



DigiLine 400 Series Protection Relays Quick Start Guide

Versions

Rev. No	Comp. Relay SW Version	Cause of Revision	Committer	Date
V1.0	1.1.9.2 and later	First Publication	Cihangir ODABAŞ	03.04.2019



Powered by



1 Contents

2	Power Up the Relay.....	4
3	Start Communicating with the Relay	5
4	Configure the Relay with DigiConnect 400	7
5	Configure the Relay with WebServer	10

2 Power Up the Relay

DigiLine 400 Series have one of the easy to use power up sequence. The relay has wide range of input voltage over same input pins. Voltage specifications are listed below;

Auxiliary Power Supply Specifications

Description	Value
Nominal auxiliary voltage	(48-240) Vac, (24-240) Vdc
Operating range of auxiliary voltage	(36-264) Vac, (22-264) Vdc
Nominal frequency for AC voltage	50 / 60 Hz

To power up the relay, proper voltage needs to be supplied to the rear connectors. To identify which ports should be used, please follow connector plan on the side of the relay (Figure 1).

Power pins are on the **X03** Connector with numbers **50-51**.

52 is used for chassis, but not absolute must.

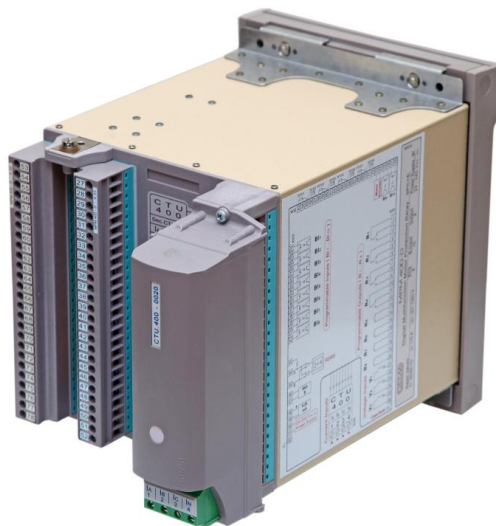


Figure 1: Relay Rear Side

3 Start Communicating with the Relay

DigiLine 400 Series offers easy access to user with different interfaces. Interfaces let user use either related Communication Protocols, DigiConnect 400 PC Config Tool or Webserver. Available ethernet interfaces are listed below;

Ethernet Interfaces

Interface	Type	Data rate	IP Address
Front	Standard Ethernet (CAT 5 with RJ-45)	100 Mbits/s	Fixed - 192.168.2.215
Rear	2 ports Copper (Standard Ethernet CAT 5 with RJ-45) 2 port Fiber Optics	100 Mbits/s	IP is configurable. 4 port shares same IP. Ports are bridged.

Front port Ethernet has fixed IP (**192.168.2.215**) to supply easy and fast communication through all DigiLine 400 series.

To change Rear Port IP address, please follow the instructions below;

Enter the menu of ethernet settings on the device GUI. Follow the menus accordingly (**Menu > Configuration > Eth Interface Settings**). Enter "Setting" button the open Rear Port Settings (Figure 2). IP, Netmask and Gateway could be selected via corresponding buttons. Link status could be observed status bar.

