A3800 Step by Step

MASTER THE LANGUAGE OF YOUR MACHINERY

Adash

A3800 - Vibration Monitoring System
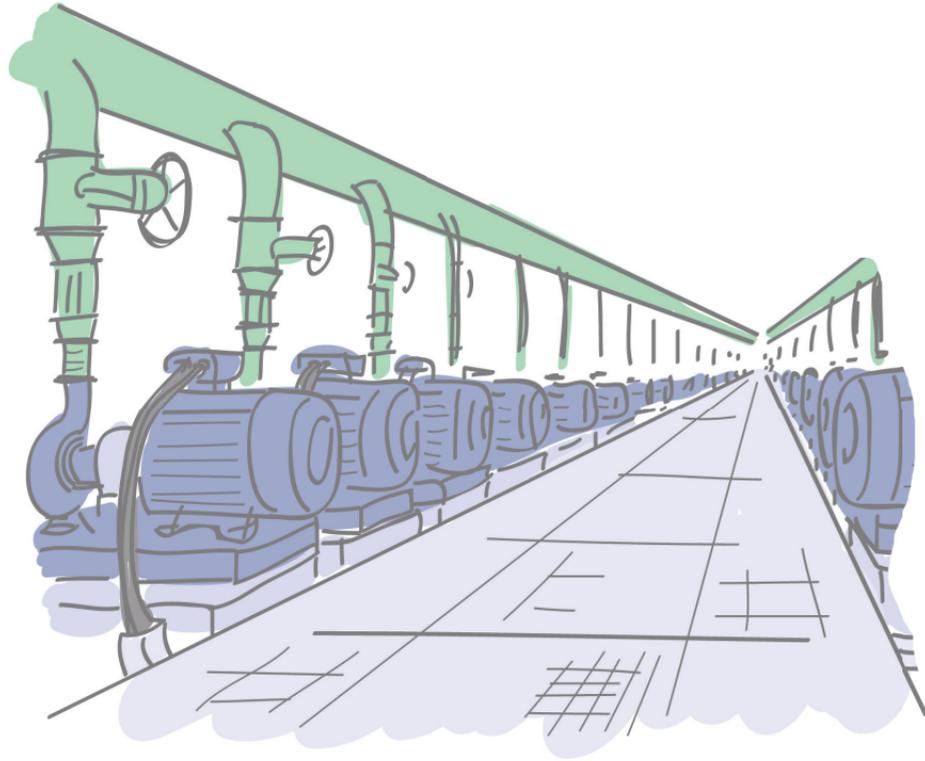
The **A3800** unit is the compact size on-line monitoring and diagnostic system. It is designed to increase machine reliability. The small size of the A3800 enables to mount it directly on the DIN rail. The optional number of channels (4, 8, 12, 16) is available on the A3800 unit. The same number of AC and DC channels are always available. The 4 tacho sensors can be used in 16 channel option. The number of channels is determined by the license file. When the user wants to increase the number of channels, then only the new license file is written to unit memory. No unit disassembling is required. Each group of 4 channels measures fully simultaneously. Individual groups of 4 channels are multiplexed.

The A3800 unit can be also used as a powerful multichannel analyzer. The setting and control is made by VA4 Pro - Virtual Unit software (free download).

Channels LEDs

Groups LEDs

Status LED

Ready LED

HDD Led

Power LED

Reset button

Power button
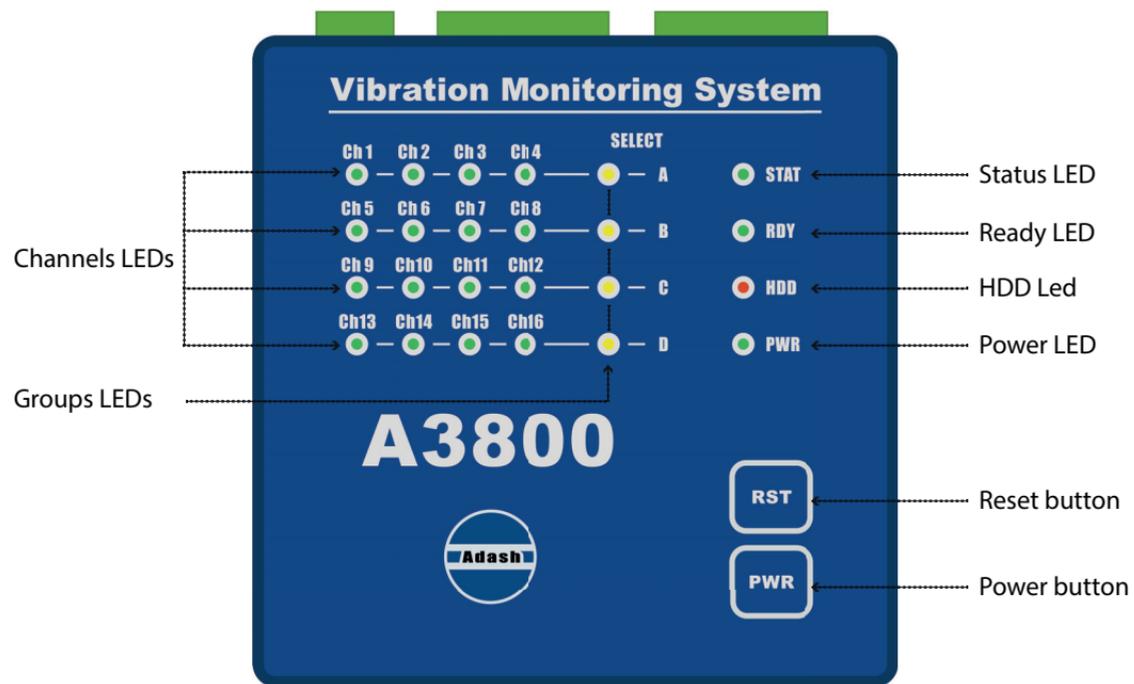
Channels LEDs indicate on which channels the measurement is defined.
Green color ... indicates good condition of the input channel, sensor and cable.
Flashing red color ... indicates sensor or cable error.

