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Getting started with COM35 in powerconfig Quick start guide

Introduction

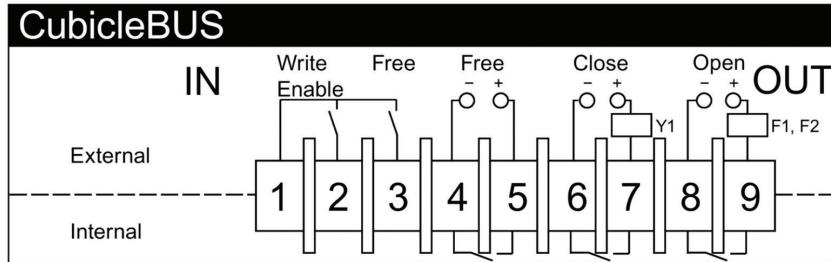
The COM35 PROFINET IO / Modbus TCP module adds a new level of high speed, secure communications to the WL Breaker product family. The functionality and data structure of the COM35 is based on the COM15/COM16 module and is compatible with all 3WL with CubicleBUS support. The COM35 is therefore suitable for the modernization and expansions of plants as well.

By utilizing Siemens powerconfig software, the COM35 can be quickly configured for use. Once configured, the COM35 is the gateway to the breaker itself and can be used locally or remotely to configure trip unit parameters, downloading metering data, event logs, and waveforms using the powerconfig software. The latest version of powerconfig software is always available here: <https://support.industry.siemens.com/cs/ww/de/view/63452759> Please note that you will need to register to download.

Powerconfig can be used without the need for a network hub or switch to configure the parameters for one breaker on a 1:1 basis. It can also be used across a network to check breaker status or change breaker parameters. Powerconfig is not a replacement for a SCADA or energy monitoring system such as WinPM.net but rather a compliment to it. Powerconfig can be used to check breaker data while the other systems go about their business over the network. It can be used on a network with Modbus TCP and PROFINET IO traffic simultaneously.

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First: Make sure the "Write Enable" jumper is in place (between terminals 1 and 2) so that parameters can be written.

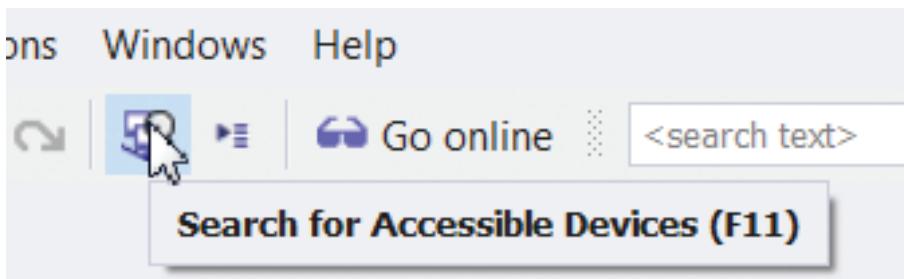


To configure your COM35, you can either connect to it directly to your computer or connect it to a network to which your computer is connected.

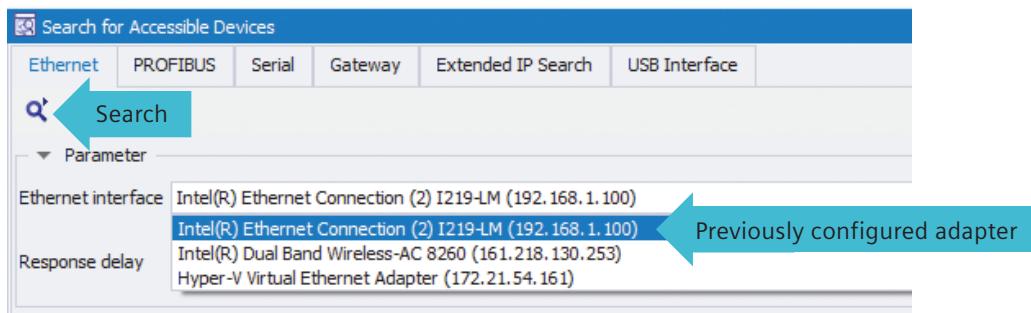
If you connect directly, you will need to make sure Windows Defender Firewall allows UDP Port 17008. The process for doing this is in an appendix at the end of this guide.

