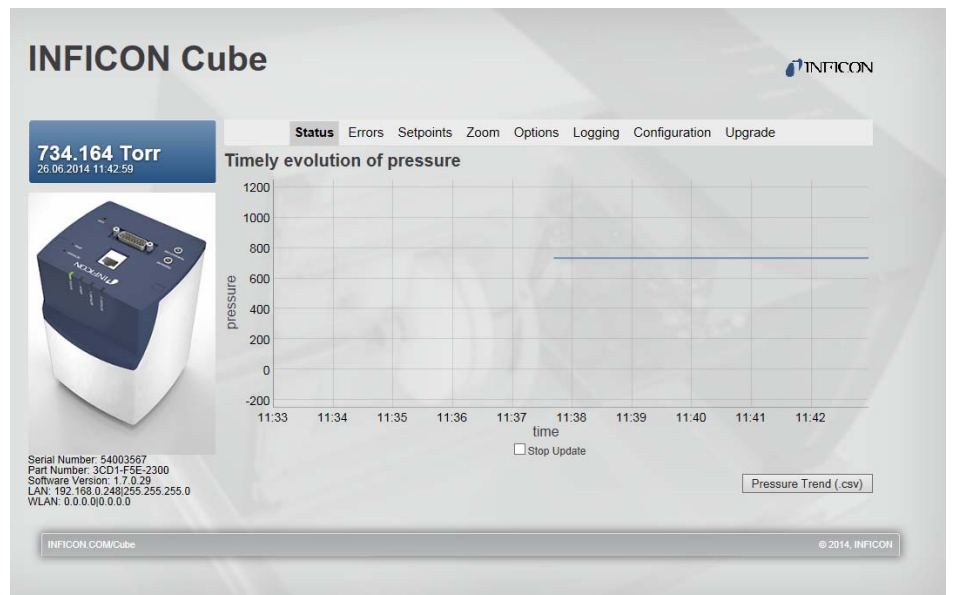INFICON

Web Interface

for Capacitance Diaphragm Gauge

Cube CDGsci

General Information

This document contains instructions for operating INFICON Cube using the built-in web interface.

☞ For safety information, specifications and operation instructions of the vacuum gauge refer to the appropriate Operating Manual (→ 📖 [1]).
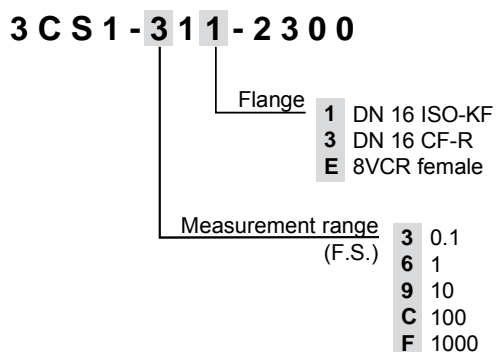
☞ The web pages may only be viewed and operated correctly with the following internet browsers:

- Firefox > version 20
- IE ≥ version 10.

Validity

This document applies to products with part numbers:

3 C S 1 - 3 1 1 - 2 3 0 0

Flange
1	DN 16 ISO-KF
3	DN 16 CF-R
E	8VCR female

Measurement range (F.S.)
3	0.1
6	1
9	10
C	100
F	1000

The part number (PN) can be taken from the product nameplate.

If not indicated otherwise in the legends, the illustrations in this document correspond to Cube CDGsci gauges with the DN 16 ISO-KF vacuum connection. They apply to gauges with other vacuum connections by analogy.