Groups LEDs indicate which channel group is active for measurement.
Orange color ... indicates active group.

Status LED indicates status of A3800 DSP board.
Fast flashing green color (four times per sec) ... measurement is running.
Slow flashing green color (one time per sec) ... waiting for measurement.
Red color ... DSP board error.

Ready LED indicates status of A3800 control board.
Green color ... control board OK.
Red color ... control board error.

HDD LED indicates r/w operation on HDD.
Red color ... r/w operation in progress.

Power LED indicates power on of A3800 unit.
Green color ... A3800 unit is power on.

Reset button ... press and hold for at least 5 seconds to reset control board.

Power button ... press and hold for at least 5 seconds to switch ON/OFF A3800 unit.
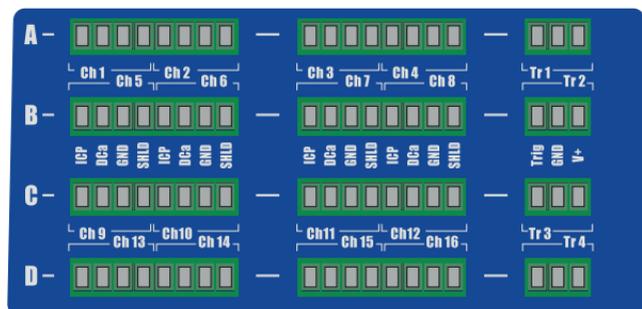
A3800 without connection terminals.
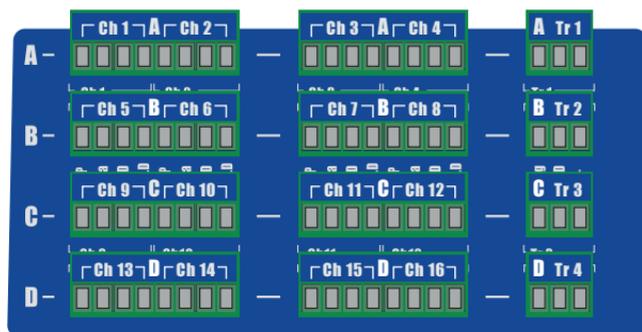
A3800 with connection terminals.

The connectors for connecting the sensors are located on the top panel. Connectors are divided into groups **A, B, C, D**.

Group A: AC and DC channels 1 – 4, TACHO input 1.
Group B: AC and DC channels 5 – 8, TACHO input 2.
Group C: AC and DC channels 9 – 12, TACHO input 3.
Group D: AC and DC channels 13 – 16, TACHO input 4.

Input labels:
ICP ... AC input with ICP® powering
DCa ... DC input
GND ... common ground for AC and DC inputs
SHLD ... shielding
Trig ... TACHO (trigger) input
GND ... ground
V+ ... 5 V TACHO powering, max. 250 mA

Input ranges:
AC input: +/-12 V peak - peak
DC input: +/-24 V or 4 – 20 mA
TACHO +10 V
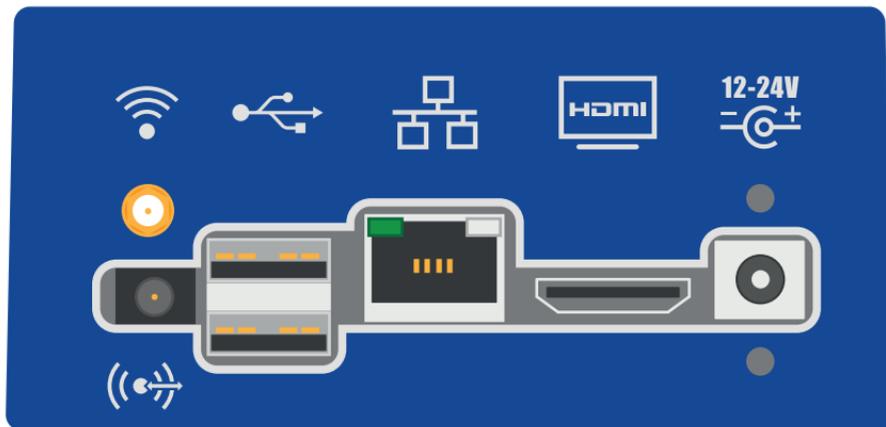
WiFi: input for WiFi antenna (optional).

AUDIO I/O: 3.5 jack audio socket.

USB 2.0: two USB ports.

ETHERNET: Ethernet socket.