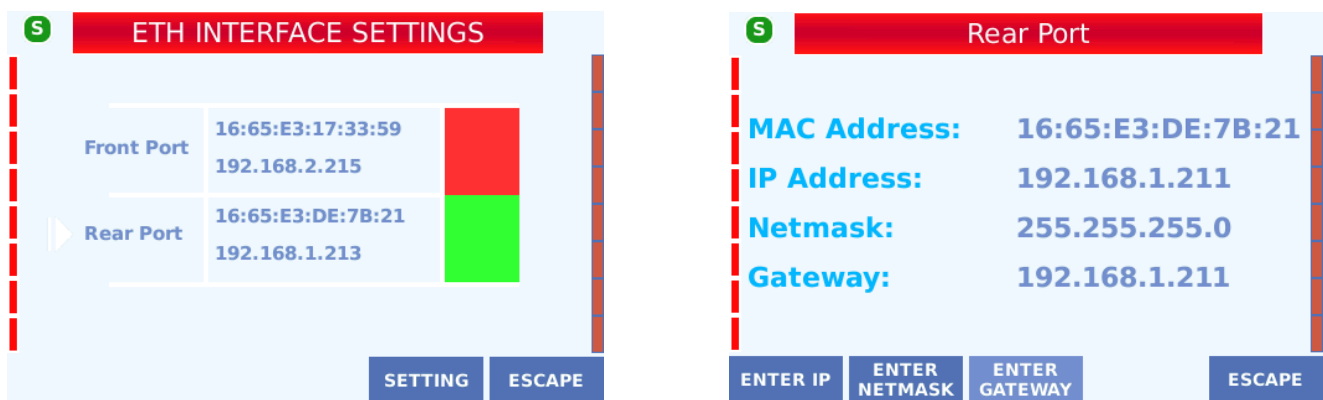


Figure 2: Ethernet Settings Menu and Rear Port Settings

After choosing which port is used, connect it with your PC. After connection is established, network settings on computer should be adjusted. Computer should be on the same network with the relay. Please follow the instructions below;

Enter computers **'Control Panel > Network and Internet > Network Connections'** or **'Change adapter options'** of ethernet ports (Figure 3). Right click **Ethernet** and select **'Properties'** (Figure 4). Open **'Internet Protocol Version 4 (TCP/IPv4)'** properties. Give an IP address to your PC with careful of below warnings.

Warning 1: Do not give the same IP to your PC with relays.

Warning 2: PC's IP should be on same subnet with relays.

Same subnet means first three region of IP addresses should be matched. For example, if front port (192.168.2.215) of the Relay is connected to PC, PC's IP should be 192.168.2.XXX. On Figure 4, it is given as an example with 192.168.2.100.