To set the IP address of the COM35, connect your COM35 to your network or to the Ethernet port on your computer. Open powerconfig with a new project.

Search for accessible devices:

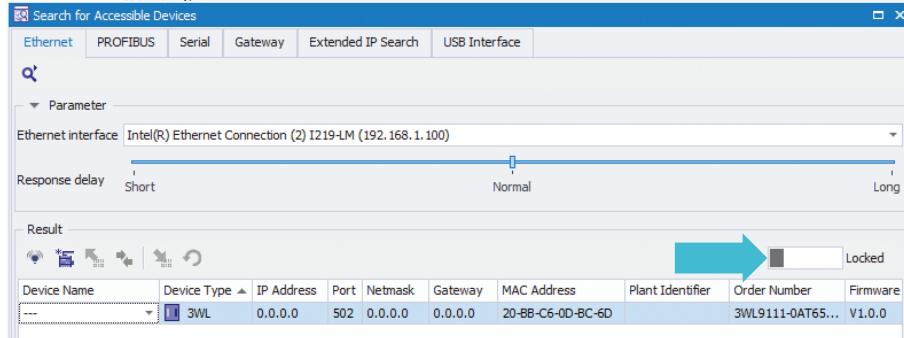


Select the network adapter connected to the network to which your COM35 is connected then click search:

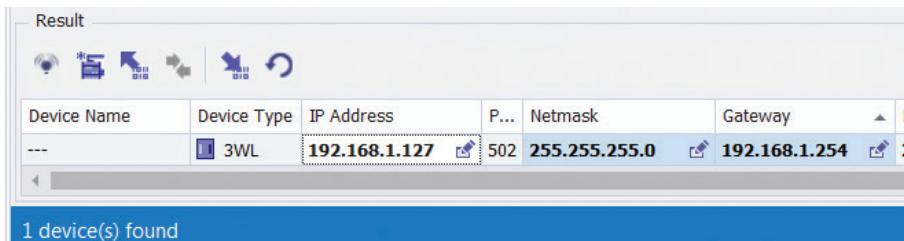


After the device is found, click on the locked slider to unlock the device so that the parameters can be changed.

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Enter the desired IP address, netmask and gateway required for your network. When entering IP addresses, do not type the ".", it will be added automatically after typing 3 digits. If only one digit is required, use the right arrow key to move to the next octet.



Click the Load to device button:



The IP addresses will be written to the COM35.

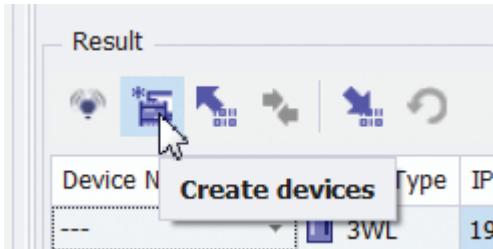
To verify that the device is now accessible on the network, open a command window and use the ping command:

```
C:\Users\labpc1>ping 192.168.1.127
Pinging 192.168.1.127 with 32 bytes of data:
Reply from 192.168.1.127: bytes=32 time=422ms TTL=30
Reply from 192.168.1.127: bytes=32 time<1ms TTL=30
Reply from 192.168.1.127: bytes=32 time<1ms TTL=30
Reply from 192.168.1.127: bytes=32 time<1ms TTL=30

Ping statistics for 192.168.1.127:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 422ms, Average = 105ms
```

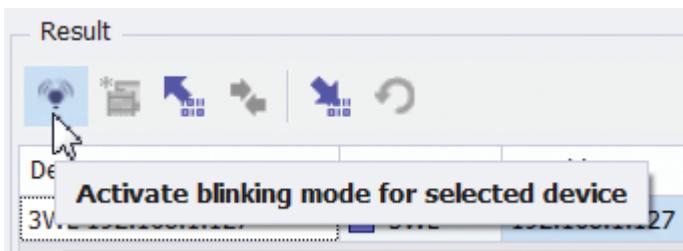
Click on the Create devices button and the newly configured COM35 will be added to the powerconfig project:

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The device name in this case would be 3WL 192.168.1.127.

