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ADASH Ltd A4300 Loop-Relay Module User Manual

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Contents

## Introduction

Adash also offers relay and loop modules. This manual is used for description of these modules and their specifications.

Relay module is mostly used for signalization in practice. Just to imagine how it can work in practice, see simple scheme below.

MOTOR   Online unit A3800   Relay module   Signalization
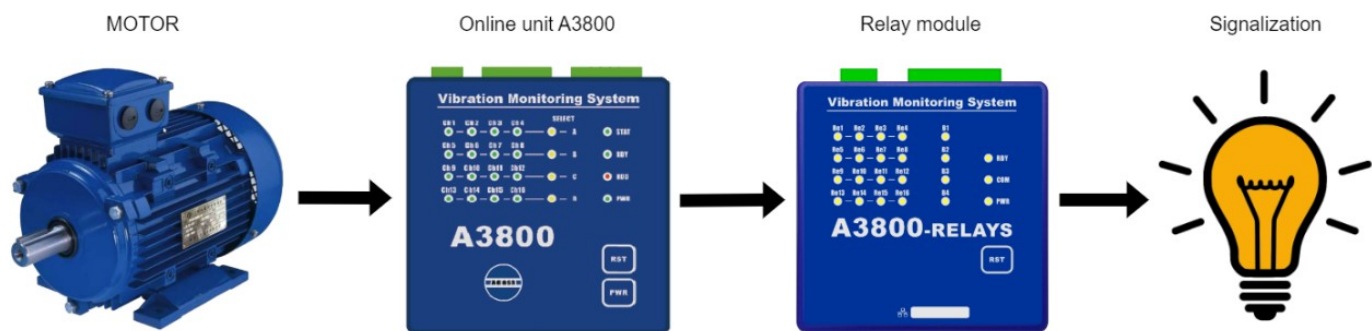
Let's explain this scheme. We have connected all components (motor, online unit, relay module and some bulb) together. In this example, imagine, that value 5 mm/s is value of vibration which we would like to know that it is exceeded. For such a situation we can use relay module. We get 5 mm/s value on motor. Online unit will measure this value. This value is in this moment also known to relays – relay is closed. The bulb is lightened up. In that moment we know, that value on the motor exceeded the value we set – 5 mm/s.

Loop module takes advantage of the excellent property of the current – it is well transferred over long distances; therefore, it is possible to "lead" the current out of the high-interference environment. Then it is great to use loop module to identify error states. Every measured value is linearly converted to a 4-20 mA current loop value. Values shown outside of this range are good indicators for error states.

