



100% EMKO Hardware + HMI Software

proop

Professional Operator Panel

10" Operator Panel - Proop10

7" Operator Panel - Proop7

Panel Dimensions & Screen Resolutions



10" Operator Panel - Proop10

10.1" Wide Touch Screen TFT LCD
 1024 x 600 resolution (16 million colors)
 Resistive touch screen
 Led LCD lighting
 Backlight lifetime min. 50000 hours at 25°C
 Luminance (cd/m2) 270

7" Operator Panel - Proop7

7" Wide Touch Screen TFT LCD
 800 x 480 resolution (260,000 colors)
 Resistive touch screen
 Led LCD lighting
 Backlight lifetime min. 50000 hours at 25°C
 Luminance (cd/m2) 300

Hardware, HMI Software



Datalogger and
 Step Control Features
 Recipe Definition
 Multi Language Editör



ARM Cortex-A Series



512 MB DDR3 SDRAM



4 Gb eMMC

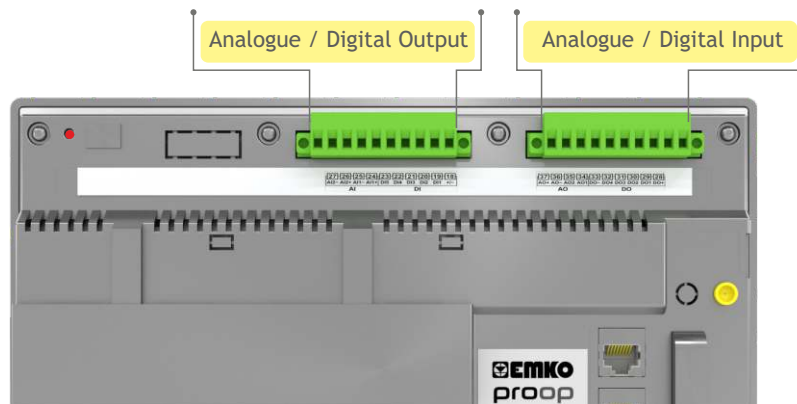
Internal Analogue / Digital Input-Output Port Support

7" Operator Panel - Proop7

- 4 Digital Inputs
- 4 Digital Outputs

10" Operator Panel - Proop10

- 5 Digital Inputs
- 4 Digital Outputs
- 2 x 4...20 mA Analogue inputs
- Optional Analogue input :
0...10 Vdc or 0...50 mV or PT-100
- Optional Analogue output :
0...10 Vdc



Online / Offline Simulation Mode



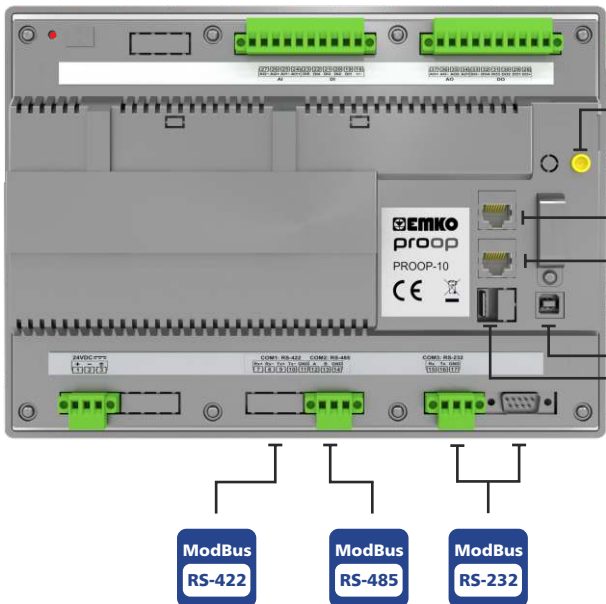
Online Simulation:

The designed screen display, macro commands and PLC communication can be tested on the PC without being loaded on the Proop device.

Offline Simulation:

Pre-screening of the designed screen can be done without loading on the compilation and Proop device.

Communication Features



The diagram shows the back of the PROOP-10 device with various communication ports and their corresponding protocols. The ports include GPRS, Wi-Fi, Ethernet, and USB. Below the device, three ModBus protocols are listed: RS-422, RS-485, and RS-232.