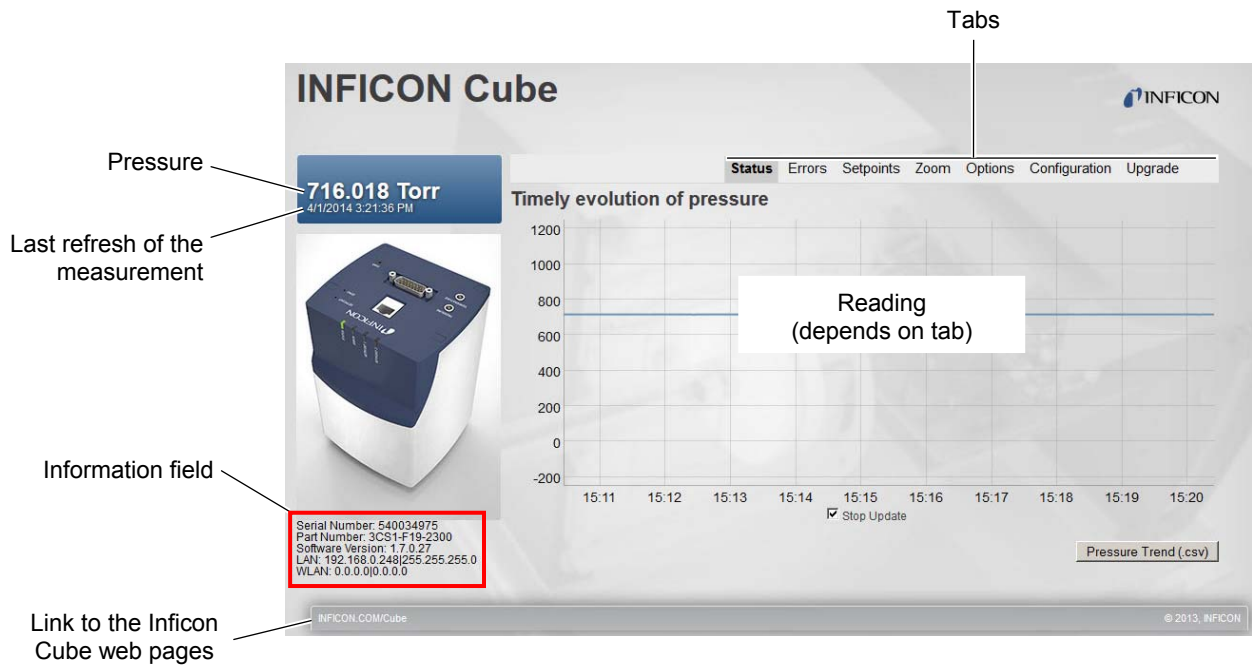We reserve the right to make technical changes without prior notice.

Contents

For cross-references within this document, the symbol (→ ▤ XY) is used, for cross-references to further documents, listed under literature, the symbol (→ 📖 [Z]).

1 Operation

1.1 Overview

Tabs

Pressure

Last refresh of the measurement

INFICON Cube

INFICON

716.018 Torr
4/1/2014 3:21:36 PM

Status Errors Setpoints Zoom Options Configuration Upgrade

Timely evolution of pressure

Reading
(depends on tab)

Information field

Serial Number: 540034975
Part Number: 3CS1-F19-2300
Software Version: 1.7.0.27
LAN: 192.168.0.248|255.255.255.0
WLAN: 0.0.0.0|0.0.0.0

1200
1000
800
600
400
200
0
-200

15:11 15:12 15:13 15:14 15:15 15:16 15:17 15:18 15:19 15:20

☑ Stop Update

Pressure Trend (.csv)

Link to the Inficon Cube web pages

INFICON.COM/Cube

© 2013, INFICON

The information field displays the following:

- Serial number of Cube
- Part number of Cube configuration
- Software version
- LAN settings
- WLAN settings.

1.2 Tab <Status>

- Pressure characteristic of the last 15 minutes, ~2 s/point
- Stop / start or refreshing the measurement value
- Measurement point with time / pressure reading
- Zooming in graph (pressure or time axis)

☞ For scientific measurements, the status graph data is of less value. In those cases it is advisable, to use a digital interface or the high resolution analogue output.

