

Setup Computer Environment for Festo Edcon

A step by step guide to set up computer environment for Python and Festo edcon python library to communicate and control a CMMT-...-MP drive.
Edcon stands for “**E**lectric **D**rive **C**ontrol”

CMMT-AS
CMMT-ST
Edcon

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1 Software used

Name	Compatible Software Version
Python	v3.10 and above
Visual Studio Code	Any version
pip	Follow instruction in command prompt
festo-edcon	Latest version on PyPi

Table 1.1: Software used



Information

Visual Studio Code is a common programming environment for python. However, it is not the only one. User can choose any programming environment they prefer. In this tutorial, we use Visual Studio Code as an example.

2 Introduction

This is an application note to guide the first setup of Windows computer environment for Festo edcon python library. It can be used to communicate with and control Festo CMMT-...-MP drive via Modbus or Ethernet/IP.

Edcon stands for “**E**lectric **D**rive **C**ontrol”. It is written by Festo and reposited in the online repository of public python packages, Python Package Index (PyPI) and can be downloaded via package manager, pip. The project is uploaded and maintained in GitLab and mirrored in GitHub. There you can find explanations and examples of the library.

3 Useful links

Subject	URL
GitLab repository	https://gitlab.com/festo-research/electric-automation/festo-edcon/-/tree/main
Documentation	https://festo-research.gitlab.io/electric-automation/festo-edcon/index.html
PyPI project	https://pypi.org/project/festo-edcon/
Feedback and bug report	https://gitlab.com/festo-research/electric-automation/festo-edcon/-/issues

Table 3-1: Useful links

4 Setup Computer Environment

Most of the time, setting up of computer environment for the library is most time consuming. Although it only needs to be done once. Thus, this step by step guide intends to help the users who are not familiar with Python programming to prepare the environment for the library.

**Note**

Internet connection is necessary to download all the packages!

Follow the steps below to set up the computer.

4.1 Install Visual Studio Code

Download and install Visual Studio Code from the official website. There is also a portable version, for users who do not want to install the software.

Link: <https://code.visualstudio.com/#alt-downloads>

4.2 Install Python

Download and install Python from the official website.

Link: <https://www.python.org/downloads/>

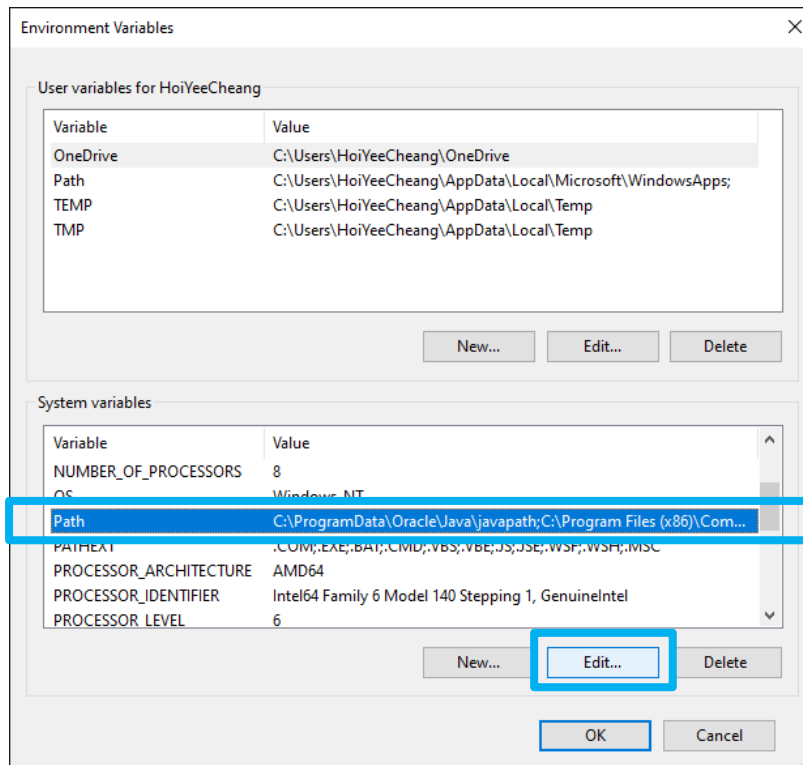
If python is installed, check whether the path to python is recognized by the system.

1. Open command prompt window.
2. Prompt `python -V`.
3. If the system reply with Python with version number. The system recognize its path and its ready to use.

