



179649

XV-303-70-B00-A00-1C

Overview

Specifications

Resources



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Technical data

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Technical data ETIM 7.0

Approvals

Dimensions

## DELIVERY PROGRAM

Product range  
XV300 7"

Product range  
XV-303

Function  
HMI-PLC (integrated SPS function)

Description  
Control panel with PLC

Common features of the model series  
Ethernet interface  
CAN  
USB device  
USB Host  
RS232  
RS485  
Slot for SD card  
Operating System Windows Embedded Compact 7 pro  
Integrated Runtime visualization software license

Display - Type  
Color display, TFT, anti-glare

Touch-technology  
Capacitive multi-touch technology (PCT)

Number of colours  
16777216 (Color depth 24 bit)

Resolution  
WSVGA  
1024 x 600 Pixel

Portrait format  
yes

Screen diagonal  
7  
widescreen Inch

Model  
Plastic enclosure and glass panel in plastic frame

Operating system  
Windows Embedded Compact 7 Pro

PLC-licence  
PLC licence inclusive

License certificates for onboard interfaces  
Not required

built-in interfaces  
1 x Ethernet 10/100 Mbps  
1 x RS232  
1 x RS485  
1 x USB host 2.0  
1 x USB device  
1 x CANopen@easyNet

Front type  
Anti-glare tempered glass in plastic bezel

Utilization  
Flush mounting

Slots  
for SD card: 1

Memory card automation  
Optionally with SD card -> article no. 181638

Pluggable communication cards (optional)  
no

Touch sensor  
Multi-touch touch panel

Heat dissipation  
14.4 W

## TECHNICAL DATA

### Display

Display - Type  
Color display, TFT, anti-glare

Screen diagonal  
7  
widescreen Inch

Resolution  
WSVGA  
1024 x 600 Pixel

Visible screen area  
153.6 x 90.0 mm

Format  
16:9

Number of colours  
16777216 (Color depth 24 bit)

Contrast ratio (Normally)  
Normally 850:1

Brightness  
Normally 400 cd/m<sup>2</sup>

Back-lighting  
LED  
dimable via software

Service life of back-lighting  
Normally 50000 h

## Operation

Technology  
Projected Capacitive Touch (PCT)

Touch sensor  
Multi-touch touch panel

## System

Processor  
ARM Cortex-A9 800 MHz

Internal memory  
DRAM: 512 MB RAM  
Flash: 1GB SLC  
NVRAM: 128kB Retain

External memory  
SD card, Type: SDSC, SDHC

Cooling  
Fanless CPU and system cooling, natural  
convection-based passive cooling

Back-up of real-time clock  
Battery (service life)  
non-replaceable, BR2330 soldered in

Back-up of real-time clock  
Backup (time at zero voltage)  
Normally 10 years

## Engineering

Visualisation software  
GALILEO  
XSOF-CODESYS

PLC-Programming software  
XSOF-CODESYS-2  
XSOF-CODESYS-3

Target and web visualization  
Yes

PLC-licence  
PLC licence inclusive

Operating system  
Windows Embedded Compact 7 Pro

## Interfaces, communication

built-in interfaces  
1 x Ethernet 10/100 Mbps  
1 x RS232  
1 x RS485  
1 x USB host 2.0  
1 x USB device  
1 x CANopen@easyNet

USB Host  
USB 2.0, not galvanically isolated

USB device  
USB 2.0, not galvanically isolated

RS-232  
Not galvanically isolated, 9-pin D-sub plug, UNC

RS-485  
Not galvanically isolated, 9-pin D-sub plug, UNC

CAN  
Not galvanically isolated, 9-pin D-sub plug, UNC

Slots  
for SD card: 1

Ethernet  
10/100 Mbps

## Power supply

Nominal voltage  
24 V DC SELV (safety extra low voltage)

permissible voltage  
Effective: 19.2-30.0 V DC (rated operating voltage  
-20%/+25%)  
Absolute with ripple: 18,0-31,2 V DC  
Battery powered: 18,0-31,2 V DC (rated operating  
voltage -25%/+30%)  
35 V DC for a duration of < 100 ms

Voltage dips  
 $\leq 10$  ms from rated voltage (24 V DC)  
5 ms from undervoltage (19.2 V DC) ms

