal and ASCII. The ASCII content is 'Hello World :-)'.

1. Memory usage
Here you see, how many storage is used / how many storage is free
2. Files
Here you see an overview of the data fields, which are at the moment stored on the encoder
In the example it is one data field with the name "Data 001"
3. File
Here you can see the content of the selected data field

It is possible to do the following things with the data fields:

1. Create a data field
2. Delete data field
3. Edit a data field
4. Store a data field on the PC
5. Load a data field from the PC into the encoder
6. Save the whole data fields as one file to the PC
7. Load the whole data fields of an encoder from the PC to another encoder

SICK has nothing to do with the content of the data fields. We only provide this functionality

The files, on the PC, from the PGT-11-S are not compatible with the PGT-13-S

Create a data field

To create a new data field, please type in a new file name in the field "New File" (please keep in mind, the maximum file name length is 8 digits)

Then hit the "+" Button.

After this, click on the data field name. Then you can edit the content of the data field in the right area.

It is possible to write the content in ASCII or edit each single Byte in HEX.

In each row, you can write 16 digits. If you need more than 16 digits, please hit "Add one row".

If you are ready with the content of the data field, you must hit "Save to MFB" to write the content of the data field to the encoder.

Delete data field

If you want to delete a file, please choose the file you want to delete and click "delete from MFB".

Edit a data field

To edit a data field, please select the data field, you want to edit.

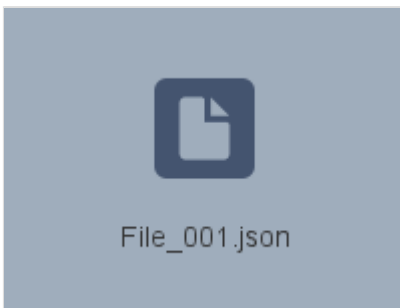
Then edit the file and confirm with "Save to MFB"

You can edit the data field in ASCII or directly the HEX letters.

Store a data field on the PC

Use the Button "Download" (on the right side) to store a single file on your PC. We suggest to use the JSON file to store the data field content.

Here an example of a stored data field:

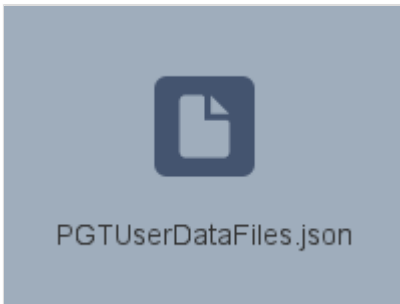


Save the whole data fields as one file to the PC

Use the Button "Download Files" (on the left side), to write the whole data fields, which are stored on an encoder, to the PC. With this functionality, you can create an image of an encoder.

The content is stored in a *.json file.

Here an example of such a data field:



Load a data field from the PC into the encoder

If you want to use a file from the PC, please choose "Upload" to load the file into the encoder.

Resource Dictionary

In the "resource directory", it is possible to get an overview of the available resources, of the connected Hiperface DSL encoder. It is also possible to get further information about the attributes of the resources.

... SICK | PGT-13-S RESOURCE DICTIONARY Help Fast Login

Dashboard

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- Sensor Errors
- _EEPROM**
- User Data
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- HDSL Messaging
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Update Values
MFB Access Level: 0

RESOURCE DICTIONARY

Read and view the direct and indirect qualifiers of all accessible resources in the connected encoder, in form of a dictionary. The qualifiers of the resources can be viewed, by selecting them.

ROOT	Resource ID	128 / 080h
IDENT	Resource Name	ENCTYPE
ENCTYPE	Resource Size	2
RESOLUTN	Read Access Level	0
RANGE	Write Access Level	15
TYPECODE	Timeout [ms]	70
SERIALNO	Data Type	4
FWREVNO	Connected to RID	1
FWDATE	Indirect values	Hex <input type="checkbox"/> <input checked="" type="checkbox"/> 00 02
EESIZE	ASCII	<input type="checkbox"/>

MONITOR
ADMIN
COUNTER
DATA
SENSHUB

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HDSL Messaging

In the tab "HDSL Messaging", there is the opportunity to write scripts to communicate via "Long Messages" and "Short Messages" directly with the encoder. In this way of communication, you see, how the raw values are respond from the encoder or how it is necessary to write values to the encoder.

