

Linux-based Automation Controller

UFK040404

Introduction

This (DIN-rail mountable 5 modules wide) programmable controller can be interfaced with a variety of sensors and actuators. The device has outstanding performance, versatility and reliability.

The device is modular, consisting of a control computer board (Khadax VIM1) and a special Modbus-compatible I/O-board (UF040404). The boards are connected via UART cable, providing also 5 Vpower supply to the computer board.

The operating system of the controller's internal computer is Ubuntu Linux, which can be freely managed, upgraded and/or changed by the admin user. The control computer board with a 4-core ARM-processor has 2GB of RAM and uses 8 GB of eMMC non-volatile memory.

There are no restrictions on programming languages or application software.



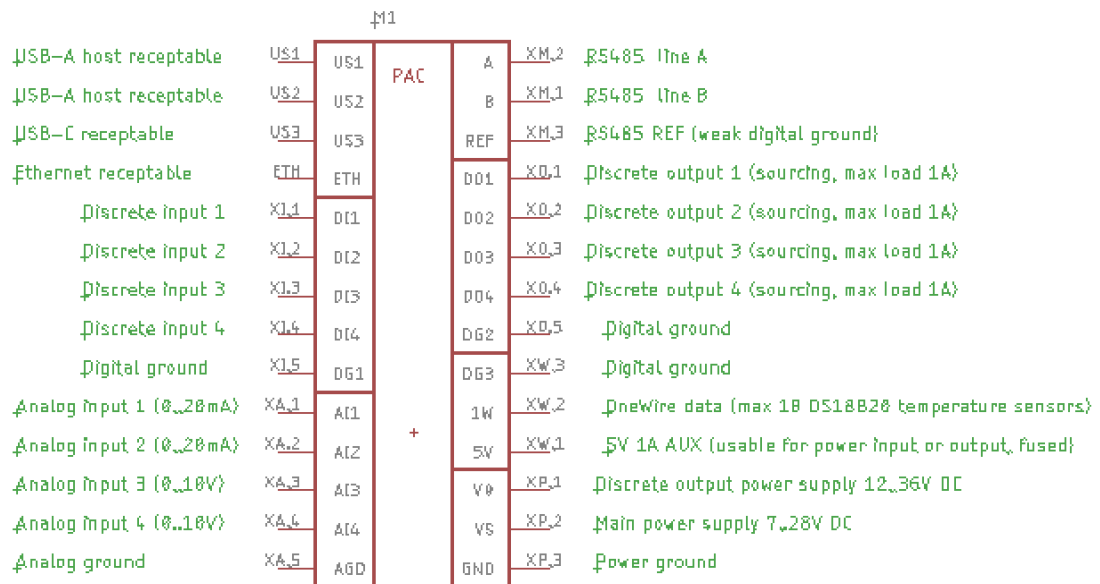
On the image on the left, the input-output (I/O) signals of the controller are listed next to the corresponding pins of the pluggable terminal blocks (with 3.5mm pitch spacing).

See also the suggested representation of the controller in the electrical wiring diagrams on the next page (HDMI output not shown).

The controller conforms to the following EU standards:

- EN 55022 criterion B,
- EN 61000-4-2,
- EN 61000-4-3,
- EN 61000-4-4,
- EN 61000-4-5,
- EN 61000-4-6.





Electrical wiring diagram of the controller

Technical data

Mounting: 35 mm DIN-rail, width 5 modules (88 mm)

Operational environment:

Temperature from -20 to +60 °C.

Humidity up to 95% (non-condensing).

Tested and approved for both home/office and industrial use.

Power supply:

Main supply voltage: 7..28 VDC 2.2 W.

Output supply voltage: 7..36 VDC, power depends on load.

Main processor:

S905x ARM, 4 core, 1.5 GHz

RAM: 2 GB, Flash: 8 GB, Op-system installed: Ubuntu Linux

Video: HDMI

USB-interfaces: 2 x USB-A + 1 x USB-C

Internet connectivity: WiFi (802.11b/n/g), wired LAN (10/100BaseT) or GSM dongle

I/O/processor: PIC18F46K80

Discrete inputs (DI): 4 channels, voltage (max 27V) or pulled-down signal

Every discrete input is equipped with a 32-bit counter.

DI channels are also usable for interfacing with up to two Wiegand-readers.

Analog inputs (AI): 2 channels 0..20mA and 2 channels 0..10V; all with 12 bit ADC.

Discrete outputs (DO): 4, sourcing 1 A max per channel, protected.

Output voltage depends on output supply voltage.

Output on every channel is available at steady level or as pulses with defined length.

Pulse output can be in monovibrator or multivibrator mode (with defined period).

Temperature sensor support: Dallas onewire, for up to 18 sensors DS18B20.

I/O extensibility: via RS485 / ModbusRTU or Ethernet / ModbusTCP.

RS485 communication parameters 9k6..115k2, parity None or Even.

For detailed information about the I/O-capabilities and Modbus-registers in use, check the manual for the I/O-module UF040404.