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FAQs for Commissioning uaGate 840D and dataFEED edgeConnector 840D

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uaGate 840D and *dataFEED edgeConnector 840D*

1. Which Controller Types are Supported?

The contoller types ***SINUMERIK 840D sl (Solution Line)*** and ***SINUMERIK 840D pl (Power Line)*** are supported.
Controllers of older types like ***SINUMERIK 840*** and ***SINUMERIK 840C*** are not compatible.

2. Which Software Versions are Supported?

SINUMERIK 840D sl must have software version V2.7 or higher,
SINUMERIK 840D pl must have software version V5.3 or higher.
Information regarding the support of other controller types and software versions can be provided upon request.

3. How to Connect a *SINUMERIK 840D sl*?

SINUMERIK 840D sl provides Ethernet interfaces, which can be used for connectivity purposes.

It must be ensured that the ***SINUMERIK 840D sl*** has been switched on and its communication settings are correct.

The ***SINUMERIK 840D sl*** provides various Ethernet interfaces (see Figure 1):

- The Ethernet interface *X120* is used for connecting the automation network (operator panel interface).
  The interface *X120* is not isolated by a firewall. Thus, ideally, ***uaGate 840D*** respectively ***dataFEED edgeConnector 840D*** is operated using this interface.
  The interface *X120* in ***SINUMERIK 840D sl*** uses the fixed IP address *192.168.214.1*. For connecting to the *MACHINE* network of the gateway respectively to the connector software network ***uaGate 840D*** respectively ***dataFEED edgeConnector 840D*** then should be configured using a fixed IP address as well (e.g. an IP address higher than *192.168.214.250*).
- The Ethernet interface *X127* serves exclusively as a service socket (service interface).
  The interface *X127* cannot be used for connection purposes.
- The Ethernet interface *X130* connects the controller to the factory network (company Ethernet).
  The interface *X130* can be used as an alternative interface for connecting ***uaGate 840D*** respectively ***dataFEED edgeConnector 840D***. Here, however, the NCU firewall (port TCP/102) has to be enabled in *SINUMERIK Operate* to allow ***SIMATIC S7*** communication.

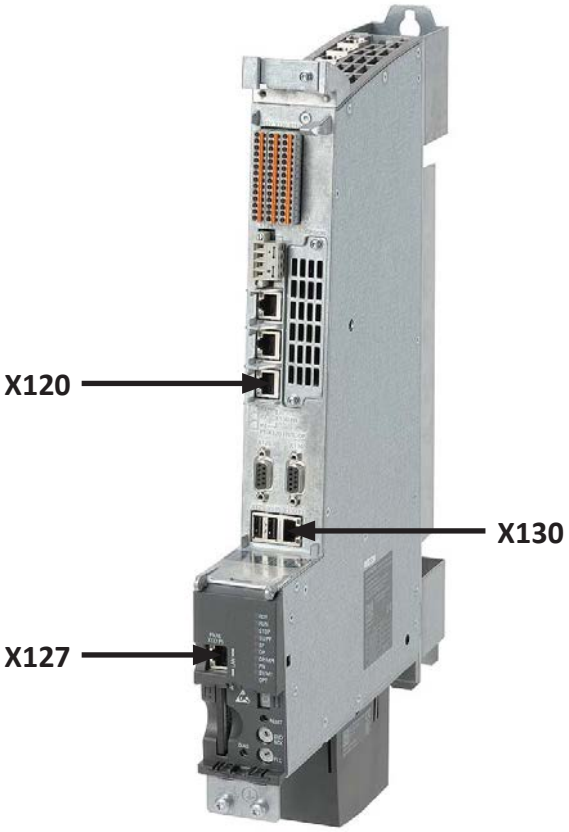

Figure 1: ***SINUMERIK 840D sl*** CNC Controller (without cover)
(Source: Siemens)

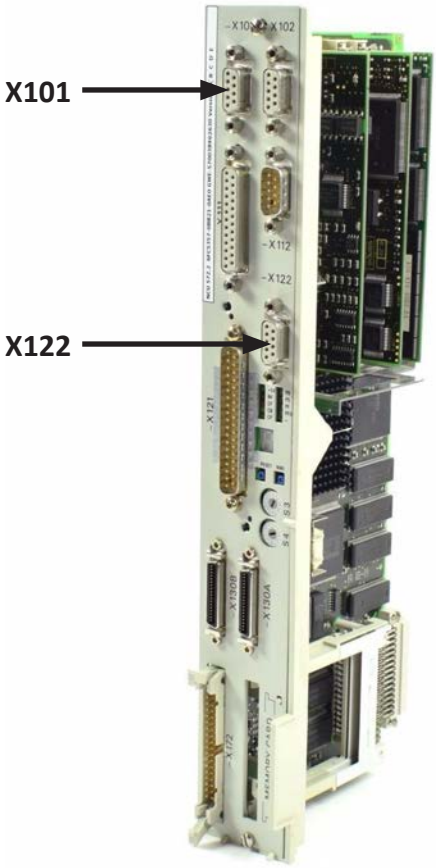

Figure 2: ***SINUMERIK 840D pl*** Plug-in Card (Source: Päbra)