... SICK | PGT-13-S UNDEFINED Help Fast Login

Dashboard

- MASTER Mode
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Update Values
MFB Access Level: 3

HDSL Messaging

Create simple scripts to call and execute Resource Access and Remote Register Access generically (aka. Long- and Short Messages)

Script Input

```

1 main()
2 {
3   lm(0x109,I,N,0,2,W,0007);
4   lm(0x109,I,N,0,2,R);
5
6
7 }
```

Compiled Script

```

//Start Main
lm(0x109,I,N,0,2,W,0007);
lm(0x109,I,N,0,2,R);
//End Main
```

Result in Hex (ASCII)

W successfully executed
00,07 (W)

Command	Description
main()	Main function. Is the start of the script. Requires {}
{}	Defines a program block. Use them in separate rows
lm() / longMessage()	Initiates a Generic Long Message Access (Generic Resource Access) <ol style="list-style-type: none"> RID (decimal / hex with '0x') Direction ('D': Direct / 'I': Indirect) Using Offset ('O': Uses Offset / 'N': No Offset) Offset (decimal) Length (decimal) Read/Write ('R': Read / 'W': Write) Data (hex) Please refer to the HTTP API Documentation for details.
sm() / shortMessage()	Initiates a Generic Short Message (Generic Remote Register Access) <ol style="list-style-type: none"> Remote Register Address (decimal / hex with '0x') Length (decimal) Read/Write ('R': Read / 'W': Write) Data (hex) Please refer to the HTTP API Documentation for details.
for(x)	For cycle. Requires {}
//	One line comment
	Function definition: name()

First view, of this tab

If you open the tab, you will see directly an example program.

- How to read a "Long Message"
- How to send a "Short Message" to read out the encoder errors
- How to write a "Long Message"
- How to clear the encoder remote registers via a "Short Message".

If you want to write your own command line, please delete the example program, to start your own programming.

In the upper command line, you have the followed functions:

- Add a short message or long message (behind this button, you find an assistant to generate short messages and long messages)
- Upload program
- Download program
- delete program
- Execute program
- download the results

How does the programming work?

Long Message:

Function	how to write	example 1	example 2	example 3
Initiate a Long Message	2 possibilities: <ul style="list-style-type: none"> • Im() • longMessage() 			
RID	Here you select the RID (resource) you want to use. You will find an overview of the RID in the HIPERFACE DSL® MASTER Safety Integration Manual at "9 Motor feedback system resources" In the user manual, you find the resource number in "hex". In the tool you have to use it in "dec". So you have to calculate it.	193	308	307
Direction	"D" = direct = you read out the attributes of the resource "I" = Indirect = you use the resource this must be used, if you want to do, what the resource is standing for	I	I	I
Using Offset	"O" = uses Offset see the description of the resource "N" = no Offset used	N	O	O
Offset	Enter the Offset as a decimal value	0	00, 01, 02, 03,	300h / 768dec
Length	Enter the resource length see the description of the resource (2, 4, 8)	2	8	8
Read/Write	Here you can decide, if you read ("R") or write ("W") to a resource	R	R	W
Data	add the data for the resource (if needed) in "hex"	--	--	446174612 0303034

Example 1: how to read a "Long Message" without Offset "0C1h" "193dec"

Send the data in one line: **Im(193,I,N,0,2,R);** and the Feedback is **01 AB h** "427 dez" "42,7°C"

Example 2: how to read a "Long Message" with Offset "134h" "308dec"

Offset:

Check the amount of data fields: **Im(308,I,O,0,8,R);** and the Feedback is: **03h**=(3 data fields) **00**=(reserved) **1E40h**=(number of empty bytes) **01C0h**==(number of used bytes) **00h**=(reserved)

Filename of data field 1: **Im(308,I,O,1,8,R);** and the Feedback is: name of the data field 1

Filename of data field 2: **Im(308,I,O,2,8,R);** and the Feedback is: name of the data field 2

Filename of data field 3: **Im(308,I,O,3,8,R);** and the Feedback is: name of the data field 3

Example 3: how to write a "Long Message" "133h" "307dec"

Create the data field "Data 004": **Im(307,I,O,768,8,W,4461746120303034);**

Short Message:

Function	how to write	example read	example write
Initiate a Short Message	2 possibilities: <ul style="list-style-type: none"> • sm() • shortMessage() 		
Error Byte Address	here you decide, with which error byte you want to start. It is important to type in the encoder remote register in decimal. 40h ... 47h 64dec ... 71dec	64	64
How many bytes	how many remote register you want to read out (maximum 8)	8	8
Read/Write	here you can decide, if you read the errors or clear the errors.	R	W
Data	0 for clear all errors	--	0000000000000000 00

How to send a "Short Message" to **read** out the encoder errors

Read all encoder remote registers with: "**sm(64,8,R);**"