Stop / start refreshing the measurement value
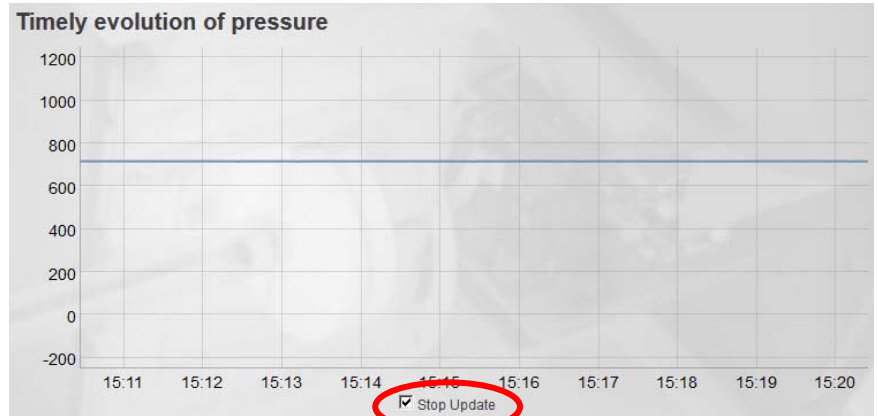
Checking the <Stop Update> box stops the data refresh. Any zoom will remain in effect. Unchecking the box will resume normal refresh. The graph is automatically updated to display all data.
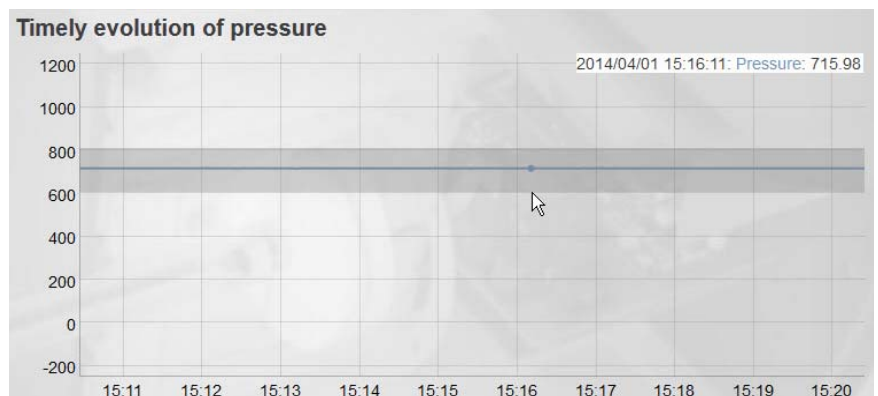
Measurement point with time / pressure reading

Move the mouse on the measurement line, the time and pressure values at this point (indicated by a circle) are shown.
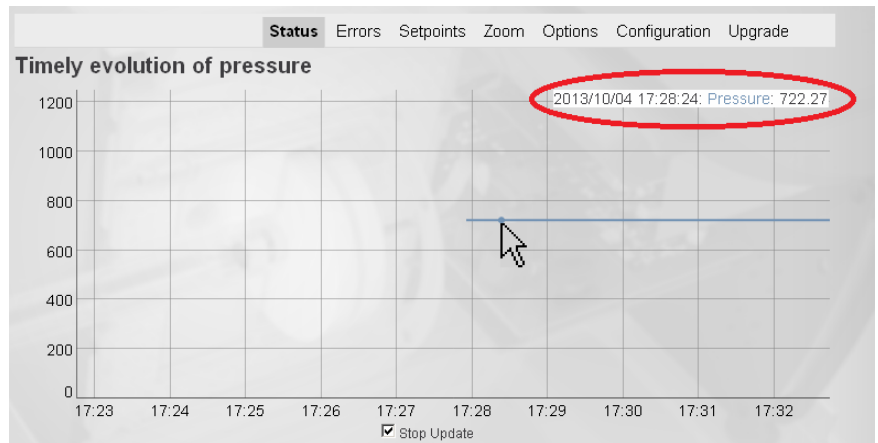

Zooming in the graph vertically (pressure)

Click and hold with the left mouse button in the selected pressure range and drag the mouse vertically (on pressure axes) to the desired size.

The vertical zoom can be reset by clicking <Reset vertical zoom>.