4. How to Connect a *SINUMERIK 840D pl?*

SINUMERIK 840D pl does not provide an Ethernet interface. Thus, a D-Sub 9 connector plus an appropriate converter for transforming the SINUMERIK 840D-specific communication to Ethernet communication has to be used for connectivity purposes.
The Softing ***echolink S7-compact*** product supports the PG/MPI to Ethernet conversion and thus is a suitable converter product.

It must be ensured that the ***SINUMERIK 840D pl*** has been switched on and its communication settings are correct. Special attention has to be paid to a valid MPI address assignment, preventing double assignment of MPI addresses in the configuration at all costs. The individual configured addresses can be determined by checking the hardware configuration of the ***SIMATIC STEP 7*** project. Usually, the MPI address *30* is not used and thus can be assigned to ***echolink S7-compac***t.

The ***SINUMERIK 840D pl*** provides several D-Sub 9 connectors (see Figure 2):

- The D-Sub 9 connector *X122* is used for connecting the programming or a remote maintenance device (PG interface).
  The interface *X122* is recommended for connecting ***echolink S7-compact***. ***echolink S7-compact*** requires its own 24 V power supply, since the connector *X122* does not provide any voltage.
  If a connector is already connected here, ***echolink S7-compact*** can be plugged on top or in between.
- The D-Sub 9 connector *X101* is used for connecting the control panel/operating panel (control panel interface) and is **not** recommended for the communication via ***echolink S7-compact***.

5. How to Configure *echolink S7-compact* When Connecting to *SINUMERIK 840D pl*?

The ***echolink S7-compact*** configuration is performed in the appropriate configuration page (see Figure 3)

The important ***echolink S7-compact*** settings include:

- *IP Address*
  Address for reaching ***echolink S7-compact***
  The IP address is freely selectable (e.g. *192.168.214.XXX*), but has to be located in the *MACHINE* network of ***uaGate 840D*** respectively the ***dataFEED edgeConnector 840D*** network.
- *Baudrate*
  The transmission speed has to be set to *187.5 kBit/s*.
- *Own Station Address*
  MPI address of ***echolink S7-compact***
  Important:
  This address must not be used by another station.
- *Set Default Bus Parameters*
  Click on *MPI* button and use the default parameters.

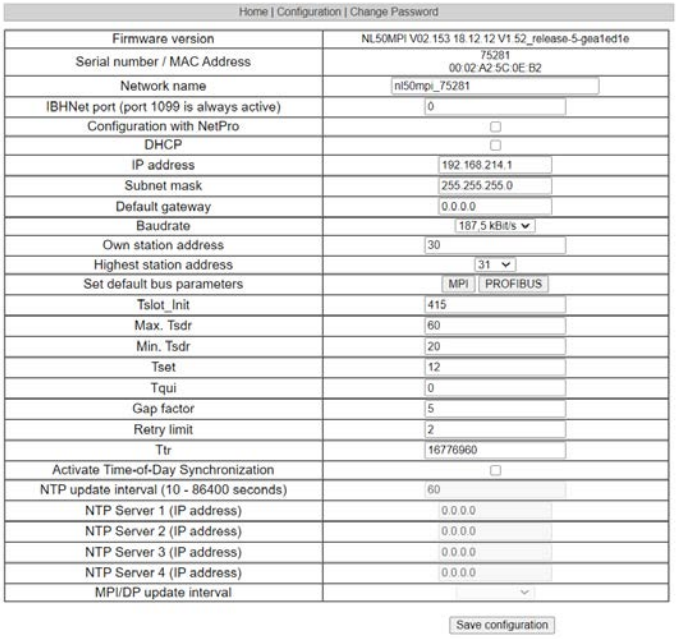

Figure 3: ***echolink S7-compact*** Configuration Screen
(Source: Softing Industrial)

6. How to Configure *uaGate 840D* for Using *SINUMERIK 840D pl*?

For connecting ***uaGate 840D*** to a ***SINUMERIK 840D pl*** controller type (in comparison to a ***SINUMERIK 840D sl*** controller type) the main configuration differences are the *Transport Services Access Point* (TSAP) settings.