HDMI: HDMI port (monitor connection).

POWER: socked for 12-24 V DC powering.

Acceleration Sensor Connection - AC Input

A ... AC, ICP® powering, 22 V, 4 mA
B ... Ground

Shielding
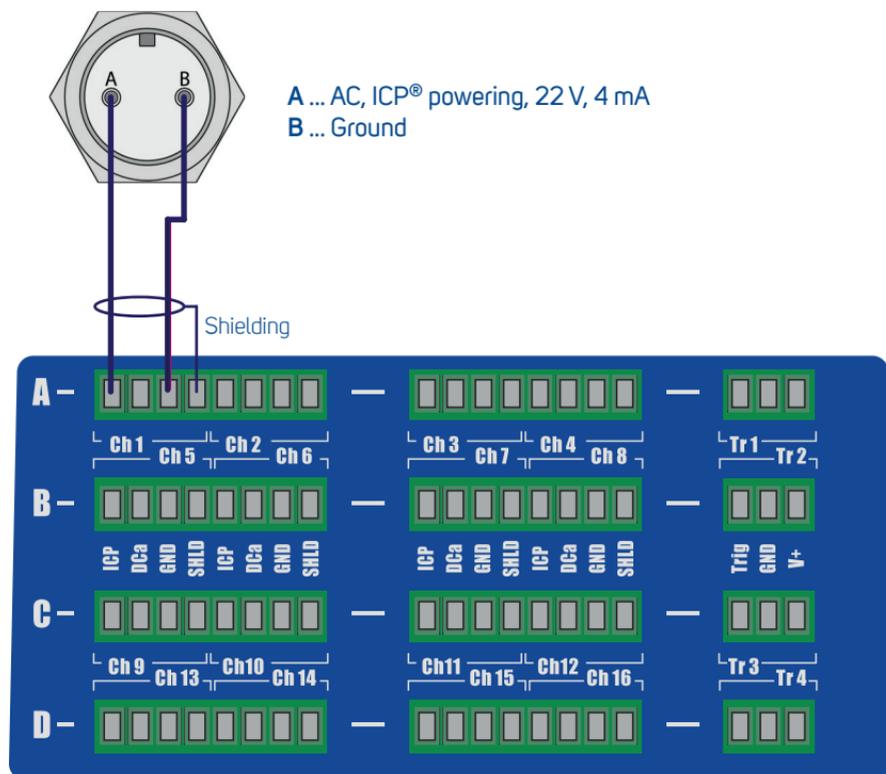
Acceleration and Temperature Sensor Connection - AC and DC Input

A ... AC signal, ICP® powering, 22 V, 4 mA
B ... Ground
C ... DC signal, temperature

Shielding

Tacho Trigger (Speed Probe) Connection
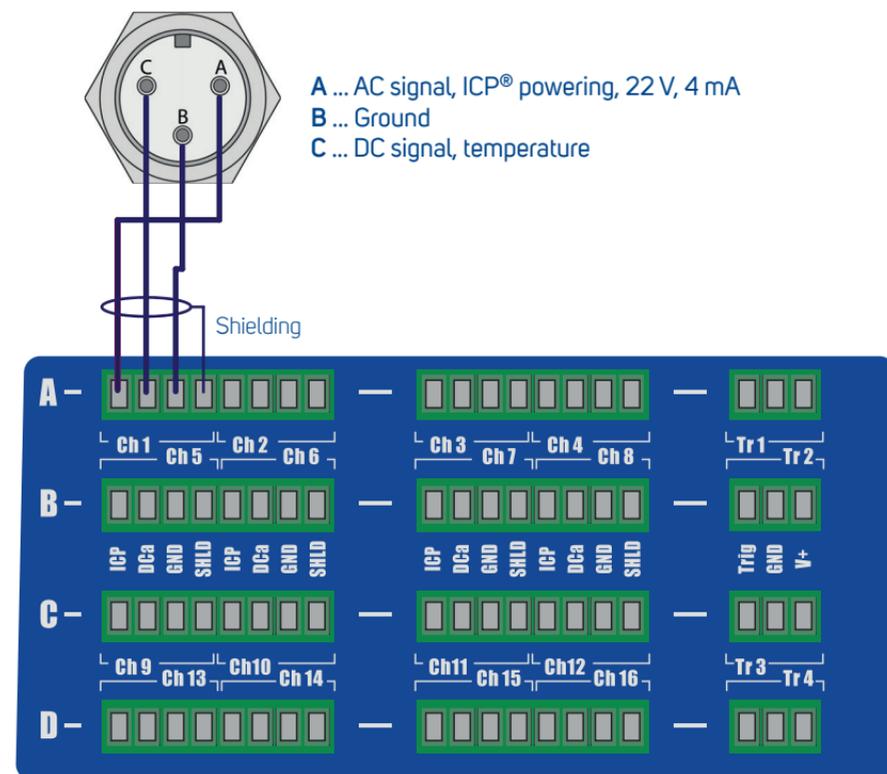
Tacho: MINI VLS 2011
1 ... +5 V Powering
2 ... No Used
3 ... Ground
4 ... Trigger Signal Out