Power consumption [ $P_{max}$ ]  
14.4 W

Power consumption  
Normally 14 W

Heat dissipation  
14.4 W

Note on heat dissipation  
Heat dissipation with power consumption for 24 V  
11.9 W for basic device + 2.5 W for USB module

Protection against polarity reversal  
yes

Type of fuse  
Yes (fuse not accessible)

Potential isolation  
no

## General

Housing material  
Insulated material black

Front type  
Anti-glare tempered glass in plastic bezel

Dimensions (W x H x D)  
196 x 135 x 51 mm

flush mounted  
Clearance: W x H x D  $\geq$  30 mm (1.18")  
Inclination from vertical:  $\pm 45^\circ$  (if using natural convection)

Weight  
0.74 kg

Degree of protection (IEC/EN 60529, EN 50178, VBG 4)  
IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1)  
NEVA 4X  
NEVA12 (as per NEVA 250-2003)

Approvals  
Approvals  
cUL 61010-2-201

Approvals  
shipping classification  
DNV GL



Applied standards and directives  
EMC  
2004/108/EEC

Applied standards and directives  
Emitted interference  
IEC/EN 61000-6-4

Applied standards and directives

Interference immunity  
IEC/EN 61000-6-2

Applied standards and directives  
Product standards  
EN50178/IEC/EN 61131-2

Mechanical shock resistance  
15g / 11ms g

Vibration  
5...9 Hz +/- 3.5 mm  
9...60 Hz +/- 0.15 mm  
60...150 Hz ± 2 g

Free fall, packaged  
IEC/EN 60068-2-31 m

RoHS  
conform

## Environmental conditions

Climatic environmental conditions  
Climatic proofing  
Cold to EN 60068-2-1  
Dry heat to IEC 60068-2-2  
Damp heat as per EN 60068-2-3

Climatic environmental conditions  
Air pressure (operation)  
795 - 1080 hPa

Temperature  
Storage / Transport [9]  
-20 - +60 °C

Temperature  
Operating ambient temperature min.  
0 °C

Temperature  
Operating ambient temperature max.  
+50 °C

Relative humidity  
Condensation

Non-condensing

Relative humidity  
Relative humidity  
10 - 95%, non-condensing

## DESIGN VERIFICATION AS PER IEC/EN 61439

### Technical data for design verification

Rated operational current for specified heat  
dissipation [ $I_r$ ]  
0 A

Heat dissipation per pole, current-dependent [ $P_{id}$ ]  
0 W

Equipment heat dissipation, current-dependent  
[ $P_{id}$ ]  
0 W

Static heat dissipation, non-current-dependent [ $P_{is}$ ]  
14.4 W

Heat dissipation capacity [ $P_{diss}$ ]  
0 W

Operating ambient temperature min.  
0 °C

Operating ambient temperature max.  
+50 °C

Degree of Protection  
IP65 (in the front as per EN 60529-1), IP20 (on rear  
as per EN 60529-1)  
NEMA 4X

### IEC/EN 61439 design verification

10.2 Strength of materials and parts  
10.2.2 Corrosion resistance  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.3.1 Verification of thermal stability of enclosures  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.3.2 Verification of resistance of insulating materials to normal heat  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.4 Resistance to ultra-violet (UV) radiation  
Please enquire

10.2 Strength of materials and parts  
10.2.5 Lifting  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts  
10.2.6 Mechanical impact  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts  
10.2.7 Inscriptions  
Meets the product standard's requirements.

10.3 Degree of protection of ASSEMBLIES  
Meets the product standard's requirements.

10.4 Clearances and creepage distances  
Meets the product standard's requirements.

10.5 Protection against electric shock  
Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components  
Does not apply, since the entire switchgear needs to be evaluated.

10.7 Internal electrical circuits and connections  
Is the panel builder's responsibility.

10.8 Connections for external conductors  
Is the panel builder's responsibility.

10.9 Insulation properties  
10.9.2 Power-frequency electric strength  
Is the panel builder's responsibility.

10.9 Insulation properties  
10.9.3 Impulse withstand voltage  
Is the panel builder's responsibility.

10.9 Insulation properties  
10.9.4 Testing of enclosures made of insulating material  
Is the panel builder's responsibility.