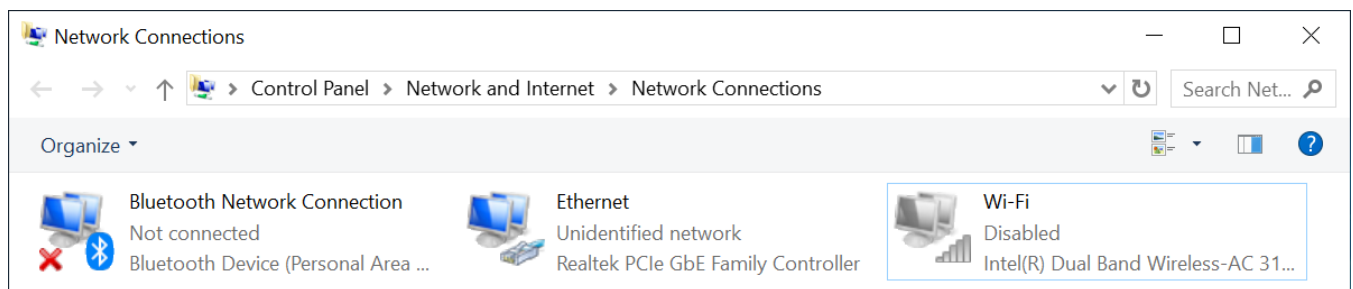


Figure 3: Network Connections

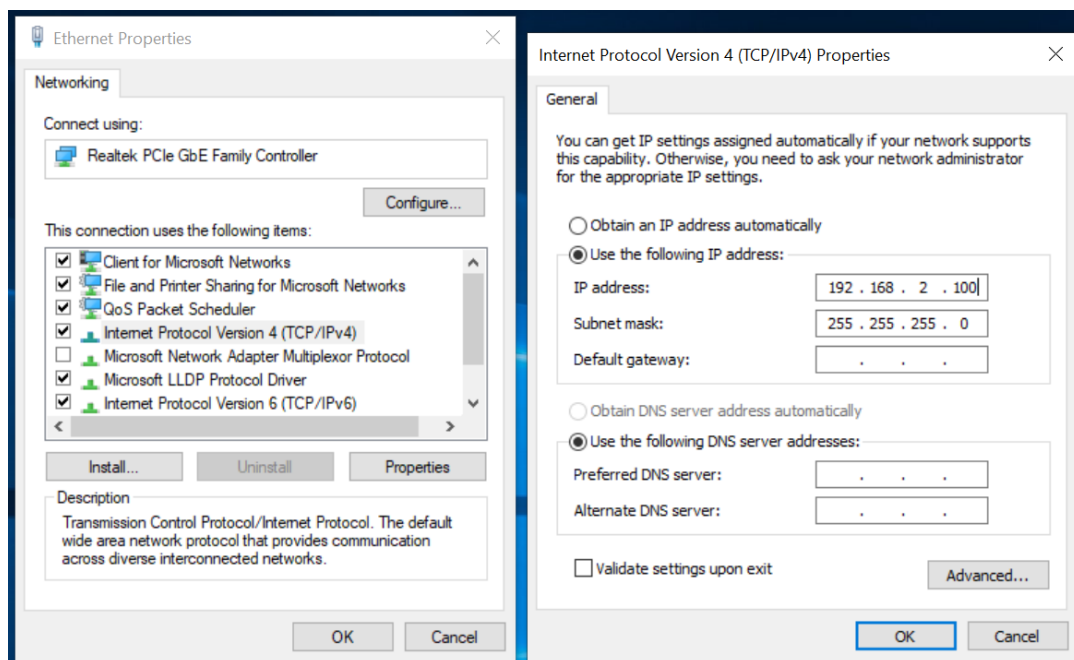


Figure 4: Ethernet and TCP/IPv4 Properties

4 Configure the Relay with DigiConnect 400

After communication configuration is enabled with Step 3, settings could be managed with DigiConnect400 PC Config Tool. It can be downloaded over <https://www.demarole.com.tr/en/product/400-series-protection-relays> address.

DigiConnect 400 is simple and easy to use tool which manages configuration of multiple relays on same project tree. DigiConnect can read/write settings to connected relays. Inside projects, offline relay configurations could be generated for future use as well.

Executing the program is easy as well. Please run DigiConnect400.exe. It will run without any installation.

First appearance is shown in Figure 5. Please select your **Language (Dil)** to **English (İngilizce)**.

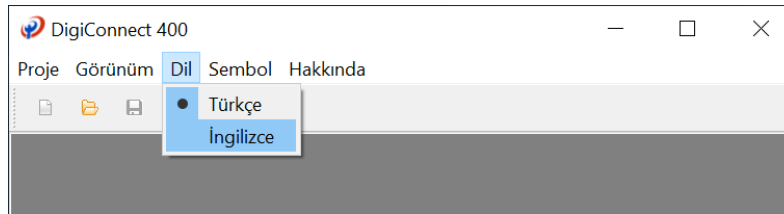


Figure 5: DigiConnect 400 Language Settings

Create your first project with '**Project > New**'. After giving a proper name, '**Project Tree**' will appear. To add new items to your tree, Right Click Project Name '**Example**' select '**New > IED Group**' (Figure 6). After creating a group, add a new '**Devices**' to your tree. Devices are different versions of DigiLine 400 series relays. Please select proper device.

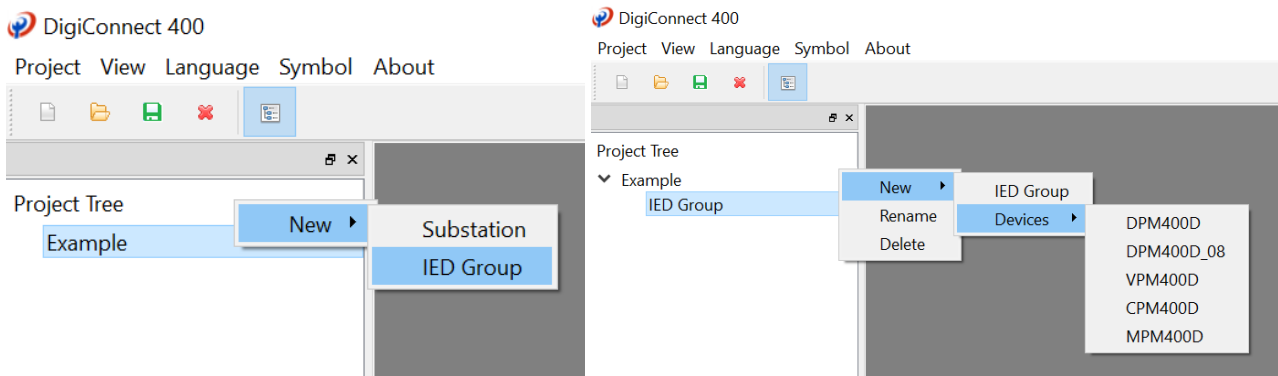


Figure 6: Adding New Objects to Tree

After selecting a new device, '**Configuration Window**' will pop up. This configuration allow user to add a device with specific settings and configuration.

Configuration Mode:

Online mode is used to read connected relay settings and add new device to your tree with that values. To use this mode, make sure the relay is connected.

Offline mode is used to append a device to your tree. When offline mode is selected, device Software Version and Configuration Type should be selected.

Software Version is used only in **Offline mode**. SW Version last digit is used to separate different configuration of the same relay due the software changes. Different configuration numbered devices uses different settings tables. To see SW of the relay on GUI, open the menu (Menu > Information > Product Identifiers).