Power Supply
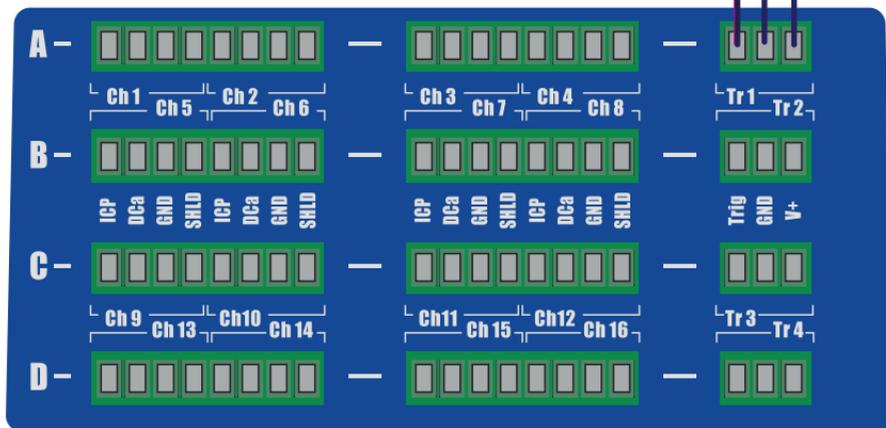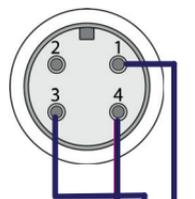
The A3800 unit is powered by DC voltage 12 - 24 V. Power consumption is max. 10 W.
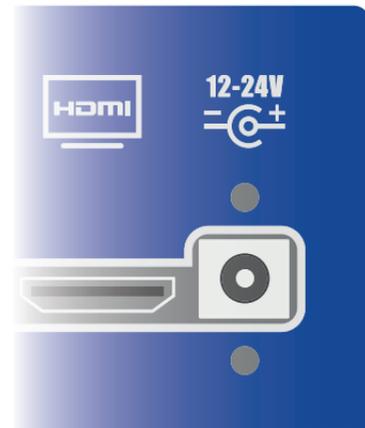
Serial Number:
Each A3800 unit has a unique 6-digit serial number. This serial number is used for creation of the unit name and its IP address.

Unit Name:
This is the name under which the unit is displayed in the computer network.
Initially it is "A3800-"Serial Number. For the unit below it is "A3800-628905".

IP Address:
Is a numerical label assigned to each device connected to a computer network.
The IP address is initially set to:
192.168.1.2xx ... for unit serial number ending by 00-09,
192.168.1.1xx ... for unit serial number ending by 10-99.
IP address (factory setting) is written on the A3800 front panel.

Serial Number   IP Addreess

You will probably need to change the A3800's IP address for proper operation.

1. Use the LAN cable and connect the A3800 unit with PC directly or through network (switch/HUB).

2. Press Win ⊞ + R. Type "mstsc" and press Enter.
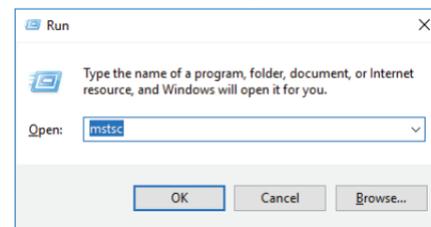
3. New window **Remote Desktop Connection** appears. Enter **Unit Name** or **IP Address** and press **Connect**.
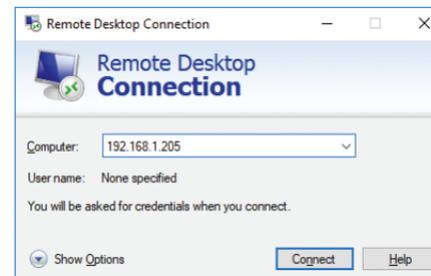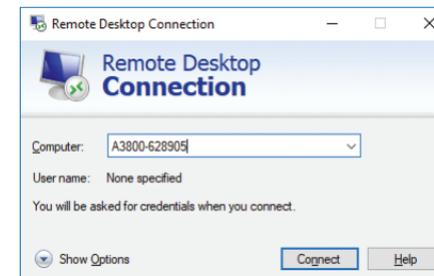
IP Address   Unit Name

