



SIEMENS
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NET



Cube-Elec 300

Cube-Elec 300 is **compact and modular**, it allows to implement a complete chain of automatic control. The cube consists of an HMI, a Programmable Logic Controller and a drive for the control of an asynchronous motor (or brushless motor)

Pedagogical purposes



KTP 700 HMI side

The HMI is a KTP 700

Several characteristics:

- 7" colour graphic terminal: KTP700

CSM 1277 Switch



- ✓ Ethernet 10/100 Mbit/s non manageable
- ✓ 4 x RJ45 ports
- ✓ LED for diagnostic



KTP 700

USB connector

Drive side

The drive (variator) is a SIMATICS G120C, 0.55 kW with graphic terminal included

Without filter

Fault light

Pushbutton for Ack_fault

Potentiometer for speed control

Alarm light

Switch for the choice of the Bus

Profinet

Switch for the selection of the mode

Encoder

Speed image 0-10V on BNC socket

Current image: 0-10V on BNC socket

Power supply for AC motor

Braking resistance

G120 drive

Earth socket

Motor Thermal protection socket



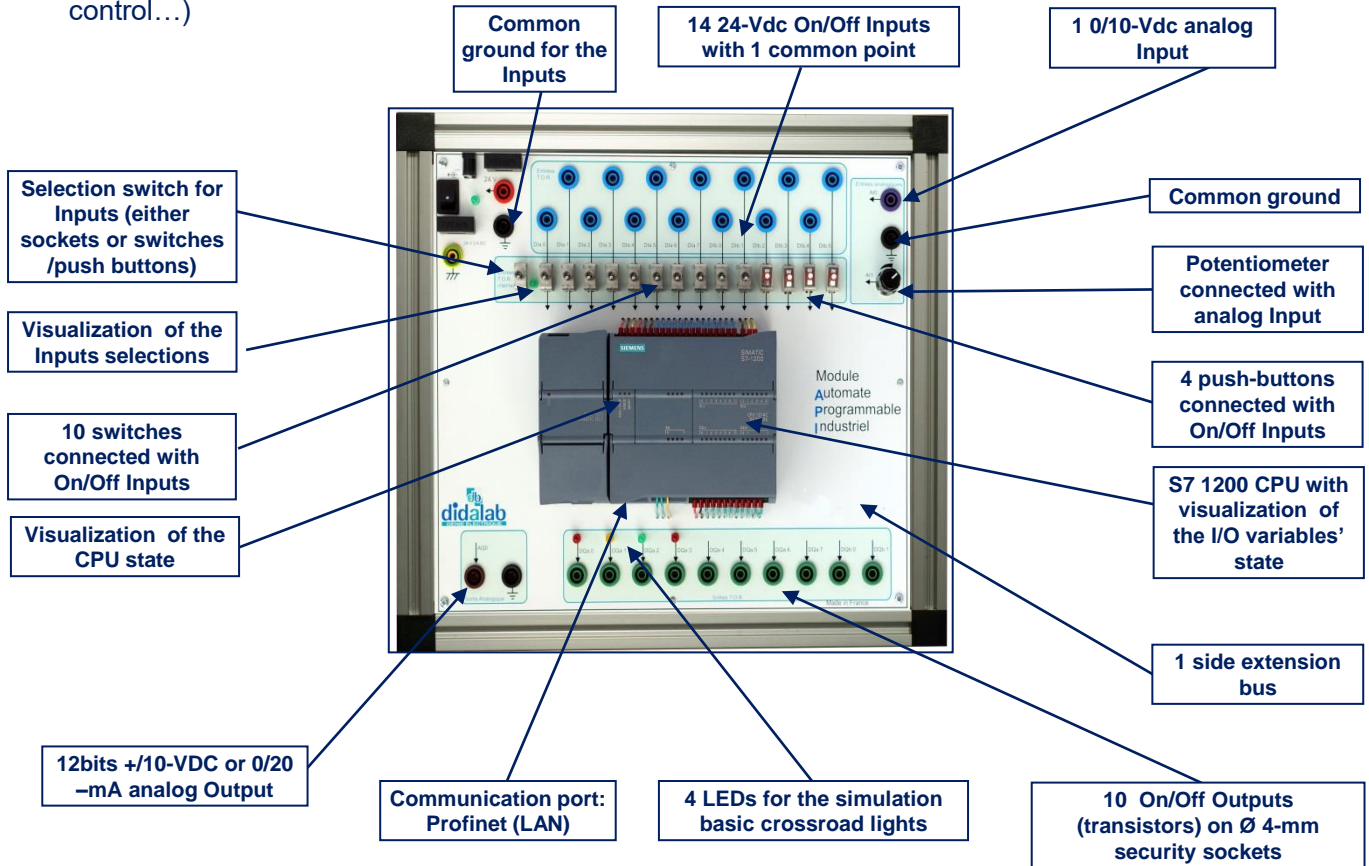
S7 1200 PLC side

The PLC is a SIMATIC S7 1200.

