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



Control panel with PLC, 24 V DC, 7 Inches PCT-Display, 1024x600 pixels, 1xEthernet, 1xRS232, 1xRS485, 1xCAN, 1xSD card slot



Part no. XV-303-70-B00-A00-1C

Catalog No. 179649

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

No.

Similar to illustration

Delivery program		
Delivery program		XV300 7*
Product range		
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	Pixel	WSVGA 1024 x 600
Portrait format		yes
Screen diagonal	Inch	7 widescreen
Model		Plastic enclosure and glass panel in plastic frame
Operating system		Windows Embedded Compact 7 Pro
PLC-licence 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	W	14.4

Technical data

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Display		
Display - Type		Color display, TFT, anti-glare
Screen diagonal	Inch	7 widescreen
Resolution	Pixel	WSVGA 1024 x 600
Visible screen area	mm	153.6 x 90.0
Format		16:9
Number of colours		16777216 (Color depth 24 bit)
Contrast ratio (Normally)		Normally 850:1
Brightness	cd/m ²	Normally 400

Service life of back-lighting Operation Technology		h	dimmable via software Normally 50000
Operation		h	Normally 50000
Technology			
			Projected Capacitive Touch (PCT)
Touch sensor			Multi-touch touch panel
System			ADM O ACCOMMU
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
Backup (time at zero voltage)			Normally 10 years
Engineering			
Visualisation software			GALILEO
PLC-Programming software			XSOFT-CODESYS XSOFT-CODESYS-2
			XSOFT-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			TO TOO WILLIAM
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		ms	≤ 10 ms from rated voltage (24 V DC) 5 ms from undervoltage (19.2 V DC)
Power consumption	P _{max} .	W	14.4
Power consumption		W	Normally 14
Heat dissipation		W	14.4
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)		mm	196 x 135 x 51
flush mounted			Clearance: W x H x D ≥ 30 mm (1.18") Inclination from vertical: ±45° (if using natural convection)
Weight		kg	0.74
Degree of protection (IEC/EN 60529, EN50178, VBG 4)			IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1) NEMA 4X NEMA12 (as per NEMA 250-2003)

Approvals		
Approvals		cUL 61010-2-201
shipping classification		DNV GL
		DNV-GL MARITIME
Applied standards and directives		
EMC		2004/108/EEC
Emitted interference		IEC/EN 61000-6-4
Interference immunity		IEC/EN 61000-6-2
Product standards		EN50178/IEC/EN 61131-2
Mechanical shock resistance	g	15g / 11ms
Vibration		59 Hz +- 3.5 mm 960 Hz +- 0.15 mm 60150 Hz ± 2 g
Free fall, packaged	m	IEC/EN 60068-2-31
RoHS		conform
Environmental conditions		
Climatic 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
Air pressure (operation)		hPa	795 - 1080
Temperature			
Storage / Transport	9	°C	-20 - +60
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	+ 50
Relative humidity			
Condensation			Non-condensing
Relative humidity			10 - 95%, non-condensing

Design verification as per IEC/EN 61439

chnical data for design verification			
Rated operational current for specified heat dissipation	In	Α	0
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	14.4
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	50
Degree of Protection			IP65 (in the front as per EN 60529-1), IP20 (on rear as per EN 60529-1) NEMA 4X
C/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
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.
10.2.4 Resistance to ultra-violet (UV) radiation			Please enquire
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
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.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
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 PLC's (EG000024) / Graphic panel (EC00141

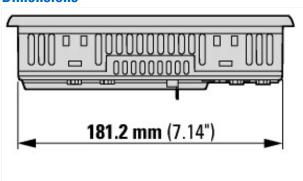
PLC's (EG000024) / Graphic panel (EC001412)		
Electric engineering, automation, process control engineering / Display and control component / Panel (HMI) / Graphic panel (HMI) (ecl@ss10.0.1-27-33-02-01 [AFX016003])		
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	19.2 - 30
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