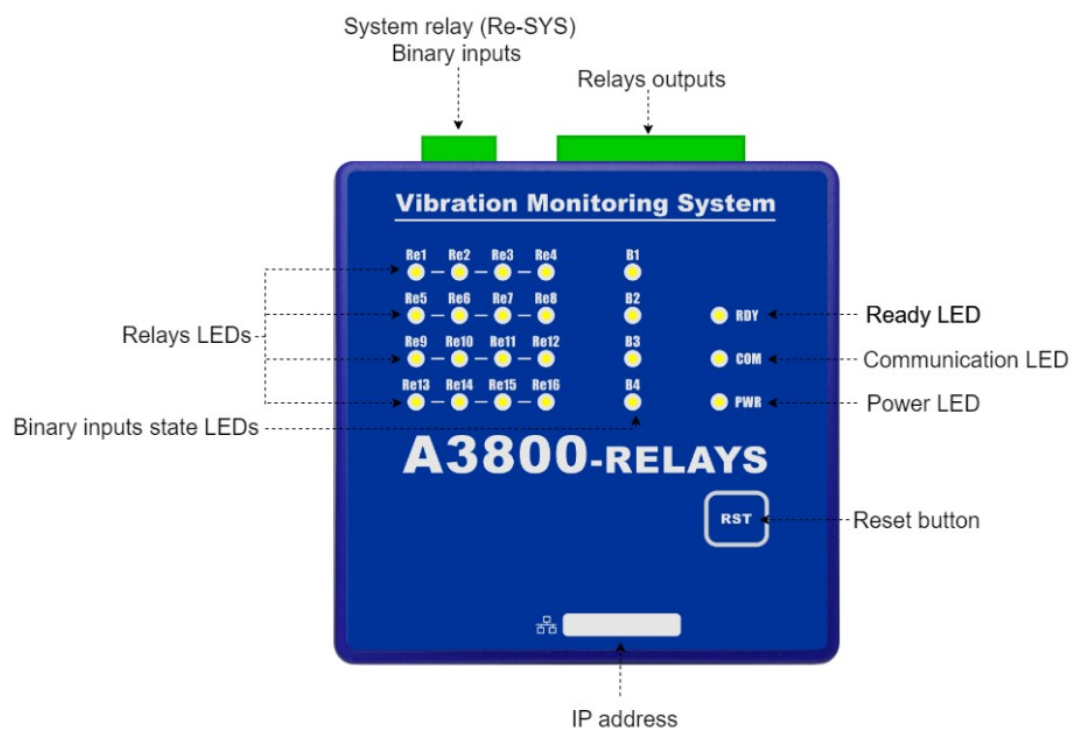MOTOR   Online unit A3800   Loop module   Meter
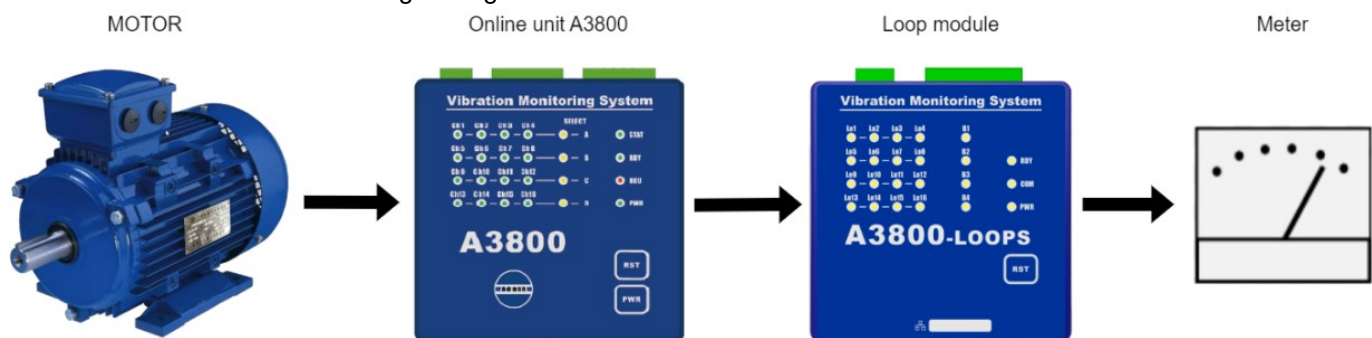
More specifications and descriptions of modules is shown in next chapters. If you are interested in more information about Adash online units (A3800), you can find them in the manual for online monitoring systems – **www.adash.com**.
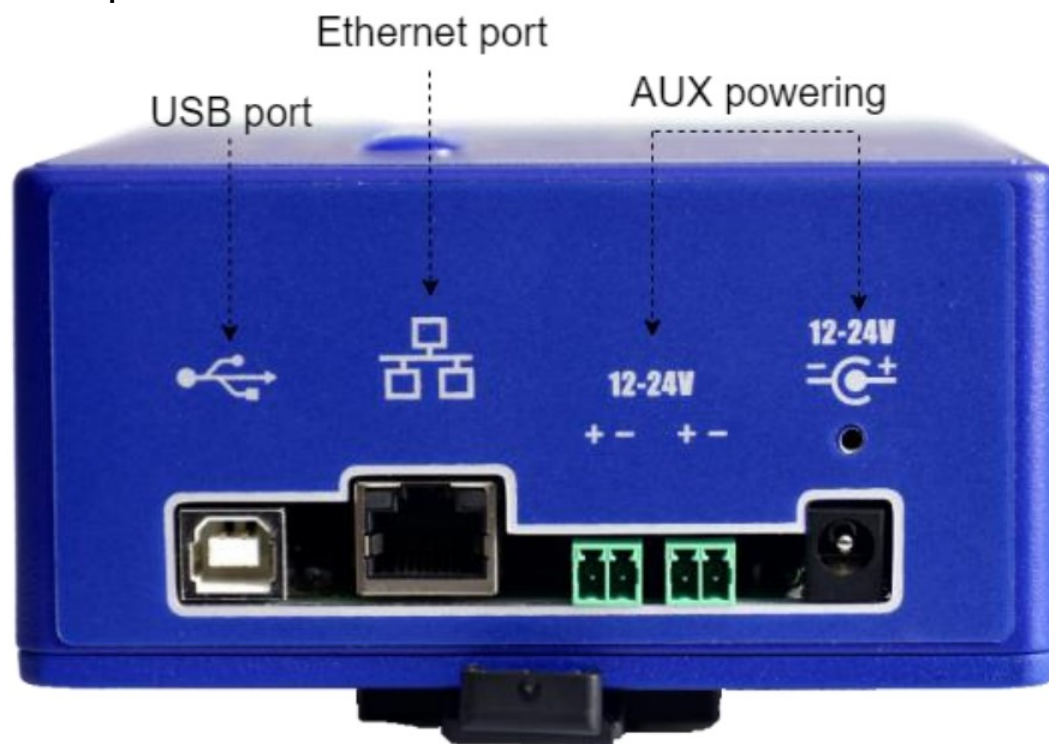
Description – relay module

Relay module is described in this chapter. Relay module specification is in chapter: Technical specifications .

Front panel of the module

System relay (Re-SYS)
Binary inputs

Relays outputs

Vibration Monitoring System

Re1 Re2 Re3 Re4   B1
Re5 Re6 Re7 Re8   B2   RDY — Ready LED
Re9 Re10 Re11 Re12   B3   COM — Communication LED
Re13 Re14 Re15 Re16   B4   PWR — Power LED