4. New window appears. Type **"remote"** for user name and password.
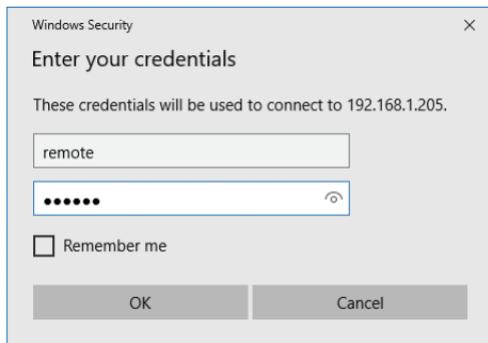
5. Now you will be connected to the A3800 unit. Press Win ⊞ + R. Type **"ncpa.cpl"** and press Enter.
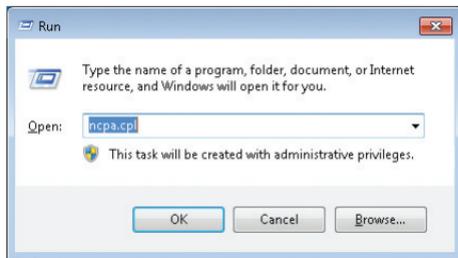
6. Network connection window will open. Select network adapter (usually Local area connection), click right mouse button and select **Properties**.
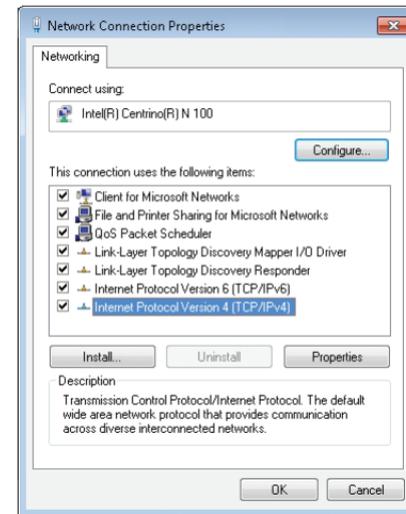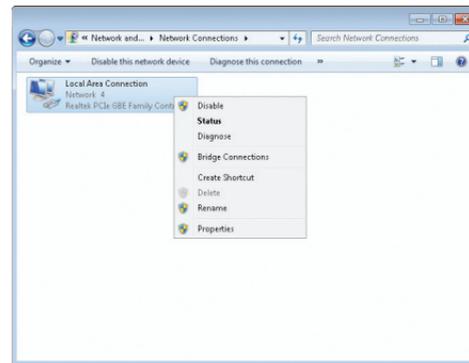
7. Select **Internet Protocol IP Version 4 (TCP/IPv4)** and click on **Properties** button.

8. New window appears. You can change IP address of A3800 unit on **General** tab in the box **IP address**. After this change you have to create the new remote connection (connection with old IP address will stop working).

Type new IP address.
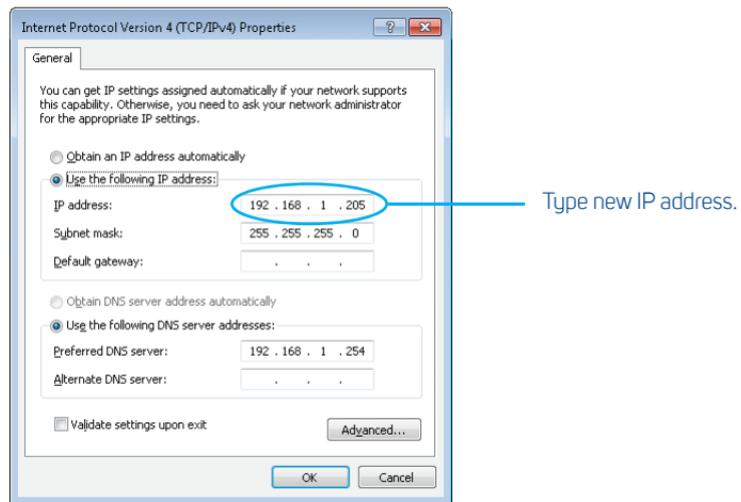
The A3800 unit's IP address has to be in the same subnet as your PC. Contact your IT department in order to get IP address according to your network.

OPC protocol:
Each A3800 unit has an OPC server installed. Both OPC DA and OPC UA standards are available.
For more information about OPC communication contact us at **info@adash.com**.

DDS - Data Manager:
This software allows you to make measurement settings and data transfer to the database.

A3800 Unit

MeasEngine

OPC Server

Server

DataEngine
DDS - Data Manager
Adash Online Server

Workstations

DDS

DDS

OPC Client
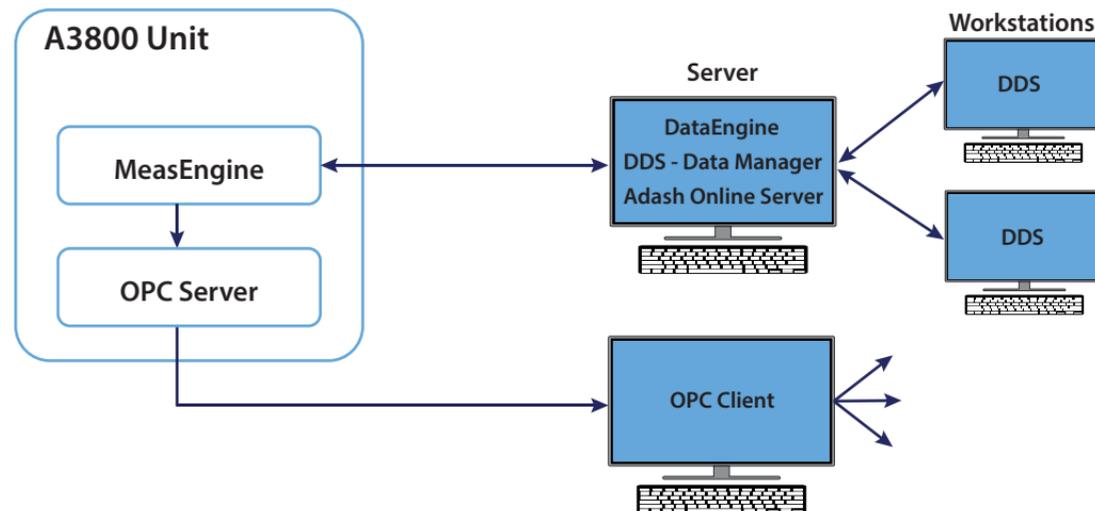
To set up A3800 unit you need to install **DDS - Data Manager** and **Adash Online Server** (MySQL) software. Microsoft SQL Server database system is also supported. For more information about installation of DDS - Data Manager and Adash Online Server visit our web site **www.adash.com**.