Internal Wi-Fi

- IEEE 802.11 b/g/n standard
- 2.4 GHz frequency band
- Bitrate: max 72 Mbps
- WEP, WPA and WPA2 security protocols
- Soft-AP (access point) support
- Internal integrated antenna
- Certificates:
 - EN 301 489 (EMC immunity)
 - EN 300 328 (Radiated emissions)
 - EN 60950 (Safety standards)

Communication Protocols

MODBUS	Modbus-RTU
MODBUS	Modbus-ASCII
MODBUS	Modbus TCP/IP
MODBUS	Modbus-ASCII(Slave)
MODBUS	Modbus-RTU(Slave)
MODBUS	Modbus TCP/IP(Slave)
SIEMENS	S7-300(ISOTCP)
SIEMENS	S7-400(ISOTCP)
SIEMENS	S7-1200(ISOTCP)
SIEMENS	S7-1500(ISOTCP)
BACNET	MS/TP
BACNET	IP

Project Download and Upload Via USB and Ethernet



- USB Input (With USB cable connection) : Project Upload
- USB Host Input (With Flash memory) : Upload
- USB Host Input for Keypad, Mouse Connection

Project download and upload via Ethernet

High speed data transfer via USB 2.0 and Ethernet port enables fast project loading or downloading. User can create program download password

Proop I/O (Input / Output Expansion Module)

Analogue Inputs

- 5 x Pt-100 (-200...650°C)
- 5 x 0/4...20 mAdc
- 5 x 0...10 Vdc
- 5 x 0...50 mV
- * Must be specified in order

Digital Inputs

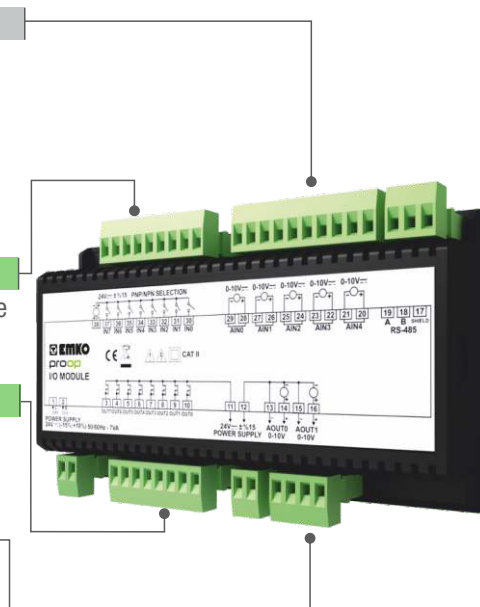
8 x Digital PNP/NPN selectable

Digital Outputs

8 x Digital (Transistor +V)

Analogue Outputs

- 2 x 0...10 Vdc
- 2 x 0/4...20 mAdc
- * Must be specified in order



Proop-I/O	2	2	1	3	E	F
Module Supply Voltage						
24Vdc/Vac (Insulated)	2					
Communication						
RS-485 (Insulated)	2					
Digital Inputs						
8 x Digital Inputs			1			
Digital Outputs						
8 x 1A Transistor (+V)				3		
E Analogue Inputs						
5 x Pt-100 (-200...650°C)					1	
5 x 0/4...20mAdc					2	
5 x 0...10Vdc					3	
5 x 0...50mV					4	
F Analogue Outputs						
2 x 0/4...20mAdc						1
2 x 0...10Vdc						2

Regional Formatting Format Support



Time, date and number formats can be set for local territories.

FreeType and Windows® Font Support

User can create his own font library.

Microsoft Windows Font File Format (Windows FNT),
TrueType (TTF), PostScript Type1 (PFA/PFB), Bitmap Distribution Format (BDF),
CID-keyed Type1, Compact Font Format (CFF), OpenType fonts,
SFNT-based bitmap fonts, Portable Compiled Format (PCF),
Portable Font Resource (PFR), Type 42 (Limited support) supports font types.



Graphics / Visual Features



User can create his own picture library.

Over 100 vector-based prefabricated elements.

Vector based user defined image (SVG) support.

BMP, GIF, JPG, JPEG, PNG, PBM, PGM, PPM, TIFF, XBM, XPM format picture support.

Enhanced visual drawing infrastructure ; antialiasing, alphablending support.