Relays LEDs

Binary inputs state LEDs

A3800-RELAYS

RST — Reset button

IP address

Bottom panel of the module

USB port

Ethernet port

AUX powering

12-24V

12-24V

Top panel of the module
Top panel of the relay module is shown in the picture below.
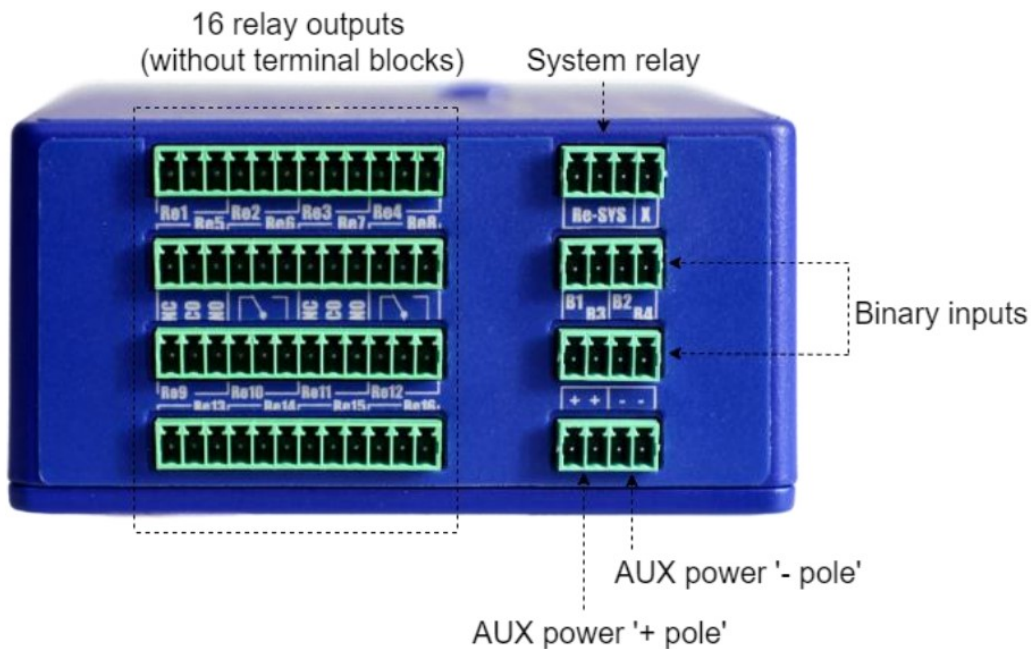
16 relay outputs (without terminal blocks)

System relay

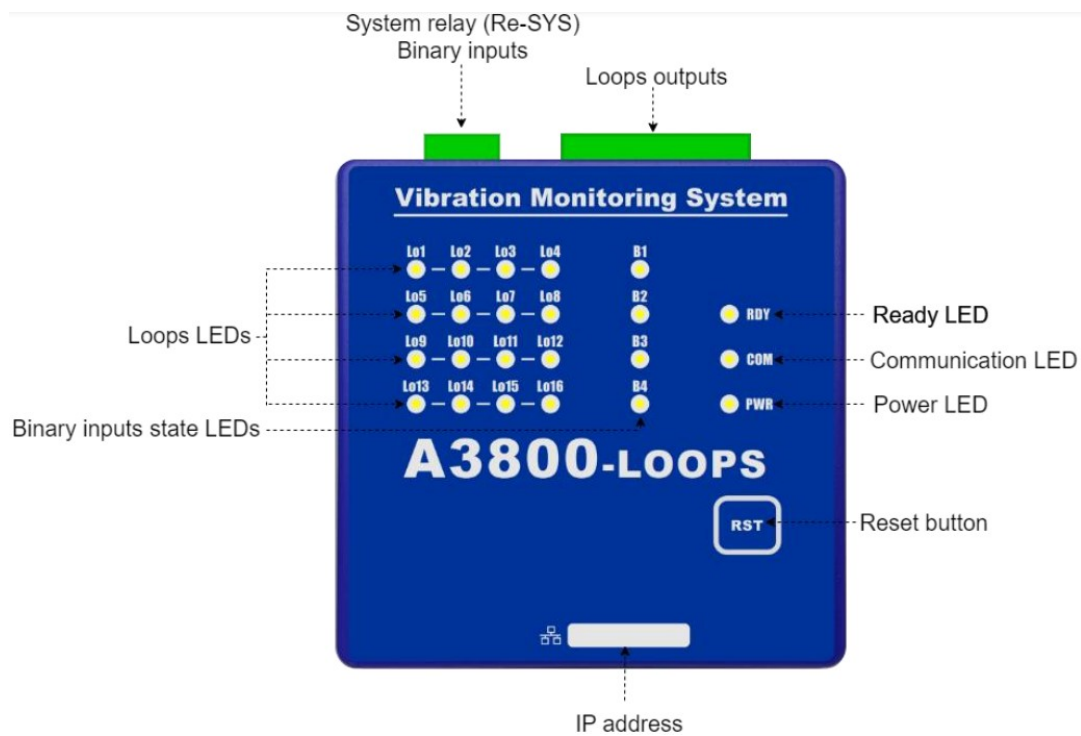Binary inputs

AUX power '- pole'

AUX power '+ pole'