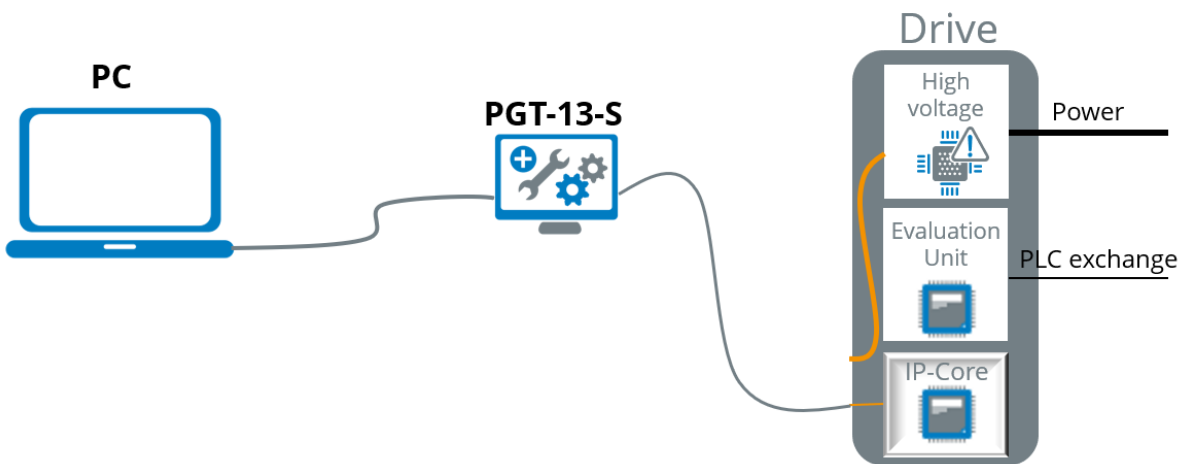
How to **clear** the encoder remote registers via a "Short Message".

Clear all remote registers with: "**sm(64,8,W,0000000000000000);**"

Emulator Mode

The Emulator Mode is to emulate an Hiperface DSL encoder. This part of the tool helps the drive manufacturer to develop test and verify drive functions of the drive firmware.

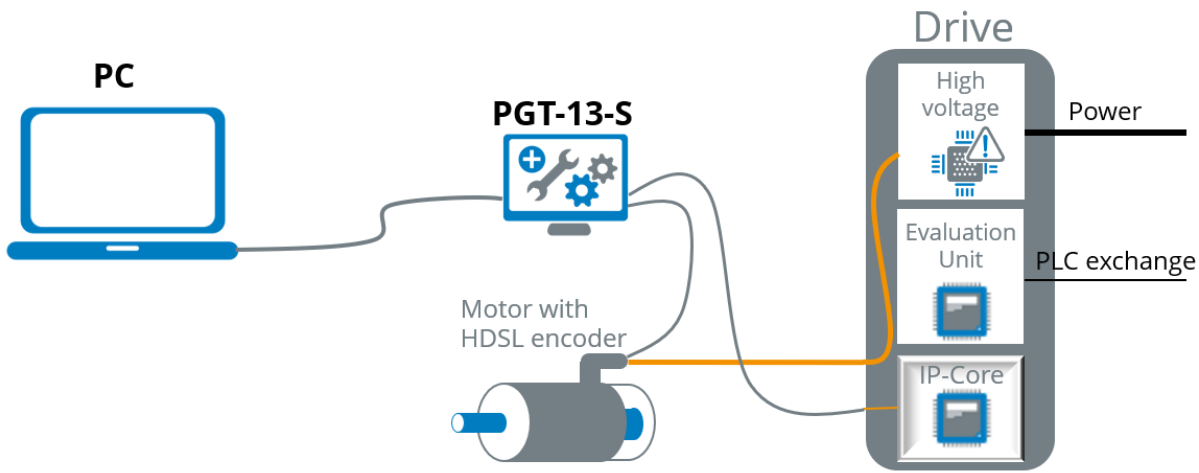
It can also be used to test the safety functions of a drive.



[see the page: PGT-13-S Emulator Mode](#)

Explorer Mode

The Explorer Mode is to analyze a Hiperface DSL System. The PGT-13-S must put in between the Hiperface DSL Slave (encoder) and Hiperface DSL Master (drive). Than it is able to analyze the quality of the signal and listen to the communication.



This part of the PGT-13-S is still under construction.

Documents

In the tab "Documents", you can open/download 2 Hiperface DSL specific files.