Communication is used to identify which port is used when connecting the relay. If you select **rear port**, IP selection menu is opened, because front is fixed to 192.168.2.215. When **online mode** is selected, tool connect it with selected selection directly. When **offline mode** is selected, selection is recorded and used when user requested. Setting could be changed after adding on tree (Right click the Device and select Change IP).

Configuration Type is used only in **Offline mode**. Configuration type defines what kind of settings template for new added device. **Standard Configuration** is empty template. If **Example configuration** is selected, you can browse and select any created template. User could create their own templates with 'Export' properties (Right-click the added device). Make sure selecting right device type and configuration (SW Version) is selected.

After adding a device to your tree, user could navigate under settings. Settings could be changed but needs to be sent to relay after all changes. All changes are recorded project itself. It is not real-time change tool. **Device connection is only used when reading and writing.**

Additional operations are listed on Figure 8. Parameter Setting screen is shown in Figure 9. Additional operation could be done with each title on the tree.

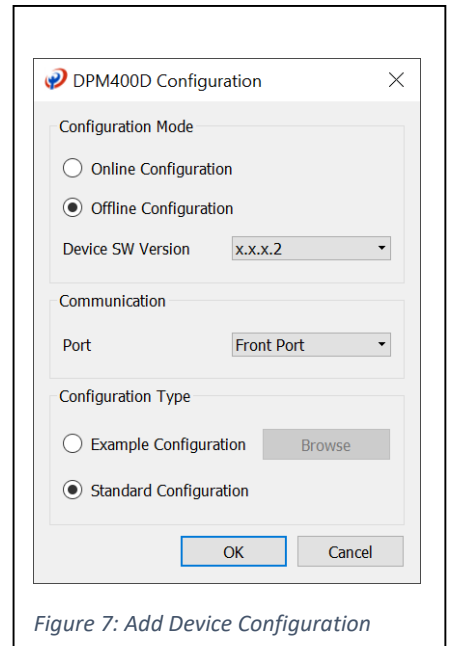


Figure 7: Add Device Configuration

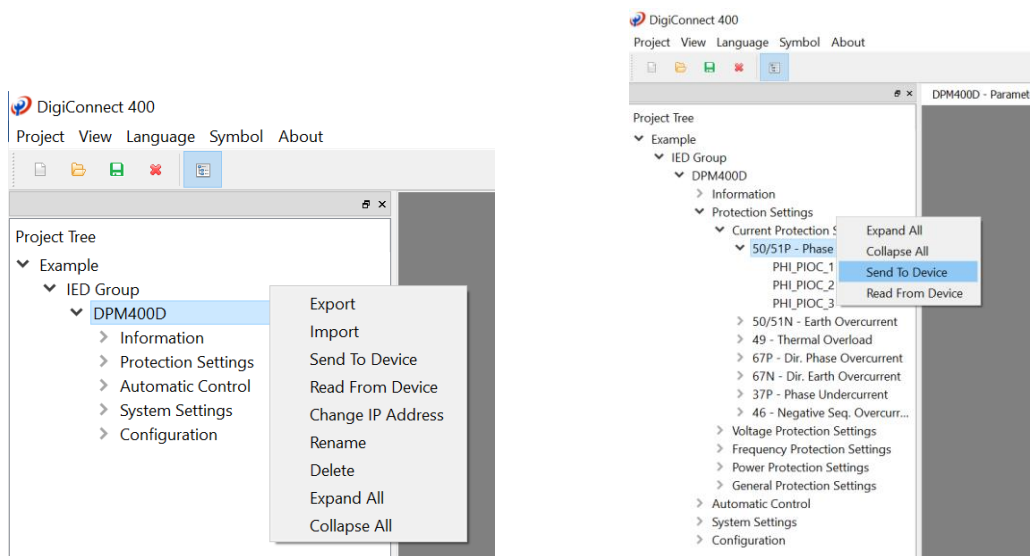


Figure 8: Additional Operations of Device

DPM400D - PHI_PIOC_1

Parameter Name	Old Value	New Value	Unit	Min.	Max.	Step	Help
Meas. Mode	RMS	RMS					
Group 1							
Protection	Passive	Passive					
Start Value	1.0	1.0	In	0.05	35	0.01	
Delay Type	IEC Def. Time	IEC Normal Inv.					
Operate Delay	1.0	1.0	s	0.02	200	0.01	
TMS	1.0	1.0		0.025	5	0.001	
Reset Type	DMT	DMT					
Reset Delay	0.1	0.1	s	0	60	0.01	
RTMS	1.0	1.0		0.025	5	0.001	
Group 2							
Protection	Passive	Passive					
Start Value	1.0	1.0	In	0.05	35	0.01	
Delay Type	IEC Def. Time	IEC Def. Time					
Operate Delay	1.0	1.0	s	0.02	200	0.01	
TMS	1.0	1.0		0.025	5	0.001	
Reset Type	DMT	DMT					
Reset Delay	0.1	0.1	s	0	60	0.01	
RTMS	1.0	1.0		0.025	5	0.001	

Figure 9: Parameter Setting Screen

Edited and not saved settings are emphasized with color. Make sure to save settings and sent it to device.