Terminal blocks are used to connect supply wire or to connect several wires together in electrical engineering. Where to connect these terminal blocks and how they look like is shown in the following picture. We connect terminal block for relay 1 – 4.
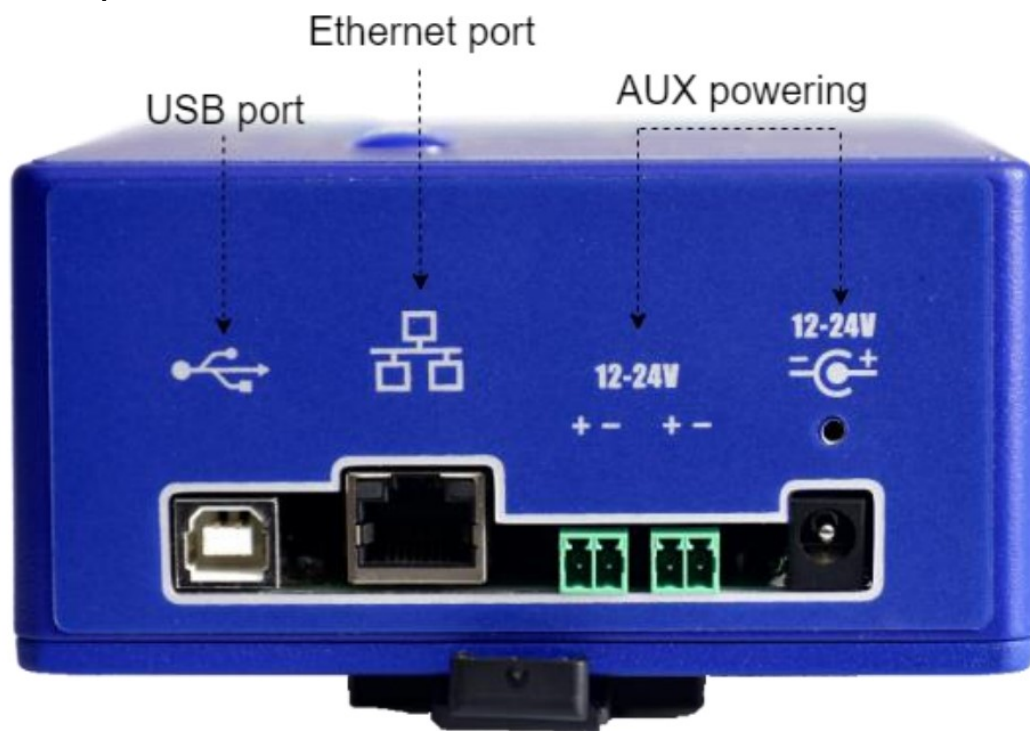

Terminal blocks connected
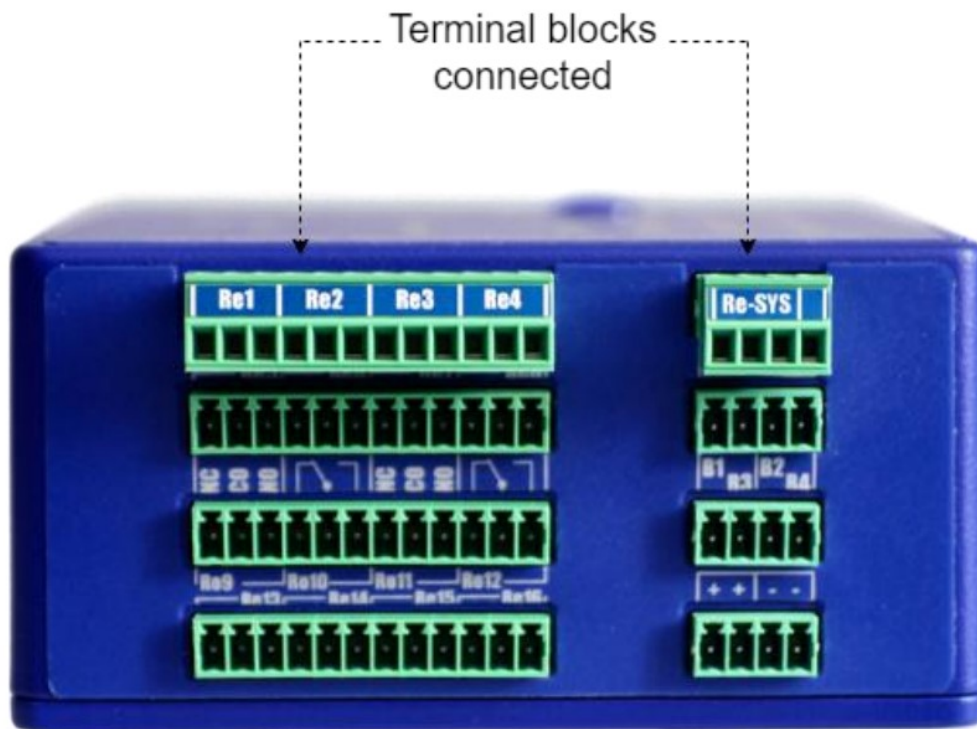
Description – loop module