The screenshot shows the SICK PGT-13-S web interface. The left sidebar contains navigation options: Dashboard, MASTER Mode, EMULATOR Mode, Documents (selected), Settings, and PGT13S Infopage. The main content area is titled 'ADDITIONAL DOCUMENTS' and features a 'Help' button in the top right corner. Two document cards are displayed:

- HDSL PGT-13-S HTTP API DOCUMENTATION**: The PGT-13-S implements a HTTP REST API, accessible on port 2112. Click here to view the list of available endpoints and a detailed documentation of how to access the interface.
- HDSL MASTER SAFETY INTEGRATION MANUAL**: Version: 8017596 / 1B3Z / 2021-03-08. The HDSL® Master Safety Integration Manual describes the use and implementation of the HIPERFACE DSL® data protocol installed in a HDSL® Motor Feedback System. The document can be found offline under the button above or online under sick.com.

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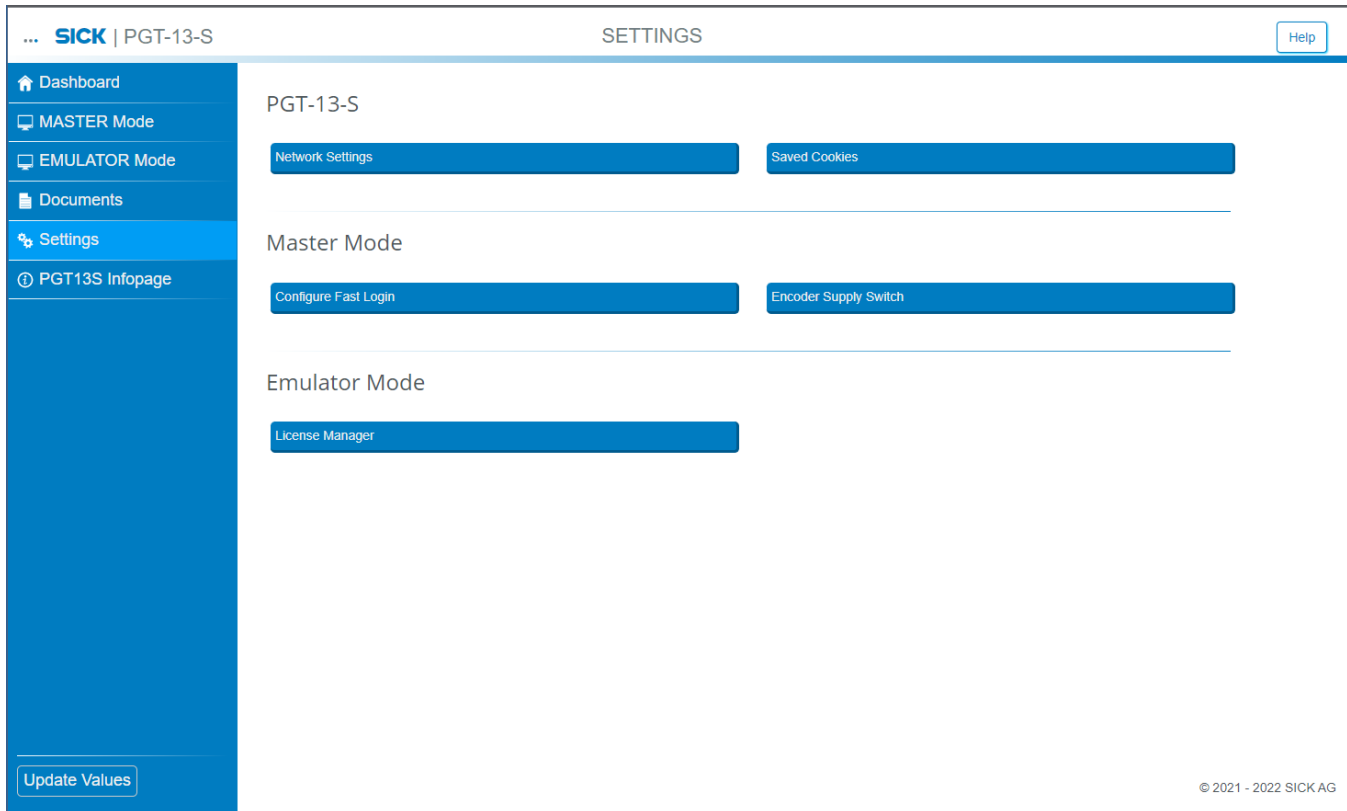
1. HDSL PGT-13-S HTTP API Documentation
This documentation describes, how to communicate with the PGT-13, without the SICK web surface.
2. HDSL Master Safety Integration Manual
This document describes, how to implement a Hiperface DSL Master IP-core into a drive system

Both documents are as up to date, as up to date the PGT-13-S firmware is.