Zooming in the graph horizontally (time)

Click and hold with the left mouse button in the selected time range and drag the mouse horizontally (on time axes) to the desired size.
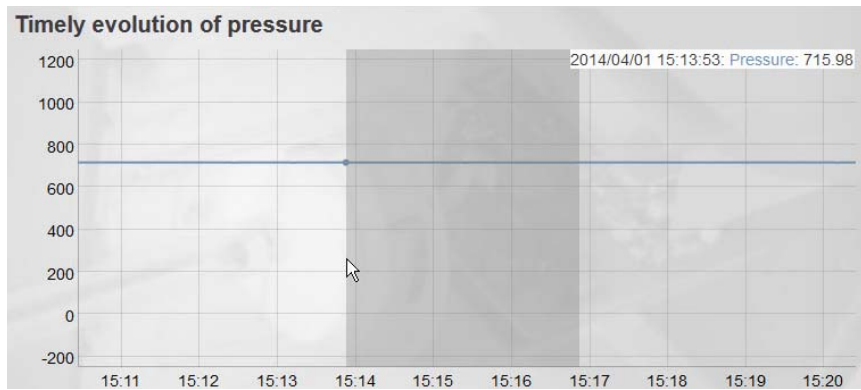
The horizontal zoom can be reset by double-clicking into the graph.
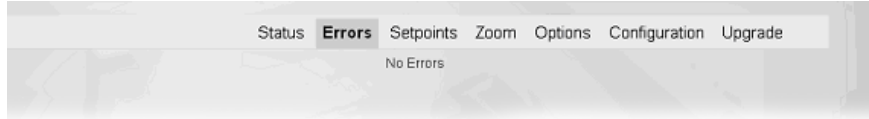
Saving pressure trend

The pressure trend of the displayed data can be saved as a CSV file by clicking on the <Pressure Trend (csv)> button. A dialog box opens and the file can be saved locally.

1.3 Tab <Errors>

- Displaying errors
- Possible causes and correction measures

If an error occurs, <Errors> changes to red color.

1.4 Tab <Setpoints>

- Setting the setpoint functions (hysteresis: 1% of the threshold value, (Setting the values takes approx. 3 s)

1.5 Tab <Zoom>

- Zoom of high resolution analog output. An arbitrary range can be zoomed.

The lower limit of the selected pressure range is displayed at the analog output with 0.0 V, the upper limit with 10.0 V. The values between these limits are automatically scaled.

First enter the high mark, then the low mark before setting the zoom to *On*.

Activating/deactivating the zoom by selecting *On* or *Off.* Setting the values takes approx. 3 s.
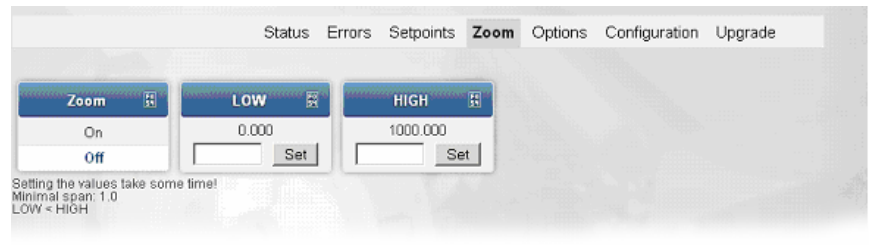
1.6 Tab <Options>

This tab offers a wide range of configuration possibilities for the signal flow inside the Cube.

- Change conversion time capacity/voltage
- Switch temperature compensation on/off
- Switch pressure compensation on/off
- Switch ATM compensation on/off
- Change filter settings
- Change output signal of Temp/ATM
- Change pressure unit
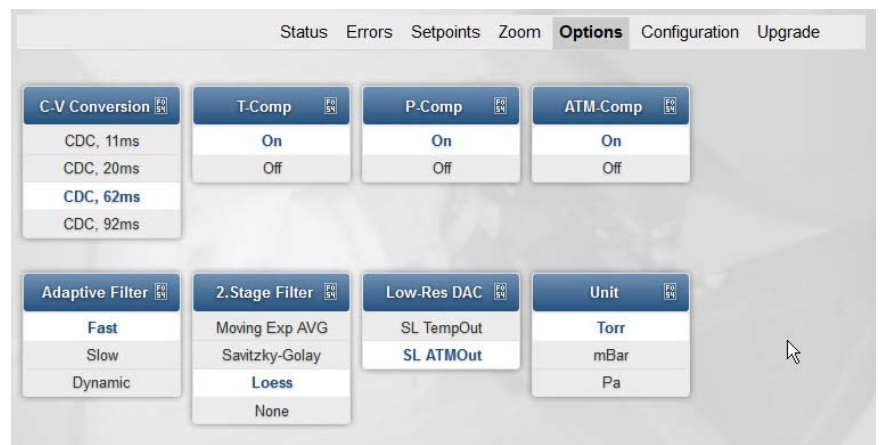
☞ Standard settings for the Options page are:
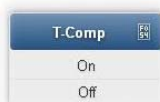- C-V Conversion: 62 ms
- T-Comp: on
- P-Comp: on
- ATM-Comp: on
- Adaptive Filter: Slow
- 2. Stage Filter: None
- Low-Res DAC: SL TempOut
- Unit: Torr