Loop module is described in this chapter. Relay module specification is in chapter: Technical specifications.
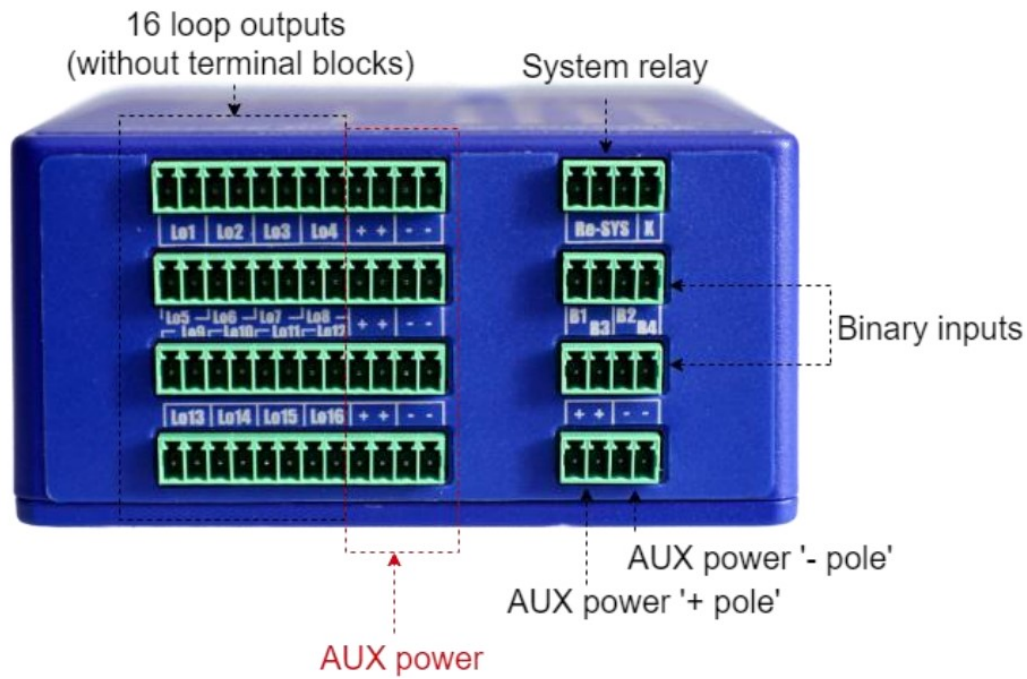**Front panel of the module**

System relay (Re-SYS)
Binary inputs

Loops outputs

Vibration Monitoring System

| Lo1 | Lo2 | Lo3 | Lo4 | B1 |
| Lo5 | Lo6 | Lo7 | Lo8 | B2 | RDY ···· Ready LED
| Lo9 | Lo10 | Lo11 | Lo12 | B3 | COM ···· Communication LED
| Lo13 | Lo14 | Lo15 | Lo16 | B4 | PWR ···· Power LED

Loops LEDs

Binary inputs state LEDs

A3800-LOOPS

RST ····· Reset button

IP address

Bottom panel of the module

USB port

Ethernet port

AUX powering

12-24V

12-24V
+ −   + −

Note:
AUX power is not needed for USB connection. It is needed only for Ethernet connection.

Top panel of the module

16 loop outputs (without terminal blocks)

System relay

Binary inputs

AUX power '- pole'

AUX power '+ pole'

AUX power

Terminal blocks are used to connect supply wire or to connect several wires together in electrical engineering. Where to connect these terminal blocks and how they look like is shown in the following picture. We connect terminal block for loop 1 – 4 and their powering.

Terminal block (loop 1-4, AUX power)
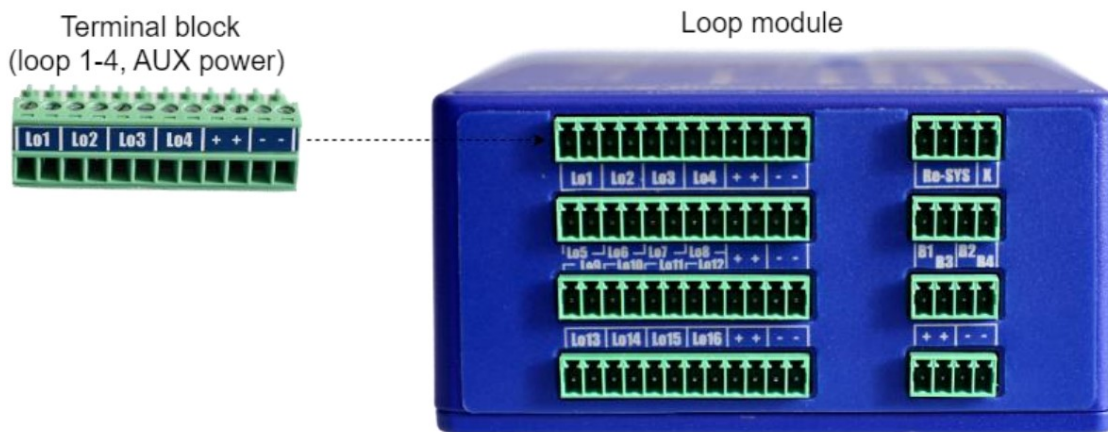
Loop module

You can see top panel of loop module with terminal block connected in the following picture.