Run the **DDS - Data Manager** software after installation.

DDS - Data Manager software startup window.

Click **New** in the **Tree** tab (small down arrow) and select **Online** item.

Database parameters window appears. Enter the DDS database name and SQL server database name (small characters, without space and special characters), IP address or name of the computer where you installed **Adash Online Server**. In case you installed the **Adash Online Server** on your local PC, type **"localhost"** into the **Server** item. Then enter **"adash"** as **User** name and **"adash"** as a **Password**. Confirm by **OK** and new empty online database will be created.

Created online database with empty window and empty tree will appear.
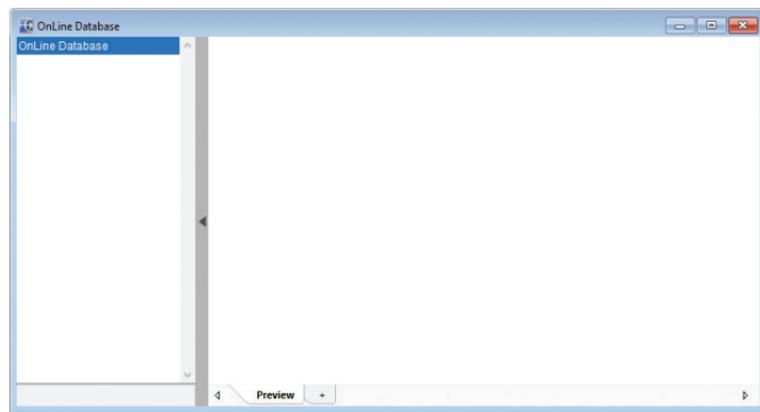
New **Online** tab will appear on the **DDS - Data Manager** software tool bar. **Online** tab will not appear in case you did not install the MySQL with ODBC connection.
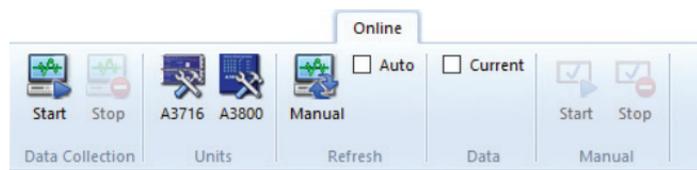
Now you have to create required tree structure in the **OnLine Database**. The following hierarchy will be done: Machine -> Measurement Point -> Data Cells. See **DDS** manual about how to create the tree structure. All data cells in the **OnLine Database** tree will be used for online readings.
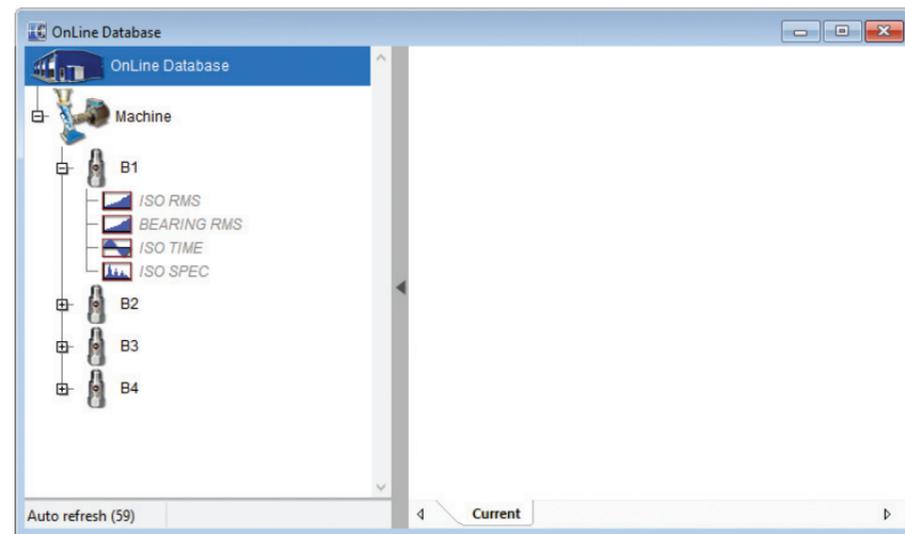
Now you have to assign the A3800 unit into the **OnLine Database**. For this purpose the A3800 unit must be already connected to the local network.