If there are multiple devices on the network and you need help identifying the one to which you are connected, click the blink button:

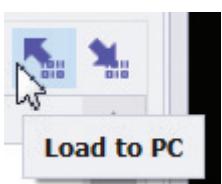


After the Blinking dialog opens, click the Start Blinking button.

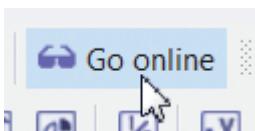


The PN and TCP LEDs on the device will alternate flashing on and off. When finished, click on Stop Blinking (which will also be blinking). Close the Search for Accessible Devices dialog.

If the COM35 is connected to a WL breaker and trip unit, parameters will be loaded into powerconfig.



Click the Go Online button to access live data from the breaker.

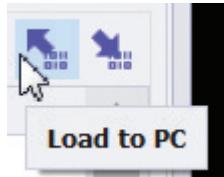


How to configure a new COM35 with powerconfig

Appendix 1: Configuring the COM35 for a Dynamic Arc Flash Mitigation application

Prerequisite: The COM35 module is connected to a network, has an IP address and can be communicated with.

Once a COM35 has been given an IP address and can be communicated with, the first step is to load the COM35 parameters to the PC. Click on the Load to PC button and the breaker and communication parameters will be loaded into powerconfig.



The screen will have the connected breaker information on it:

General	
Name	3WL 192.168.1.127
Device type	3WL
Description	

Configuration	
Communication module	COM35 module (Modbus TCP)
Breaker frame	Size 3
ETU	ETU776
Rating plug (A)	4000
Breaking capacity	Extremely high breaking capacity C/IntClassC
Poles	3-pole
Rated operational voltage U_e (V)	690
Rated short-time withstand current I_{cw} (kA)	100
Ground fault module	Available
Metering function PLUS	Available
BSS	Available
BDA	---
External CubicleBUS modules	
Write protection	Write protection inactive

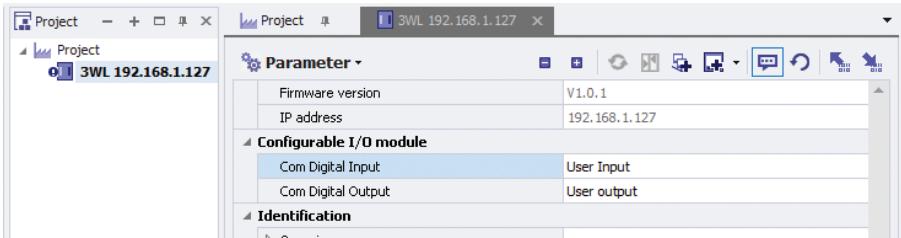
Communication module	
Cyclic data	

Ethernet interface	
TCP port	502

Scroll down until Configurable I/O module is visible. The currently configured state of the Com digital input and Com digital output will be shown.

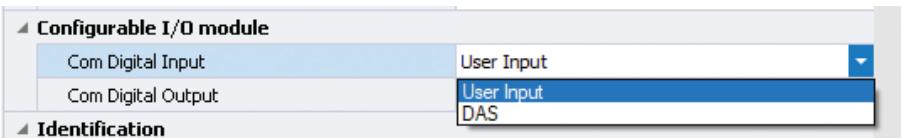
How to configure a new COM35 with powerconfig

Appendix 1: Configuring the COM35 for a Dynamic Arc Flash Mitigation application



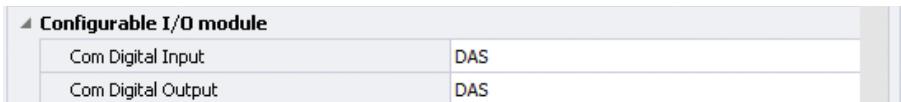
In this configuration, the status of the "Free" or user-configurable input (terminals 1 and 3) can be queried via communication but controls nothing.

To configure the input to change the active parameter set, select DAS from the drop down (there are only two choices).