Conversion time capacity / voltage

C-V Conversion

CDC, 11ms
CDC, 20ms
CDC, 62ms
CDC, 92ms

Higher value: Less noise, but slower reaction to pressure steps.

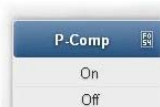**Temperature compensation**

T-Comp

On
Off

Activate/deactivate compensation for temperature fluctuations by selecting On or Off.

☞ Switching this option off will deactivate the temperature compensation of Cube. The user has to take care for the correct treatment of the pressure data.
In an unstable environment, it is recommended to leave this option at On.
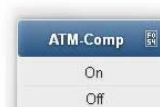
Pressure compensation

P-Comp

On
Off

Activate/deactivate compensation for pressure fluctuations by selecting *On* or *Off*.

☞ Switching this option off will deactivate the linearization of Cube. The output pressure will resemble a hyperbolic function due to the nature of the capacitive measurement. The user has to take care for the correct treatment of the pressure data.

ATM Compensation

ATM-Comp

On
Off

Activate/deactivate compensation for atmospheric pressure fluctuations by selecting *On* or *Off*.

☞ Switching this option off will deactivate the atmospheric pressure compensation of Cube. The user has to take care for the correct treatment of the pressure data.
In an unstable environment, it is recommended to leave this option at *On*.

Adaptive Filter

Adaptive Filter

Fast
Slow
Dynamic

Fast: The Cube CDGsci responds more quickly to changes in pressure. As a result, noise will be larger.

Slow: The Cube CDGsci responds slower to changes in pressure. As a result, noise will be smaller.

Dynamic: Depending on the measuring conditions, the Cube CDGsci selects dynamically <Fast> or <Slow>.

Second Stage Filter

2.Stage Filter
Moving Exp AVG
Savitzky-Golay
Loess
None

In situation of very long static measurements, the data can be further smoothed by applying a secondary stage filter. If a Second Stage Filter is applied, the CDC and the Adaptive Filter settings are adapted accordingly.

Moving Exp AVG: Exponential moving average.
Savitzky-Golay: Symmetrical filter of 4th order with $n_L = n_R = 5$.
Loess: Locally weighted scattered data smoothing.

☞   When a Second Stage Filter is applied, the settings for the C-V Conversion and Adaptive Filter are fixed to 62ms and *Slow* respectively. They cannot be changed as long as a Second Stage Filter is active.

Resolution

Low-Res DAC
SL TempOut
SL ATMOut

This setting changes the signal output at <TEMP / ATM>: Either current ATM pressure or temperature of the gauge can be output.

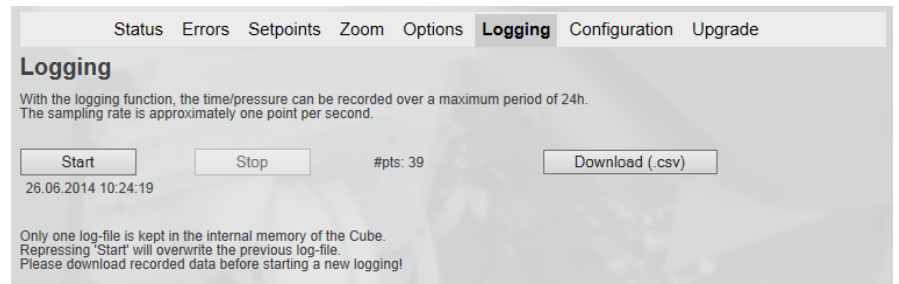For scaling of temperature and pressure see operating manual (→ 📖 [1]).