Select **Online** tab and click on **A3800** units button.
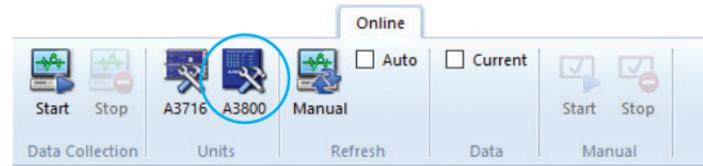
New window with list of A3800 units list appears.
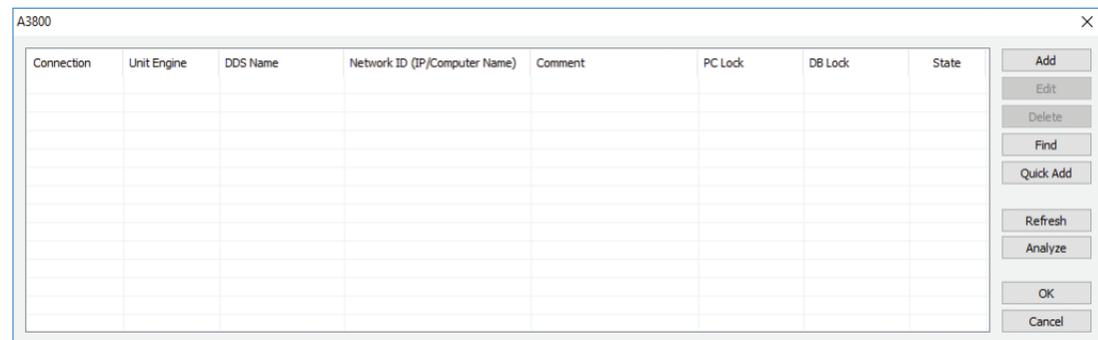
Click **Add** button and enter IP address or network name of the new unit. Enter the **DDS Name** also. The unit will be visible under this name in the DDS software. We entered My 3800 name.
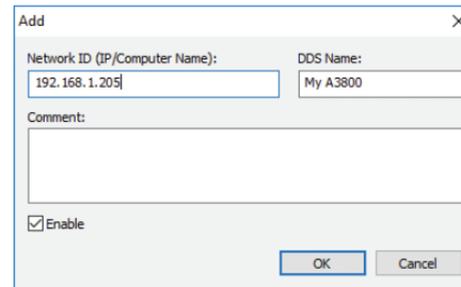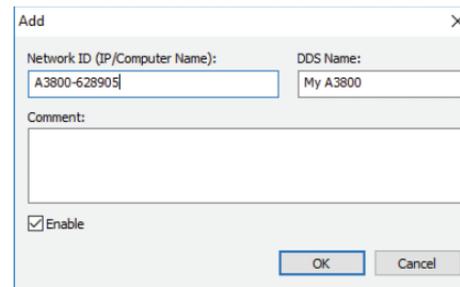
IP address   Unit name

You can also use the **Find** button in order to find A3800 units on the local network.
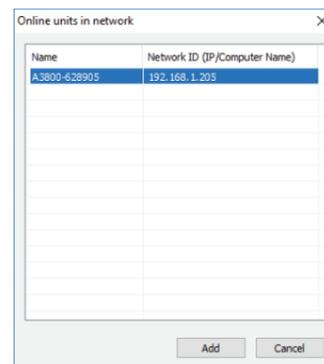
A3800 unit will be displayed in the list. **DDS Name** is **My A3800**. Click OK for adding it into the list.
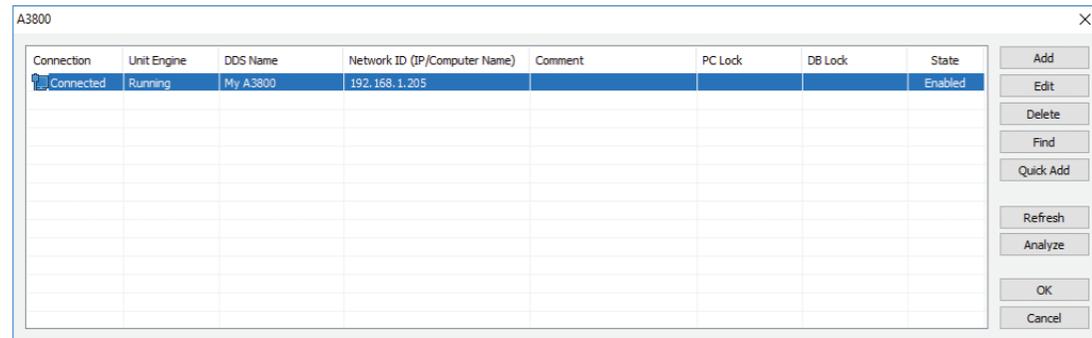
Buttons functions:

Add: adds A3800 online device into database (in our case into the **OnLine Database**).
Edit: edits selected A3800 online device.
Delete: removes selected A3800 online device from database (in our case from the **OnLine Database**).
Find: searches for A3800 online devices inside local network.
Quick Add: adds all A3800 online devices which were found in the local network into database.

Refresh: updates information about all A3800 online devices on the list.
Analyze: analyzes all measurements that were sent to selected A3800 online device.