The ***SINUMERIK 840D pl***-specific settings include (see Figure 4):

- *IPv4 Address*
  The IPv4 address must correspond to the IP address of ***echolink S7-compact*** (here: *192.168.1.15*).
- *NCK TSAP Selection*
  SINUMERIK 840D PL NCK has to be selected in the dropdown menu.
- *PLC TSAP Selection*
  SINUMERIK 840D PL PLC has to be selected in the dropdown menu.

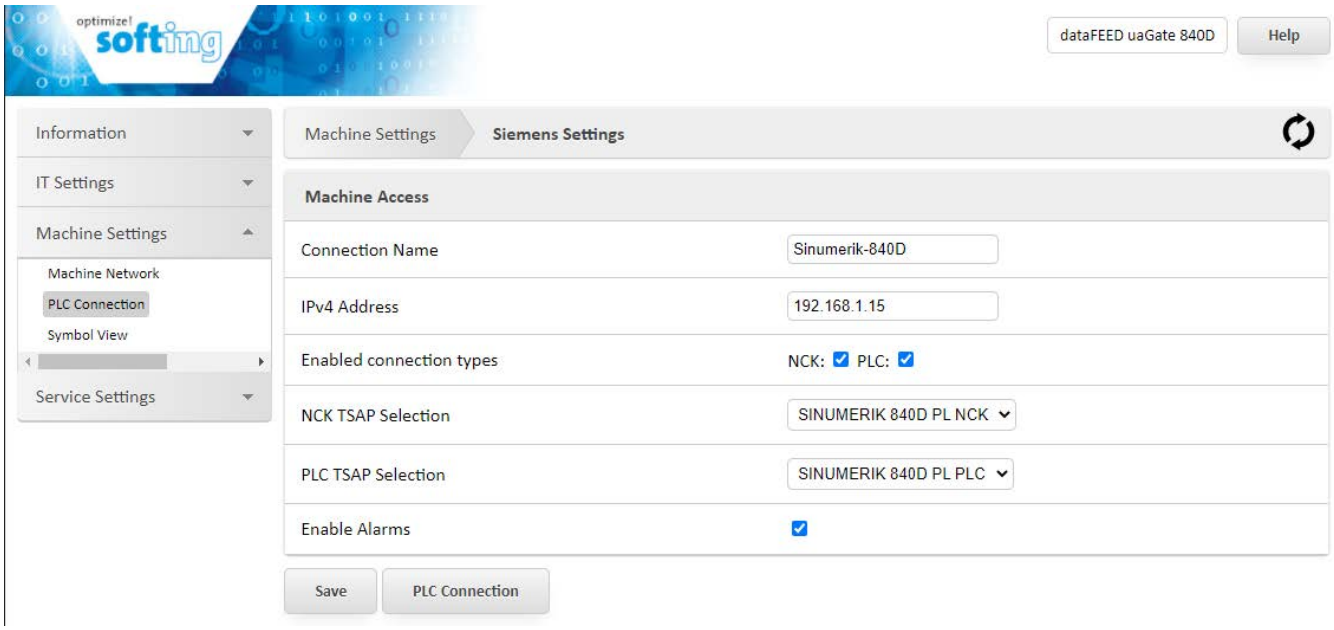

Figure 4: ***uaGate 840D*** *Machine Settings/PLC Connection* Configuration Screen
(Source: Softing Industrial)

7. How to Configure *dataFEED edgeConnector 840D* for Using *SINUMERIK 840D pl*?

For connecting ***dataFEED edgeConnector 840D*** to a ***SINUMERIK 840D pl*** controller type (in comparison to a ***SINUMERIK 840D sl*** controller type***)*** the main configuration differences are the *Transport Services Access Point* (TSAP) settings.

The ***SINUMERIK 840D pl***-specific settings include (see Figures 5 and 6):

- *PLC Address*
  The PLC address must correspond to the IP address of ***echolink S7-compact*** (here: *192.168.1.15*).
- *NCK TSAP Selection*
  SINUMERIK 840D PL NCK has to be selected in the dropdown menu.
- *PLC TSAP Selection*
  SINUMERIK 840D PL PLC has to be selected in the dropdown menu.