Pressure unit

Unit
Torr
mBar
Pa

Changes pressure unit of the measurement values, threshold values, etc.

1.7 Tab <Logging>

- Continuous logging of data up to 24h, 1s/point
- Download of data possible, even during logging.

| Status | Errors | Setpoints | Zoom | Options | **Logging** | Configuration | Upgrade |

Logging

With the logging function, the time/pressure can be recorded over a maximum period of 24h. The sampling rate is approximately one point per second.

| Start | | Stop | #pts: 39 | | Download (.csv) |

26.06.2014 10:24:19

Only one log-file is kept in the internal memory of the Cube.
Repressing 'Start' will overwrite the previous log-file.
Please download recorded data before starting a new logging!

<Start> starts the logging, <Stop> ends the logging. The start time/date and the running number of measurement points are displayed. <Download (.csv)> opens a download dialogue.

1.8 Tab <Configuration>

- Settings for LAN and WLAN
- Backup and restore of user settings
- Factory Reset
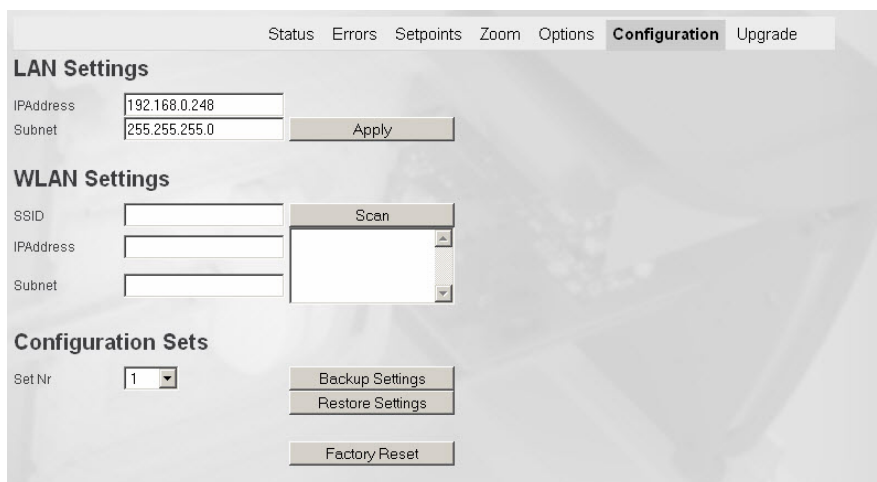
LAN Settings

The IP address / Subnet of the LAN interface can be changed. Clicking <Apply> will open a confirmation window. The gauge will reboot after clicking on <OK>.

WLAN Settings

Cube can be connected to a wireless access point using DHCP. Ad hoc connections are not possible. With <Scan>, Cube searches for accessible networks. Selecting the proper network and inserting the password will connect to this network after clicking <Connect>.
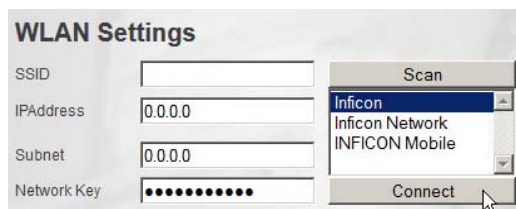
Connecting to the access point may take up to 20s. Thereafter, the IP address and Subnet mask are displayed.

Backup / restore settings

User settings can be backed up and restored using the <Backup Settings> and <Restore Settings> buttons. Up to 10 sets can be stored and differ by number.

Reset Factory

Clicking on this button will reload the Cube gauge factory settings. All settings, configurations and options set by the user will be deleted.

1.9 Tab <Upgrade>

- Firmware upgrade

The <Browse…> button opens a file dialog in which the upgrade file, e.g. "SilverlineFactory-Vxxxxx.zip" can be selected. The new firmware is transmitted to the gauge by clicking <Submit>. An automatic reset of the gauge is performed, if the upgrade was successfully. Updating the firmware takes approx. 3min.

The new firmware version is displayed on the left side in the information section under the Cube image.

2   Literature

[1]   www.inficon.com
Operating Manual
Cube CDGsci
tina88d1 (German)
tina88e1 (English)
INFICON AG, LI–9496 Balzers, Liechtenstein

Notes