Terminal block connected
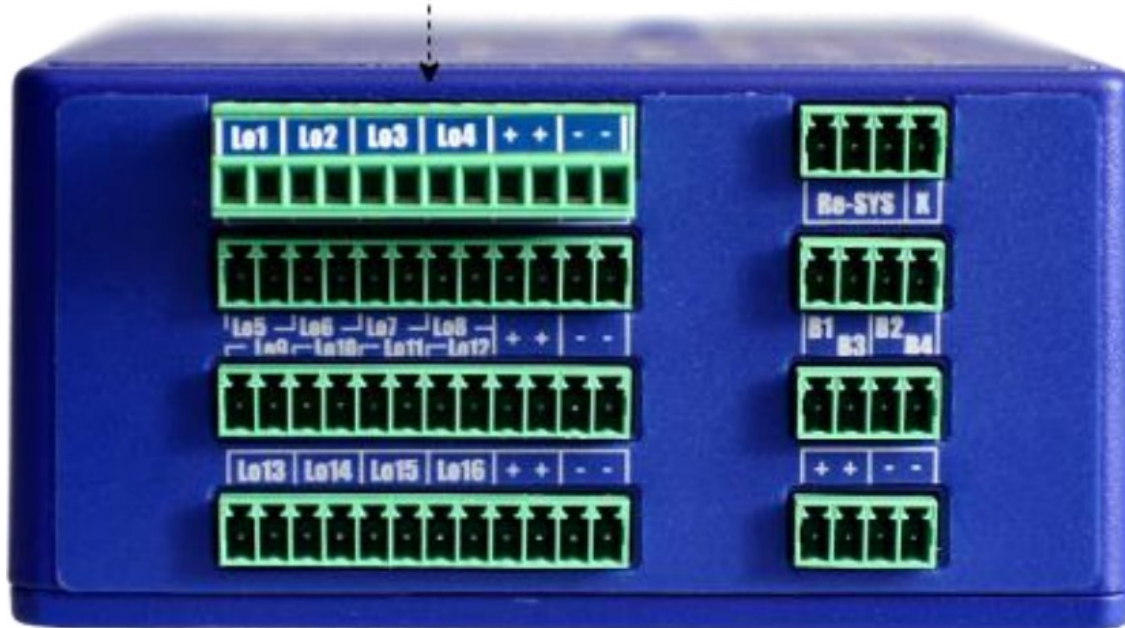
How to make module and A3800 communicate

Firstly, you need to connect module to online unit A3800. You do this with USB cable. USB port (module):

USB port (online unit A3800):

Next steps described below are for modules which were not set by Adash. Modules and online units A3800 are configured by Adash in production when you order them together.

When module is ordered separately and you already have A3800, you need to configure it by yourself. See following steps to proceed with it further.

Connect to online unit with remote desktop connection. Once you are connected you need to open device manager to configure communication ports (between online unit and module).
There is a different guide how to open device manager based on version of operating system in your online unit.
OS – Windows 10/11: click to Windows start button with right mouse button and go to Device manager.