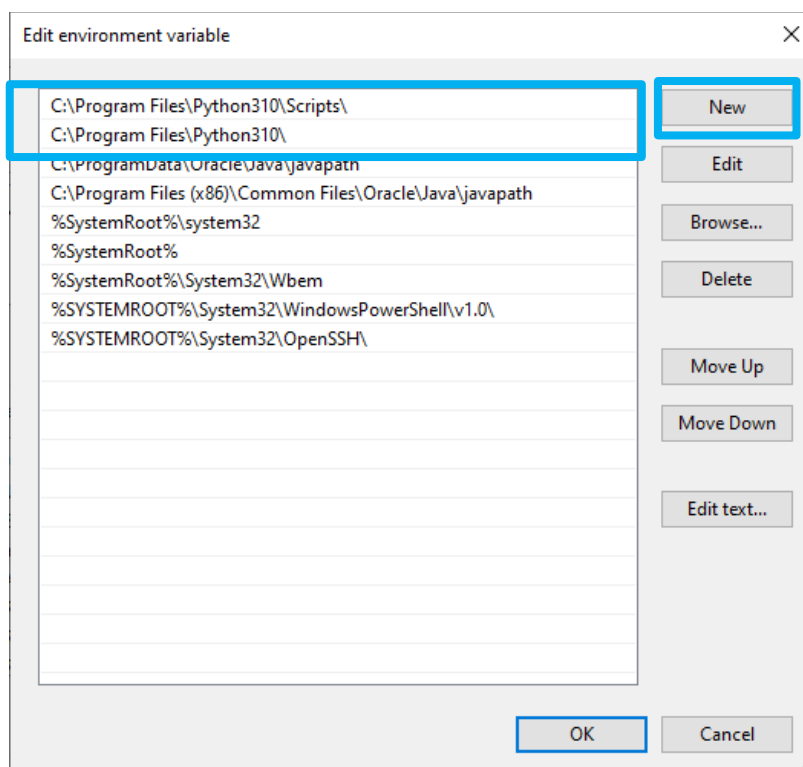
```
Command Prompt
C:\Users\hcg>python -V
Python 3.10.7
```

If the system does not reply with Python and version number, its path needs to be added to the system variable.

1. Open 'Environment Variables' window.
2. Edit System variables' path.



3. Click 'New' to add following two paths:
 - a. < PATH TO PYTHON >
Example: C:\Program Files\Python310
 - b. < PATH TO PYTHON >\Scripts
Example: C:\Program Files\Python310\Scripts

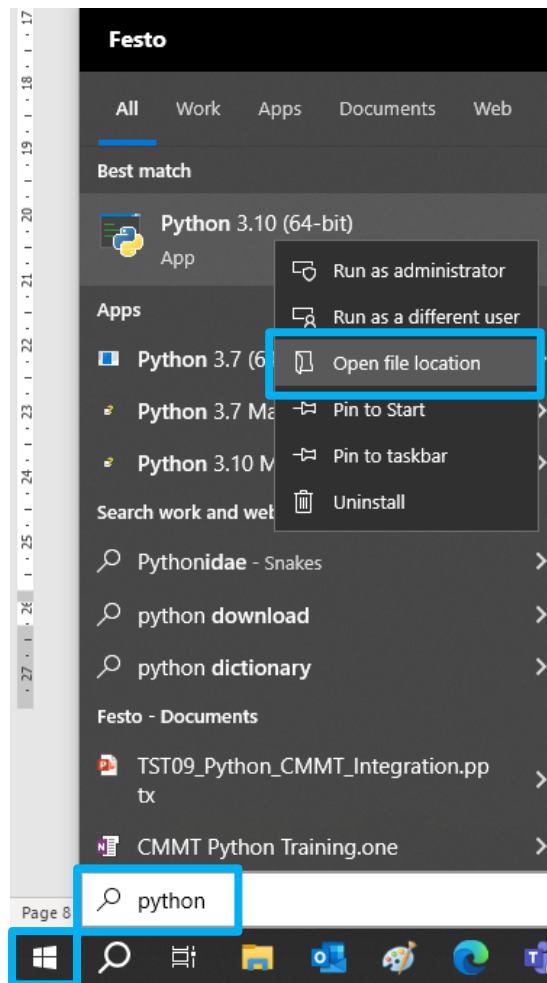




Informationen

If the path to python is unknown, do following steps to find out.

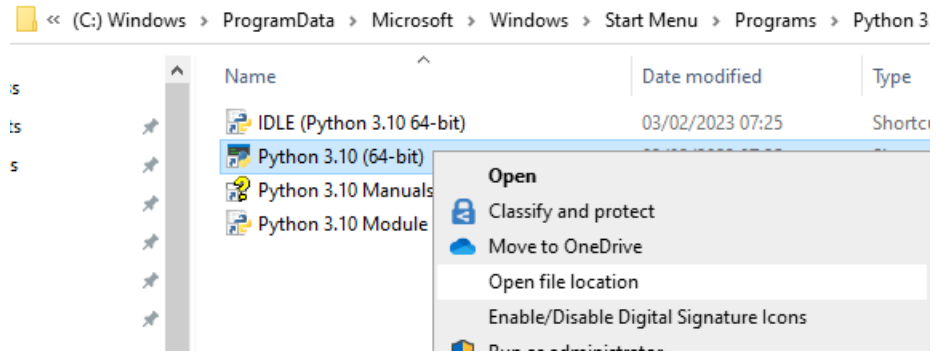
1. Go to menu, enter 'python'.
2. Right click on the application, select 'Open file location'.