In the default configuration, the "Free" or user-configurable output can be opened and closed via communication. It can also be configured to act as an additional Bell Alarm (closed when the trip unit has tripped the breaker and staying closed until the tripped state is reset via the CLEAR button on the trip unit or via communications). For DAS applications, it can be configured to close to indicate that the trip unit is using Parameter Set B as its active parameter set (B is normally configured as the DAS or Maintenance parameter set).

When set to be the DAS activation input and indication output, the parameters should be set as shown:



Once set, the parameters must be loaded back to the COM35 to take effect.



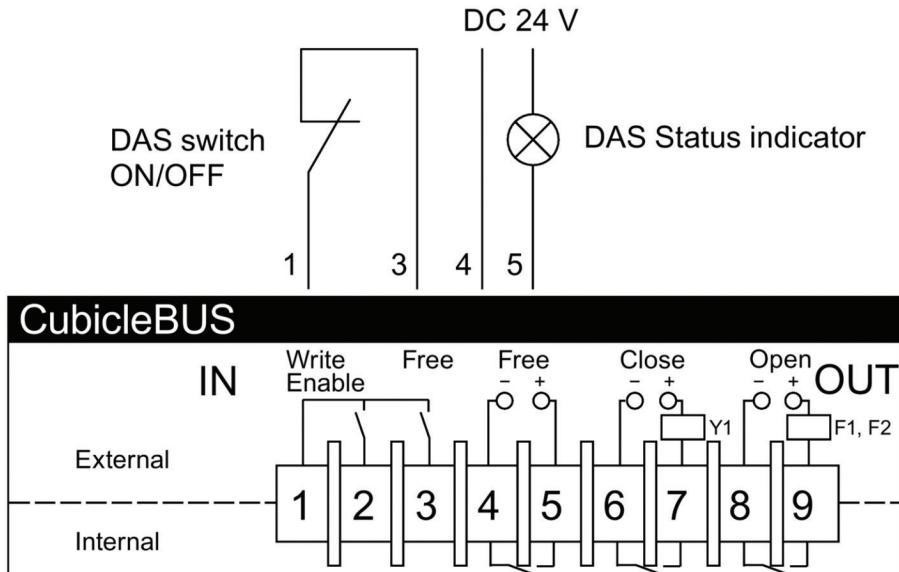
When utilizing the COM35 as the DAS activation input and status indication output by performing this configuration, it is important to understand two important points:

- 1) Parameter Set B (DAS or Maintenance Mode parameters) are selected when the DAS ON/OFF contact is OPEN and Parameter Set A is selected when the contact is CLOSED.

Switch contact shown in normal operating (Parameter Set A) mode.

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Appendix 1: Configuring the COM35 for a Dynamic Arc Flash Mitigation application



- Once configured to switch parameter sets in DAS mode, the COM35 has sole control over the active parameter set. Manual attempts to change from A to B (when in A) or B to A (when in B) will be reversed by the COM35 within 2 seconds. This includes attempts made from the front panel of the trip unit or remote selection via communications.

The input and output can be configured separately. If DAS ON/OFF changes will only be mode remotely via communications, the Com Digital Input can be left in the User Input state, allowing local indication but remote mode switching.

The setting of the input and output can be changed via a Modbus TCP command over the network when the Write Enable jumper is in place (terminals 1 and 2). These packets are in Data Set 161 and are documented in the COM35 Communications Manual.

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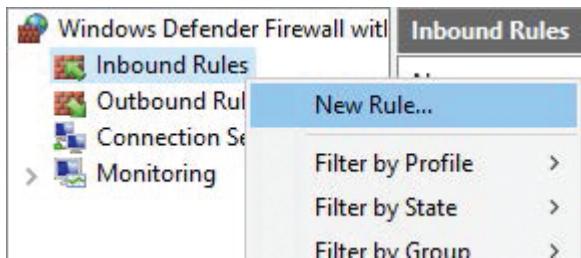
Appendix 2: Configuring Windows 10 Defender Firewall to allow COM35 discovery

Different networks/companies have different rules regarding opening ports, but the process of enabling this port is as follows:

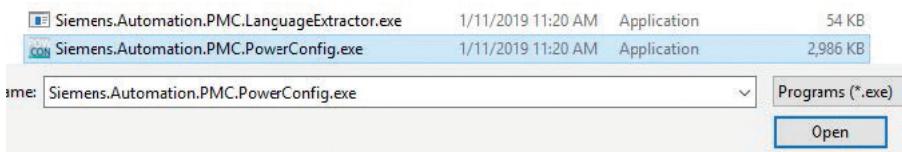
1. From the Start menu, open Settings.
2. Using the search box, find Firewall, then open Windows Defender Firewall.
3. Click on Advanced Settings, click on Inbound rules.
4. If powerconfig installed correctly, there should be an entry like this:



5. Right click on Inbound Rules and click on New Rule:



6. Select Program and Browse to the location of powerconfig and select this file:

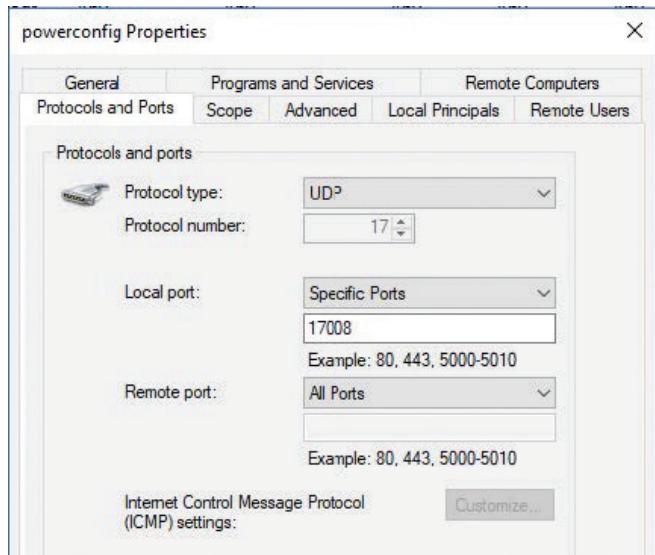


Click Open and Next. Choose Allow the connection and click Next.

7. Make sure the Domain, Private and Public boxes are checked and click Next. Name the rule powerconfig. In the description, type "Allow UDP port 17008 for COM35 discovery" and click Finish.
8. Double click on the rule and a box of settings will open up, click on the Protocols and Ports tab. Select UDP under Protocol type and Specific Ports. Enter 17008 under that pull-down:

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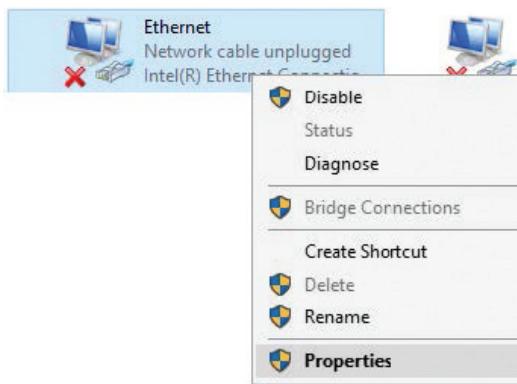
Appendix 2: Configuring Windows 10 Defender Firewall to allow COM35 discovery



Click OK and close all the dialogs.

To configure the COM35 connected directly to your computer, you will need to configure an Ethernet port with a static IP address for the duration of the process. Most computers get their IP addresses from a central router via DHCP (Dynamic Host Configuration Protocol).

- 1) Open Settings, Network and Internet then Change Adapter Settings
- 2) Select your Ethernet adapter, right click and select Properties:



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Appendix 2: Configuring Windows 10 Defender Firewall to allow COM35 discovery

- 3) Confirm any "Are you sure?" dialogs, find and select Internet Protocol Version 4 ITCP/IP v4, click Properties:

Obtain an IP address automatically
 Use the following IP address:

IP address:	192 . 168 . 1 . 100
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	.

Obtain DNS server address automatically
 Use the following DNS server addresses:

Preferred DNS server:	.
Alternate DNS server:	.

- 4) Enter an IP address in the same range as will be used, along with the appropriate Subnet mask. The other fields can be left blank. Click OK to close all dialogs.

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