Some characteristics:

- Working memory: 50 ko, 6 fast counters and 2 pulse Outputs included,
- Time of cycle : 1ms for 1000 instructions,
- PROFINET port for programming.

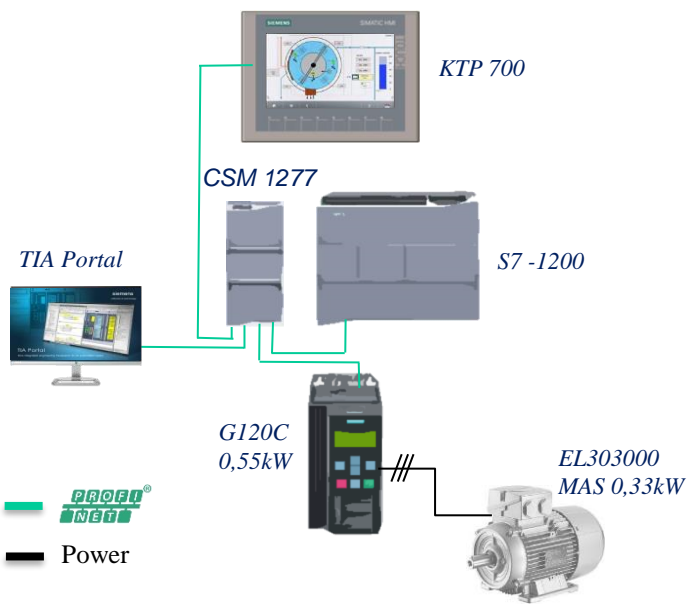
A simulator for Inputs variables (10 switches and 4 push-buttons, colour LEDs on 4 Outputs) allows the use of the product with complete autonomy, simulation of basic crossroad lights, chase, access control...)



Example of configuration

Block diagram

Setting



Related products:

Bench loads:



EL 31_ : Motor bench with magnetic brake, 300 W

- Instrumented and programmable resistive load : Magnetic brake
- Several configurations are available (DC motor with permanent excitation, DC motor with separate excitation, asynchronous 3-ph motor, brushless motor)

EL 32_ : Motor bench with active load, 300 W

- Instrumented and programmable resistive and driving load : brushless motor controlled by Siemens drive
 - Several configurations are available (DC motor with permanent excitation, DC motor with separate excitation, asynchronous 3-ph motor, brushless motor)
- Suggested motors**



Example:



Standard configurations:

| Cube-Elec300 | | |
|---------------------------|--|-----|
| References | Description | Qty |
| EST120G | Cube-Elec 300, with G120C drive for 300-W Asynchronous motor | |
| EST100000 | Cube, made of aluminium frame, with 1 side for 230 VAC power supply and the switch for power ON. | 1 |
| EST101000 | KTP 700 HMI side, with 4 RJ45 crosses and USB socket | 1 |
| ESD003000 + ESD000010 | S7-1200 PLC side, with TIA Portal program with Ø2-mm safety sockets | 1 |
| EST120000 | G120C drive side, for 0,55 kW asynchronous motor (without filter) | 1 |
| <i>Option Non Include</i> | | |
| EL303000 | 3-ph asynchronous squirrel cage motor, 240/400V, 370W, with setting accessories | |

| Cube-Elec300 | | |
|--------------------------|--|-----|
| References | Description | Qty |
| EST110V | Cube-Elec 300, with V90 drive for Brushless motor | |
| EST100000 | Cube, made of aluminium frame, with 1 side for 230 VAC power supply and the switch for power ON. | 1 |
| EST101000 | KTP 700 HMI side, with 4 RJ45 crosses and USB socket | 1 |
| ESD003000 + ESD000010 | S7-1200 PLC side, with TIA Portal program with Ø2-mm safety sockets | 1 |
| EST110000 | V90 drive side for 0.2 kW Brushless motor, with Brushless motor embedded in the cube | 1 |

We can now offer cubes for the following ranges:

- SELV 100 W and 300 W (for DC and/or Brushless motors)
- LV 300 W and 1500 W (for Brushless and AC 3-ph motors);

Please ask us for any configuration.

Maj du : 25/04/2024