5 Configure the Relay with Webserver

After connecting the relay and PC, it is possible to connect the relay via Web Server. Open web browser of any kind and enter the relay IP address. Figure 10 is entering screen of the Web Server. Enter user name and password.

User email: dema

Password: dema

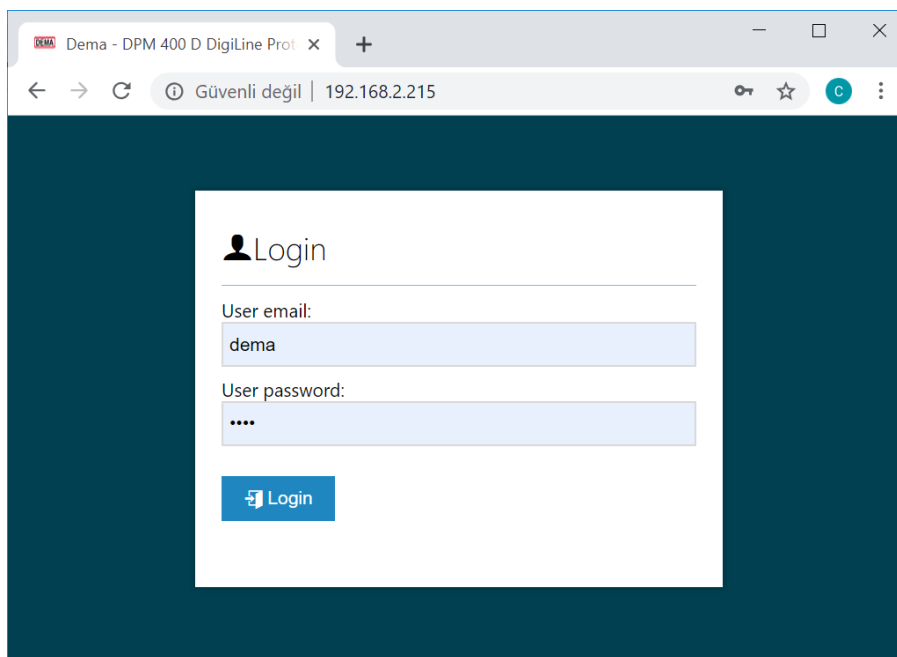


Figure 10: Web Server Enter Screen

Webserver is communicating with the relay in real time. Measurements could be observed. Setting could be seen and changed directly. Figure 11 shows tree and menus after entering Web Server.

DPM 400D

- Main Menu
- Information
- Measurements
- Protection Settings
- Automatic Control
- System Settings
- Configuration
- Recordings
- Order Menu
- Active Functions
- Function Test

Device Version

Description	Value
Device Type	DPM400D_08
Serial Number	DPM
Order Code	PROTOTIP-1
Production Date	10-11-2015 10:00
Configuration	F/O.1 F/O.2
SW Version	1.1.15.2
SW Date	29-03-2019 15:00
SW Number	1
HW Revision	D
Technical Key	DEMA1

Programmable LEDs

Description	Value
Faz tI>	<input type="checkbox"/>
Faz tI>>	<input type="checkbox"/>
Toprak tIe>	<input type="checkbox"/>
Toprak tIe>>	<input type="checkbox"/>
Termik tIΘ>	<input type="checkbox"/>
Buchholz Alarm	<input type="checkbox"/>
Buchholz Açma	<input type="checkbox"/>
Termometre Alarm	<input type="checkbox"/>
Termometre Açma	<input type="checkbox"/>
Basıç Açma	<input type="checkbox"/>

Device Status

Description	Value
Phase Fault	<input type="checkbox"/>
Earth Fault	<input type="checkbox"/>
Trip	<input type="checkbox"/>
Alarm	<input type="checkbox"/>
Power	<input checked="" type="checkbox"/>

Figure 11: Web Server Overview