It is also possible to find the documents on sick.com.

Settings

In the "Settings" of the PGT-13-S, you can do some basic adjustments.



- Configure Fast Login
- Saved Cookies
- Network Settings
- MFB Supply Switch

Configure Fast Login

In the "Configure Fast Login", you can define a Encoder log in level. The encoder will not go directly into this access level. You have to "enable" this after the power on.

Access level are needed for the execution of several commands e.g. SET POSITION.

Here the most important access codes.

Access level	Access Code
1	1111
2	2222
3	3333
4	4444

To enable the access level, please press "Fast Login"

To verify, the access level, you can check on the bottom left side

Saved Cookies

In the Setting "Cookies", you can check, which cookies are at the moment activated.

Cookies are important, that the PGT-13-S remembers the user specific settings. The settings are **not** stored on the PGT itself.

Network Settings

Here you can adjust the Network settings of the PGT-13.

The default settings "DHCP" which switches into "Auto IP" if no IP-address is received.

MFB Supply Switch

With this functionality you have the possibility to switch "OFF" and switch "ON" the power supply of the encoder.

This means, to do a power cycle at the encoder, it is not necessary to disconnect it.

PGT13S Infopage

Here you get some information about the used PGT-13-S.

- The unique name and serial number
- The MAC address
- The firmware version and the GUI version
- The used Hiperface DSL IP-cores

Information		FPGA	
Firmware	2.0.4.0R	Overall	2.0, 23.11.22
Serial Number	22110001	HDSL Master IP-Core	1.07
Location Name	PGT13S22110001	HDSL Slave IP-Core	1.0
MAC-Address	00:06:77:3e:a2:0d	HDSL Analyser IP-Core	0.0
Web-GUI	2.0.0.1R Intern 99.2.0.0		
Licenses	link		

The direct communication

 see the page: [5. HTTP REST API Integration](#) in the Workspace: [Workspace PGT-13-S](#)

The direct communication with the PGT-13 via the "HTTP REST API" is very easy. It is described in a separate document, which you can find in the download section.

To test some single commands, you can use the browser.
the functionality is like this:

```
http://"ip-address":2112/api/"command"
```

Example: http://192.168.178.60:2112/api/m_datasheet

with this functionality, it is only possible to read out data

For a better communication, you can write a Python script.

Data Science in Python and Jupyter with Anaconda

For this, you need the following things:

1. Interpreter <https://www.python.org/downloads/>
2. Programm to write the script <https://code.visualstudio.com/>
3. Python extension for the visual studio <https://marketplace.visualstudio.com/items?itemName=ms-python.python>


<https://www.pythonlernen.com/tutorial>

bei der Einrichtung im VS Code, musst du:

- die Python Erweiterung installieren
- Interpreter einstellen (= zum Interpreter, den du heruntergeladen und installiert hast)
- anfangen mit einem einfachen .py file

Programming examples:

Firmware Update

 see the page: [PGT-13-S Firmware Update Files](#)

FAQ

PGT-13-S and SOPAS (SDD)

When do we need SOPAS at the PGT-13-S?

Basically, to operate the PGT-13-S, SOPAS is not needed. The PGT-13-S works with a Web Server or with a direct API, which is also explained in the Web Server.

But when is SOPAS needed?

- To find out the IP-address, if the PGT-13-S is not in a Network with DHCP-Server and DNS-Server **this works at SOPAS without SDD-file.**
- To change the password of the device. The password for "Authorized Client" is only required for a software update.
- To do a software update

Here are the latest SDD Versions:

Date	07.02.2020	27.08.2021	27.08.2021	04.10.2
Version	0.1.0	V1.0.0.0R	V1.1.2.2S	V2.0.0.
File	 pgt_13_s_hdsl_sopas.sdd	 PGT_13_S_HD..._V1000R.sdd	 PGT_13_S_HD..._V1122S.sdd	 PGT...

(Stefan Gail, 30.10.2020)

My Emulator Mode is missing!!!

My Emulator Mode is missing!!

Sometimes, it happens, that the Emulator Mode disappears. Here is a solution, to make it visible again:

https://video.sick.com/media/t/0_76k7e4n7

(Stefan Gail, 04.04.2023)

(FAQ)

(FAQ)

Jira Link (internal)

<https://deagxjira.sickcn.net/jira/projects/HDSLPGT13S/summary>

Ask your Question!



Please use this Question-Blog only for questions about:

- Proposals for FAQ's
- Network / Exchange
- ...

Otherwise, please contact us with the ticket system. For example:

- Replacement for...
- Technical request CRM
- Price request
- ...