User Friendly EMKO Macro

Macro:

It provides to able to control of processing collected data and internal input-output

ERP/MES production monitoring applications adaptation, macro and SQL client support for use in these applications.

```
for var1 = 0 to 100 do  
var2 = var2 + 1;  
endfor;  
for var1 = 50 downto 0 do  
var2 = var2 - 1;  
endfor;
```

```
1 func main()  
2 $0 = %IW0 / 10.0;  
3 if $0 < $M0  
4 %QX0.0 = 1;  
5 else  
6 %QX0.0 = 0;  
7 endif;  
8 endf  
9 endp
```



	proop-7L	proop-7Lwi	proop-7LE	proop-7LEwi	proop-7C	proop-7Cwi	proop-7CE	proop-7CE2	proop-7CEwi	proop-7CE2wi
Ethernet		X				X		10/100Mbps		
Second Ethernet Input				10/100Mbps						
Wi-Fi (IEEE 802.11 b/g/n)	X		X	Wi-Fi	X	Wi-Fi	X	10/100Mbps	X	10/100Mbps
Digital Inputs		Wi-Fi								Wi-Fi
Digital Outputs		X					4x Digital Input			
Analogue Inputs		X					4x Digital Output (Transistor)			
Optional Analogue Inputs					X					
Analog Output					X					
Optional Analogue Outputs					X					
Display Type					7" TFT LCD					
Display Colors					260K colors					
Resolution					800 x 480					
Touch Method					Resistive Analogue					
LCD Backlight					Led					
Luminance (Cd/m2)					300					
Backlight life (hours)					min. 50000 hours at 25°C					
MCU					ARM Cortex-A Series					
Flash Memory					4GB eMMC					
Ram					512 MB DDR3 SDRAM					
Buzzer					>=85 dB					
USB Device					1x USB 2.0					
USB Host					1x USB 2.0					
Serial Com-1					RS-232 (DB-9 socket)					
Serial Com-2					RS-232 (Terminal)					
Serial Com-3					RS-485 (Terminal)					
Real Time Clock (RTC)					Build in					
Operating Voltage					18...30Vdc					
Power Consumption					6W					
RTC Battery / Life					Cr2032 button cell lithium battery, 3V / 5 years					
Protection Class					IP65					
Operating Temperature					0...50°C					
Storage Temperature					-20...60°C					
Operating Humidity					0...90 %RH (non condensed)					
Dimensions					206 x 152 x 50 mm					
Panel Cut-Out					196 x 142 mm					
Weight					700 g					

	proop-10L	proop-10L.wi	proop-10L.E	proop-10L.Ewi	proop-10C	proop-10C.wi	proop-10C.E	proop-10C.Ewi	proop-10P	proop-10P.wi	proop-10PE	proop-10PEwi	proop-10PEZ	proop-10PEZwi
Ethernet		X			X			10/100Mbps	X			10/100Mbps		
Second Ethernet Input					X			X						10/100Mbps
Wi-Fi (IEEE 802.11 b/g/n)	X	Wi-Fi	X	Wi-Fi	X	Wi-Fi	X	Wi-Fi	X	Wi-Fi	X	Wi-Fi	X	Wi-Fi
Digital Inputs		X												
Digital Outputs		X												
Analogue Inputs				X										
Optional Analogue Inputs				X										
Analogue Output				X										
Optional Analogue Outputs				X										
Display Type							10.1" TFT LCD							
Display Colors							16M colors							
Resolution							1024 x 600							
Touch Method							Resistive Analogue							
LCD Backlight							Led							
Luminance (Cd/m2)							270							
Backlight life (hours)							min. 50000 hours at 25°C							
MCU							ARM Cortex-A Series							
Flash Memory							4GB eMMC							
Ram							512 MB DDR3 SDRAM							
Buzzer							>=85 dB							
USB Device							1x USB 2.0							
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Serial Com-1							RS-232 (DB-9 socket)							
Serial Com-2							RS-232 (Terminal)							
Serial Com-3							RS-485 (Terminal)							
Real Time Clock (RTC)							Build in							
Operating Voltage							18...30Vdc							
Power Consumption							8W							
RTC Battery / Life							Cr2032 button cell lithium battery, 3V / 5 years							
Protection Class							IP65							
Operating Temperature							0...50°C							
Storage Temperature							-20...60°C							
Operating Humidity							0...90 %RH (non condensed)							
Dimensions							278 x 200 x 50 mm							
Panel Cut-Out							265 x 186 mm							
Weight							1300 g							