After right mouse click the local menu will appear.
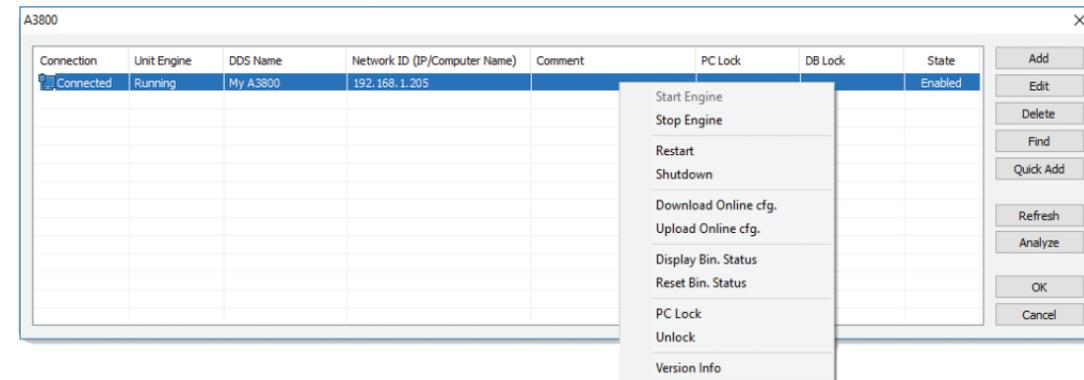
Local menu functions (for selected A3800 online device):
Start Engine: starts Measurement Engine of A3800 online device.
Stop Engine: stops Measurement Engine of A3800 online device.
Restart: resets A3800 online device (RST button on A3800).
Shutdown: - shutdowns A3800 online device (PWR button on A3800).
Download Online cfg.: downloads configuration file of A3800 online device (adaptive algorithm settings).
Upload Online cfg.: uploads configuration file of A3800 online device (adaptive algorithm settings).
Display Bin. Status: displays internal parameters of adaptive algorithm (relative changes).
Reset Bin. Status: resets internal parameters of adaptive algorithm (relative changes).
PC Lock: locks A3800 online device to the computer.
Unlock: removes PC Lock.
Version Info: displays firmware version of A3800 online device.

Now we are ready to assign A3800 unit and channel to selected measurement point in the **OnLine Database.**
Open the local menu of selected measurement point (right-click on the point and select **Properties**). Select the first tab (**1D, 2D** or **3D**) and set item **Online Unit** and **Channel**. If the data cells are already defined, then the tree structure of **OnLine Database** is ready to send to A3800 unit and to start the data readings.
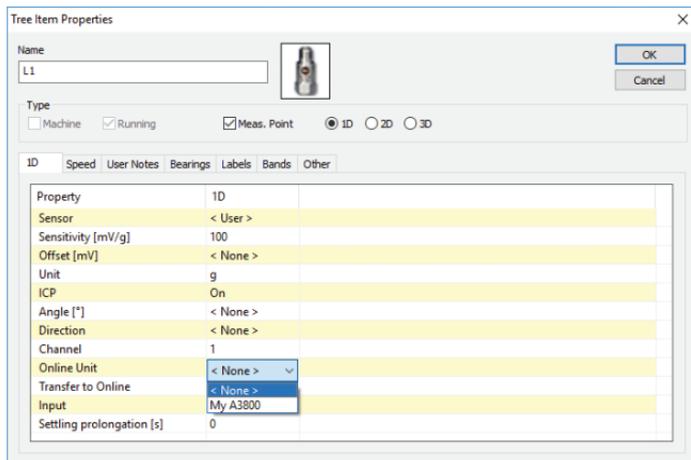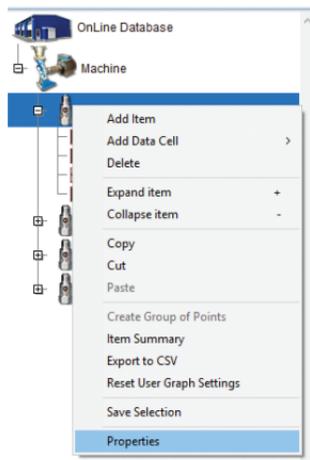
To start/stop of the data collection use the **Start** or **Stop** buttons in **Data Collection** section in **Online** tab. After pressing Start the data collection is started. The software is registered as service (with the name AdashDM_NameDB). In case of a computer reset the service starts again automatically.
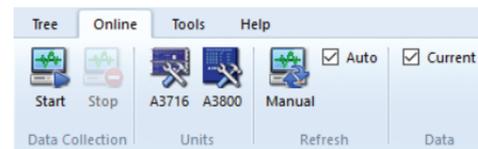
DDS - Data Manager enables to read the actual static measurements anytime. Select required measurement point(s) in the tree and select **Current** check box in **Data** section.
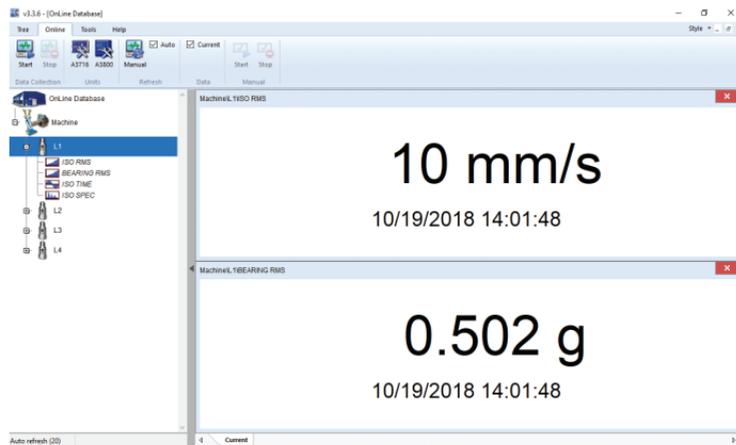
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