OS – **Windows 7:** press Win + R and fill in devmgmt. msc command (see screenshot below). Confirm with **OK** and device manager opens.
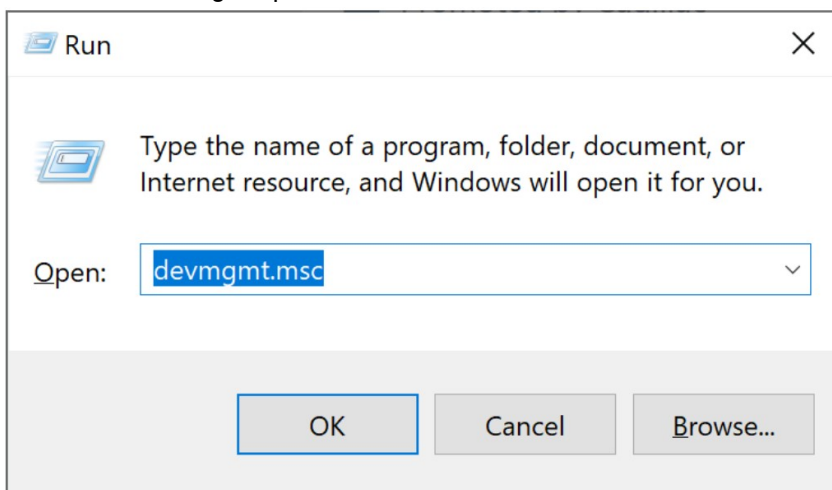
Once you have Device manager window opened, go to section for Ports (shown in the next picture).
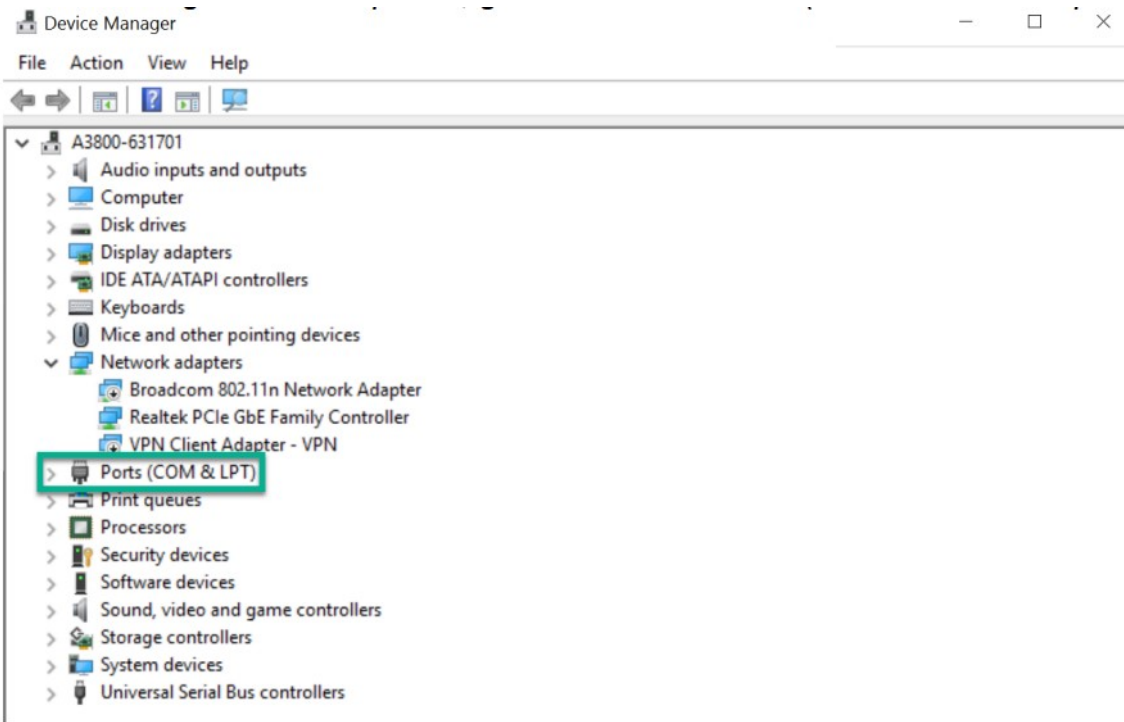
Find the port where your relay/loop module is connected (in our case it is port COM6). On which port your module is connected? Open Ports tab in device manager as shown in the following picture.
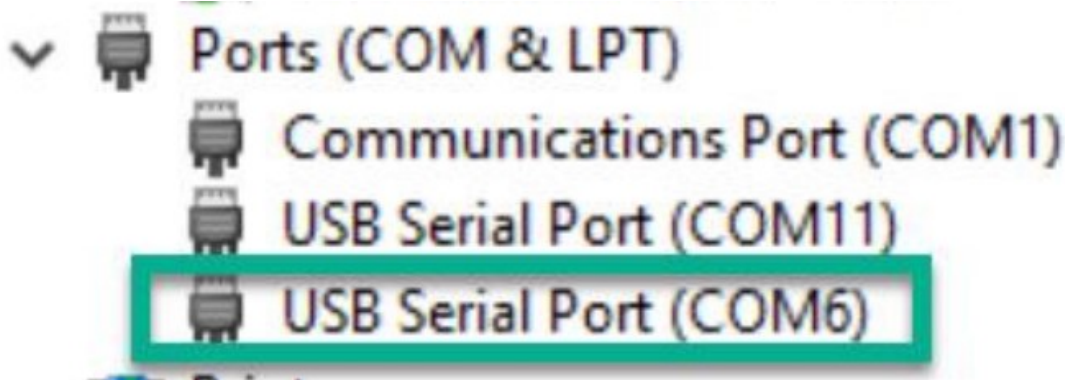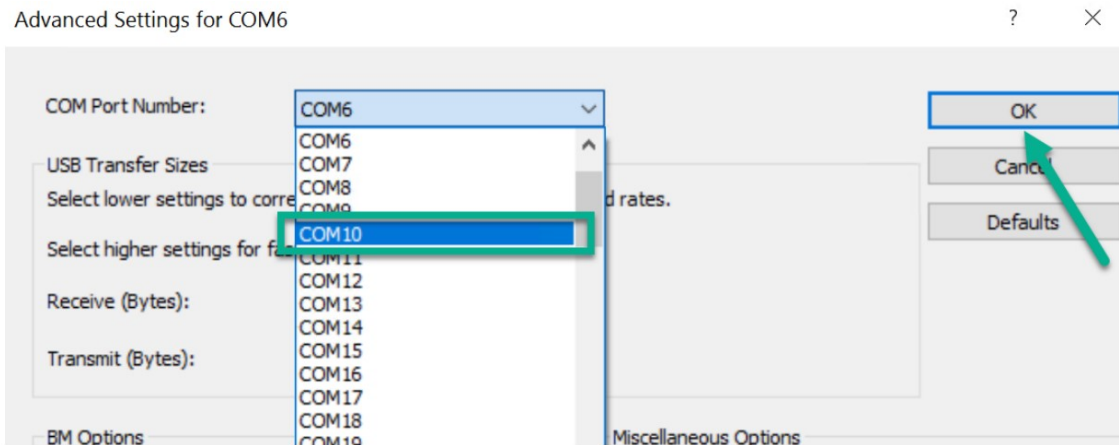

Then disconnect the module from online unit. You can see which COM port number is shown/hidden when you connect/disconnect your module.

Click on module port with right mouse button – **Properties.** Click on **Port Settings.**
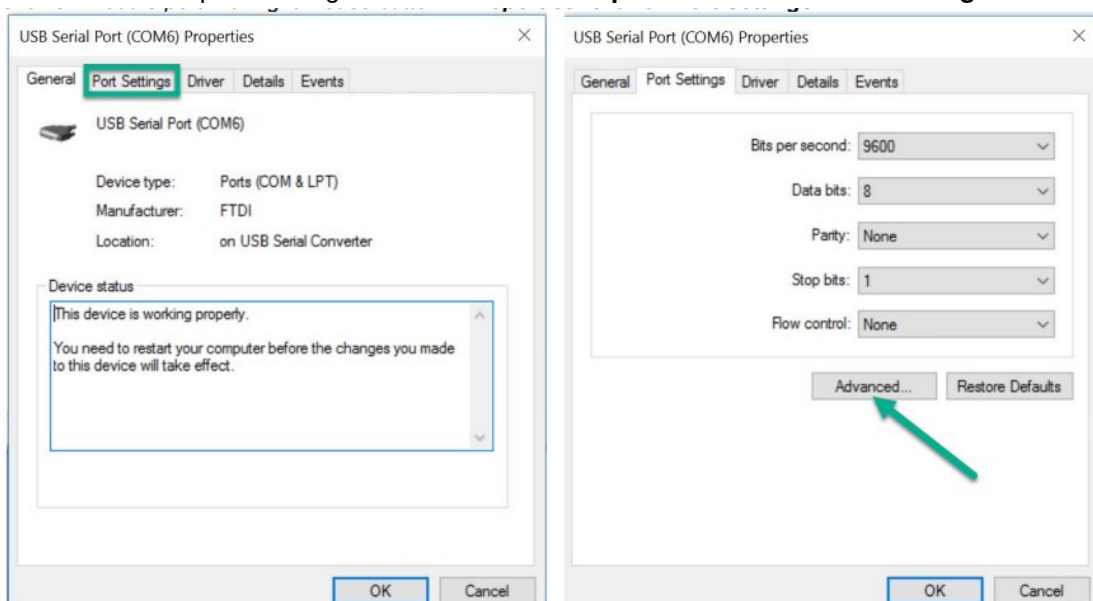
Click on **Advanced**