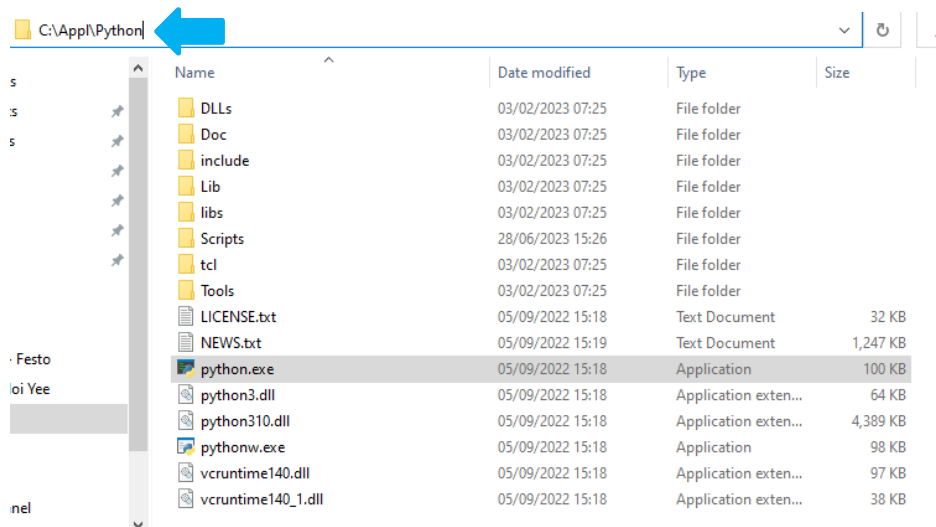
3. If the file is not a shortcut, it's the path.

If the file is a shortcut, do following:

1. Right click on the shortcut, select 'Open file location'.



2. The path is shown.



4.3 Install Python Package Manager pip

Check if pip is installed.

1. Open command prompt window.
2. Prompt `pip -V`.
3. If the system replied with pip and its version number. Its installed.

```

Command Prompt
C:\Users\hcg>pip -V
pip 23.1.2 from C:\App1\Python\lib\site-packages\pip (python 3.10)

```

If the system does not reply with pip and version number, install pip.

1. Download pip with following prompt `curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py`.

```

Command Prompt
C:\Users\hcg>curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 2518k  100 2518k    0     0  2643k      0  --:--:-- --:--:-- --:--:-- 2653k

```

2. Install pip with following prompt, `python get-pip.py`.

```

Command Prompt
C:\Users\hcg>python get-pip.py
Collecting pip
  Using cached pip-23.1.2-py3-none-any.whl (2.1 MB)
Collecting wheel
  Downloading wheel-0.40.0-py3-none-any.whl (64 kB)
----- 64.5/64.5 kB 3.4 MB/s eta 0:00:00
Installing collected packages: wheel, pip
  Attempting uninstall: pip
    Found existing installation: pip 23.1.2
    Uninstalling pip-23.1.2:
      Successfully uninstalled pip-23.1.2
Successfully installed pip-23.1.2 wheel-0.40.0

```

3. Keyword “Successfully installed pip < version > wheel < version >” indicates successful installation.

4.4 Install Festo-edcon

After pip is installed, we are ready to install festo-edcon library.

1. Open command terminal, prompt `pip install festo-edcon` .

```

Command Prompt
C:\Users\hcg>pip install festo-edcon
Collecting festo-edcon
  Downloading festo_edcon-0.10.3-py3-none-any.whl (92 kB)
----- 92.8/92.8 kB 2.7 MB/s eta 0:00:00
Requirement already satisfied: pymodbus<3.0.0 in c:\appl\python\lib\site-packages (from festo-edcon) (2.7.0)
Requirement already satisfied: ethernetip in c:\appl\python\lib\site-packages (from festo-edcon) (0.1.2)
Requirement already satisfied: rich in c:\appl\python\lib\site-packages (from festo-edcon) (13.3.1)
Requirement already satisfied: six>=1.15.0 in c:\appl\python\lib\site-packages (from festo-edcon) (1.16.0)
Requirement already satisfied: pyserial>=3.4 in c:\appl\python\lib\site-packages (from festo-edcon) (3.5)
Requirement already satisfied: dpkt in c:\appl\python\lib\site-packages (from ethernetip->ethernetip) (2.1.0)
Requirement already satisfied: markdown-it-py<3.0.0,>=2.1.0 in c:\appl\python\lib\site-packages (from rich) (2.1.0)
Requirement already satisfied: pygments<3.0.0,>=2.14.0 in c:\appl\python\lib\site-packages (from rich) (2.14.0)
Requirement already satisfied: mdurl~=0.1 in c:\appl\python\lib\site-packages (from markdown-it-py->mdurl) (0.1.2)
Installing collected packages: festo-edcon
Successfully installed festo-edcon-0.10.3