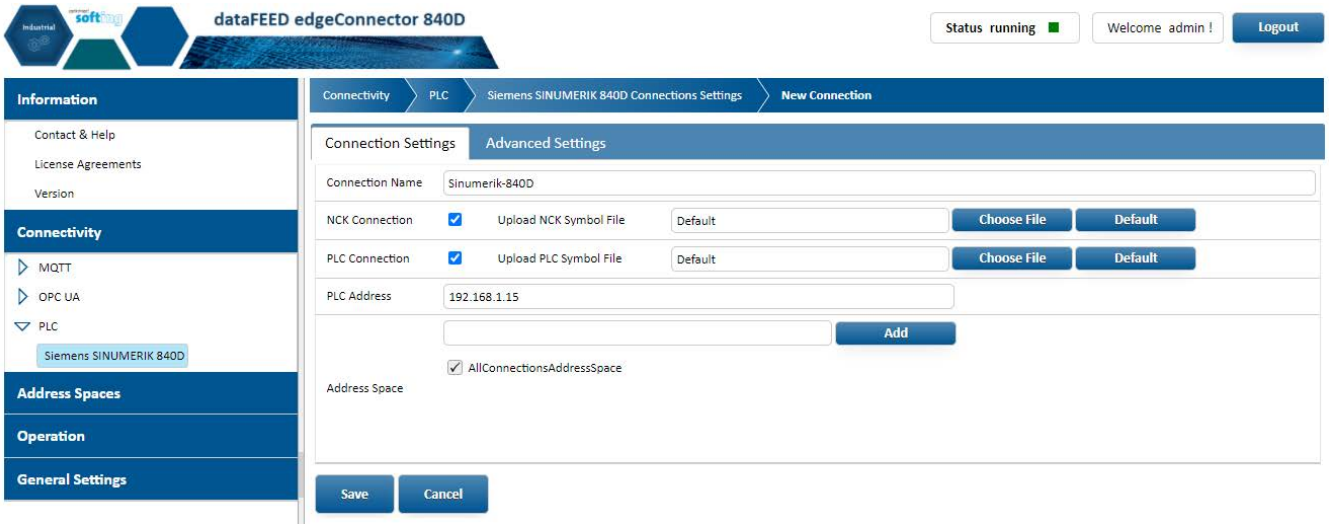

Figure 5: ***dataFEED edgeConnector 840D*** *Connectivity/PLC/Siemens SINUMERIK 840D* Configuration Screen, Tab *Connection Settings*
(Source: Softing Industrial)

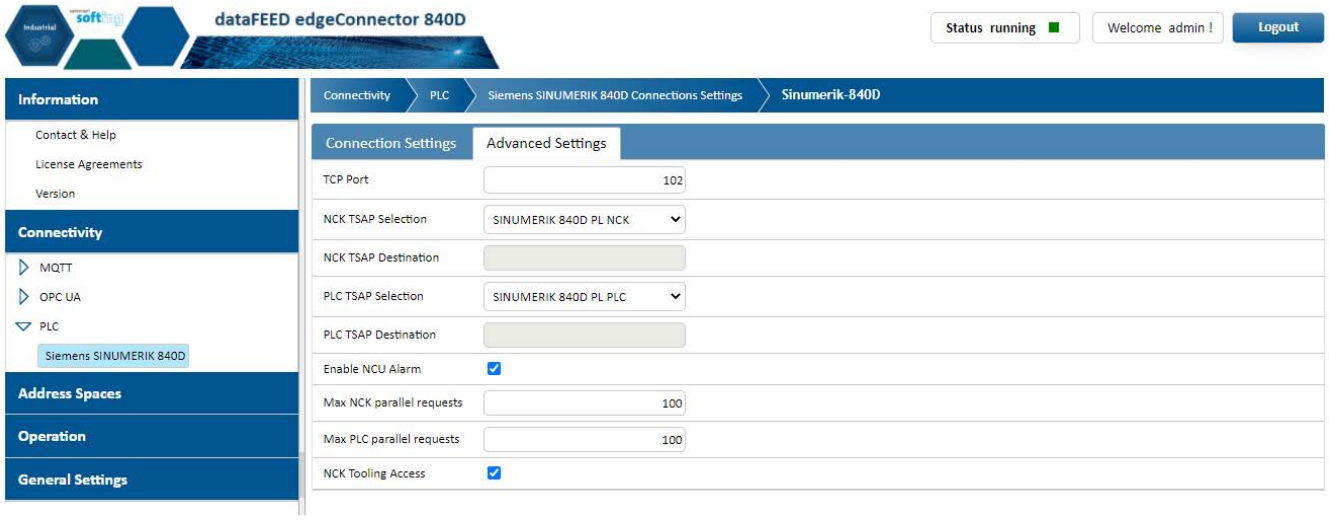

Figure 6: ***dataFEED edgeConnector 840D*** *Connectivity/PLC/Siemens SINUMERIK 840D* Configuration Screen, Tab *Advanced Settings*
(Source: Softing Industrial)

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