10.10 Temperature rise  
The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating  
Is the panel builder's responsibility.

10.12 Electromagnetic compatibility  
Is the panel builder's responsibility.

10.13 Mechanical function  
The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## TECHNICAL DATA ETIM 7.0

PLCs (EG000024) / Graphic panel (EC001412)

Electric engineering, automation, process control engineering / Display and control component / Panel (HM) / Graphic panel (HM) (ecl@ss10.0.1-27-33-02-01 [AFX016003])

Supply voltage AC 50 Hz  
0 - 0 V

Supply voltage AC 60 Hz  
0 - 0 V

Supply voltage DC  
19.2 - 30 V

Voltage type of supply voltage  
DC

Number of HW-interfaces industrial Ethernet  
1

Number of interfaces PROFINET  
0

Number of HW-interfaces RS-232  
1

Number of HW-interfaces RS-422  
0

Number of HW-interfaces RS-485  
1

Number of HW-interfaces serial TTY  
0

Number of HW-interfaces USB  
2

Number of HW-interfaces parallel  
0

Number of HW-interfaces Wireless  
0

Number of HW-interfaces other  
1

With SW interfaces  
Yes

Supporting protocol for TCP/IP  
Yes

Supporting protocol for PROFIBUS  
No

Supporting protocol for CAN  
Yes

Supporting protocol for INTERBUS  
No

Supporting protocol for ASI  
No

Supporting protocol for KNX  
No

Supporting protocol for MODBUS  
Yes

Supporting protocol for Data-Highway  
No

Supporting protocol for DeviceNet  
No

Supporting protocol for SUCONET  
No

Supporting protocol for LON  
No

Supporting protocol for PROFINET IO  
No

Supporting protocol for PROFINET CBA  
No

Supporting protocol for SERCOS  
No

Supporting protocol for Foundation Fieldbus  
No

Supporting protocol for EtherNet/IP  
Yes

Supporting protocol for AS-Interface Safety at  
Work  
No

Supporting protocol for DeviceNet Safety  
No

Supporting protocol for INTERBUS-Safety  
No

Supporting protocol for PROFiSAFE  
No

Supporting protocol for SafetyBUS p  
No

Supporting protocol for other bus systems  
No

Radio standard Bluetooth  
No

Radio standard WLAN 802.11  
No

Radio standard GPRS  
No

Radio standard GSM  
No

Radio standard UMTS  
No

IO link master  
No

Type of display  
TFT

With colour display  
Yes

Number of colours of the display  
16777.216

Number of grey-scales/blue-scales of display  
0

Screen diagonal  
7 inch

Number of pixels, horizontal  
1.024

Number of pixels, vertical  
600

Useful project memory/user memory  
512 kByte

With numeric keyboard  
No

With alpha numeric keyboard  
No

Number of function buttons, programmable  
0

Number of buttons with LED  
0

Number of system buttons  
1

Touch technology  
Capacitive multitouch

With message indication

Yes

With message system (incl. buffer and confirmation)

Yes

Process value representation (output) possible

Yes

Process default value (input) possible

Yes

With recipes

Yes

Number of password levels

200

With printer output

Yes

Number of online languages

100

Additional software components, loadable

Yes

Degree of protection (IP), front side

IP65

Degree of protection (NEMA), front side

12

Operation temperature

0 - 50 °C

Rail mounting possible

No

Wall mounting/direct mounting

No

Suitable for safety functions

No

Width of the front  
196 mm

Height of the front  
135 mm

Built-in depth  
43.1 mm

## APPROVALS

Product Standards  
UL 61010-2-201; IEC/EN 61131-2; CE

UL File No.  
E205091

North America Certification  
UL listed, certified by UL for use in Canada

Specially designed for North America  
No

Current Limiting Circuit-Breaker  
No

Degree of Protection  
IEC: IP65, NA: NEMA4X, NEMA12

## DIMENSIONS



XV-303-... multi-touch panel with 7" screen  
diagonal; version: flush mounting

a, b, c  $\square$  30 mm,  $\varnothing$  0  $\square$  T  $\square$  50 °C

2 mm  $\square$  d  $\square$  5 mm, e = 183 mm, f = 122 mm,  $\square$  = 45°



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