```

2. Keyword “Successfully installed festo-edcon < version >” indicates successful installation.

To check the installed version, prompt `pip show festo-edcon` .

```

Command Prompt
C:\Users\hcg>pip show festo-edcon
Name: festo-edcon
Version: 0.10.3
Summary: Library to issue profidrive tasks for Festo specific electrical drives
Home-page: https://gitlab.com/festo-research/electric-automation/festo-edcon
Author: Elias Rosch
Author-email: elias.rosch@festo.com
License: MIT
Location: c:\appl\python\lib\site-packages
Requires: ethernetip, pymodbus, rich
Required-by:

```



Information

If following occurred:

1. Python or pip is blocked by computer's administrator.
2. Path to python cannot be added to environment variables because of user right.

...use following prompt `< PATH TO PYTHON >\python.exe -m pip install festo-edcon`.

Example: `C:\Appl\Python\python.exe -m pip install festo-edcon`.

```

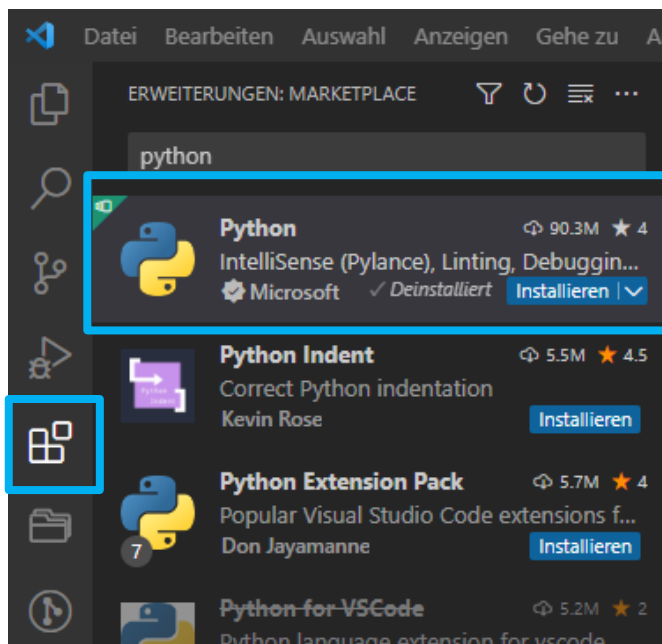
Command Prompt

C:\Users\hcg>C:\Appl\Python\python.exe -m pip install festo-edcon
Collecting festo-edcon
  Using cached festo_edcon-0.10.3-py3-none-any.whl (92 kB)
Requirement already satisfied: pymodbus<3.0.0 in c:\appl\python\lib\site-packages (2.1.0)
Requirement already satisfied: ethernetip in c:\appl\python\lib\site-packages (0.1.2)
Requirement already satisfied: rich in c:\appl\python\lib\site-packages (12.3.4)
Requirement already satisfied: six>=1.15.0 in c:\appl\python\lib\site-packages (1.16.0)
Requirement already satisfied: pyserial>=3.4 in c:\appl\python\lib\site-packages (3.5)
Requirement already satisfied: dpkt in c:\appl\python\lib\site-packages (3.1.1)
Requirement already satisfied: markdown-it-py<3.0.0,>=2.1.0 in c:\appl\python\lib\site-packages (2.1.0)
Requirement already satisfied: pygments<3.0.0,>=2.14.0 in c:\appl\python\lib\site-packages (2.14.0)
Requirement already satisfied: mdurl~=0.1 in c:\appl\python\lib\site-packages (0.1.2)
Installing collected packages: festo-edcon
Successfully installed festo-edcon-0.10.3
  
```

4.5 Install Python Extension in VS Code


Install python extension for support of the language in VS Code.

1. Open VS Code.
2. Go to extension page.
3. Search for keyword 'python'.
4. Install Python extension from Microsoft.



5 Update Festo-edcon

The package is updated regularly to PyPI. It can be updated via pip in command terminal with prompt `pip install festo-edcon --upgrade` .

 Command Prompt

```
C:\Users\hcg>pip install festo-edcon --upgrade_
```

s