COM Port Number set to COM10 as below (it is default port set for communication between A3800 and module)

Confirm with OK button (confirm also the 'Properties' window).

Now you need to change config file for online unit. You can find it in this location C:\A3716\data. There is config file with name VA4.cfg. Open it with notepad. You need to change this part in config file:

[ONLINE BOARD]
port=-1

Port value set to -1 means that online board is not connected. So, we need to change it like this:

[ONLINE BOARD]
**port=10**
baud=115200
wdt=10000
keep vals=off
turn off when icp error=1

Once you paste this into config file, save the changes.

The next step is to create database in DDS and send this project to online unit A3800 (in other words – start data collection – DDS – Online tab – Start) – how to create database in DDS is described in manual for online monitoring systems.

When correct communication between online unit A3800 and module is established you can see LED light on for **RDY** and **PWR**.
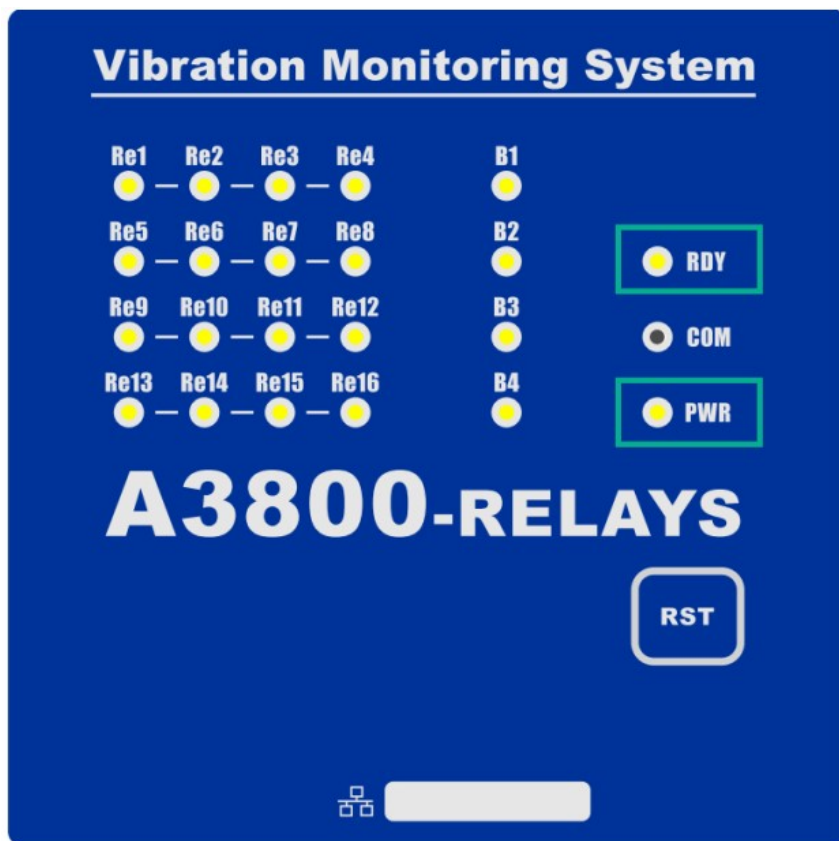
More settings

Next parameters for loops and relays are set in DDS software. More information (how to do it, which parameters are set and what they mean) you can find in DDS manual – www.adash.com .

DDS window for loop setting:

DDS window for relay setting:

ICP error signalization

In case of relay module, there is an option to signalize ICP error for sensors. For example, if the cable is corrupted or sensor is not working you can use this option of relay disconnection. What this actually means? When you turn on this function and cable connected to relay is corrupted, the system relay is closed (disconnected). It means that RDY LED turns off. In this case, you know that ICP error occurred.

How to set it correctly in configuration file?
As mentioned in chapters above, it depends if you order module with online unit A3800 or separately. If module is already set from production, this function (to disconnect the relay) is automatically turned on.
If you order module separately, you need to set it according to following steps.
Go to config file – you find it in this location C:\A3716\data – config file is named VA4.cfg.
Find section for online board:
[ONLINE BOARD] port=-1
This section you need to change.
[ONLINE BOARD]
port=10
baud=115200
wdt=10000
keep vals=off
turn off when icp error=1

Technical specifications

Documents / Resources

ADASH Ltd A4300 Loop-Relay Module [pdf] User Manual
A4300 Loop-Relay Module, A4300, Loop-Relay Module, Relay Module, Module

References

- ⊕ **Master the Language of Your Machinery | Adash**
- ⊕ **Master the Language of Your Machinery | Adash**

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