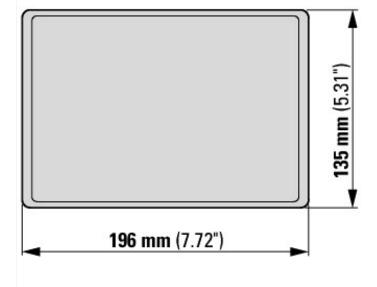
Radio standard WAN 802.11 No Radio standard GPRS No Radio standard GRM No Radio standard GRM No Radio standard MTS No 10 link master No Who calour display TFT When calour display 1972718 Number of calours of the display 1972718 Number of physical foreignes 1972718 With nameric keyboard 1972 With nameric keyboard 1972 With nameric keyboard 1972 With nameric keyboard 1972 Number of buttons with LEO 1972 Number of system button 1972 With nessage indication 1972 With nessage system firch butter and confirmation 1972 With nessage system firch butter and confirmation 1972 With printer cause (input possible 1972 With printer cause (input possible 1972			
Radio standard SSM No Radio standard MTS No 10 lin master No Type of display TF With colour display 16772788 Number of colours of the display 16772788 Number of phy- scales/blue-scales of display 1670 Screen disponal 1670 Number of phosis, horizontal 1870 Number of pystem buttons 1870 Touch technology 1870 With message sindication 1870 With message sindication fourial possible 1870 Process defauit value (input) possible 1870	Radio standard WLAN 802.11		No
Radio standard UMTS No 10 lake master No Type of display FT With colour slighlay Yes Number of colours of the display 677715 Number of grey-scleshblue-scales of display 0 Screen diagonal 102 102 Number of grey-scleshblue-scales of display 102 102 With unardic keybord 102 102 102 With plan aumantic keybord 103 102 102 Number of suttens with LED 103 102 102 Number of system buttons 102 102 102 Number of system line butters and confirmation 102 102 102 Number of password levels 102 10	Radio standard GPRS		No
ID link master No FF Type of display FF FF With colour display PG 1677216 Number of Grey-scales/blue-scales of display PG 10 Number of grey-scales/blue-scales of display Inch 7 Number of placks, horizontal Inch 7 Number of placks, horizontal Inch 70 Number of placks, horizontal Inch 70 With qualph animeric keyboard Inch 70 With alpha numeric keyboard Inch 70 Number of function buttons, programmable Inch 70 Number of system buttons Inch 70 With message indication Inch 70 With message system funct. buffer and confirmation) Inch 70 With recipes Inch 72 Process default value (nput) possible Inch 72 With primer ortput Inch 72 Number	Radio standard GSM		No
Type of display FTF With colour display 1	Radio standard UMTS		No
With colour display % 4577216 Number of colours of the display 6777216 6777216 Number of prey-scales/blue-scales of display 6 10 10 Number of prey-scales/blue-scales of display 6 10 10 Number of pixels, broizental 6 12 10 Number of pixels, vertical 8 12 10 Useful project memory/user memory 6 12 10 With numeric keyboard 8 12 10 With dipha numeric keyboard 9 12 10 Number of buttons with LEO 9 10 10 Number of system buttons 9 12 12 10 With message system (incl. buffer and confirmation) 9 12 <td< td=""><td>10 link master</td><td></td><td>No</td></td<>	10 link master		No
Number of colours of the display 6 1877216 Number of prey-scales/blue-scales of display 6 10 Screen diagonal 10 124 Number of pixels, horizontal 2 10 Number of pixels, vertical 9 124 Useful project memory/user memory 9 1500 With alpha numeric keyboard 9 10 With alpha numeric keyboard 9 10 Number of buttons, programmable 9 10 Number of buttons, programmable 9 10 Number of buttons with LED 10 10 Number of buttons with LED 10 10 Number of system buttons 10 10 You have sage inclusion 10 10 With message system (incl. buffer and confirmation) 10 10 With message system (incl. buffer and confirmation) 10 10 Number of password levels 10 10 With printer output 10 10 Number of password levels 10 10	Type of display		TFT
Number of grey-scales/fule-scales of display In the proof process of display (and on process) In the proof process of display (and on process) In the proof process of display (and on process) In the proof process of display (and on process) In the process of	With colour display		Yes
Screen diagonal inch 7 Number of pixels, horizontal 1024 1024 Number of pixels, vertical 600 1000 Useful project memory (ser memory 600 12000 With numeric keyboard 600 No With alpha numeric keyboard 600 No Number of function buttons, programmable 600 100 Number of buttons with LED 600 100 Number of buttons with LED 600 100 Number of system buttons 600 100 With message system (incl. buffer and confirmation) 600 100 With message system (incl. buffer and confirmation) 600 100 With message system (incl. buffer and confirmation) 600 100 Process default value (input) possible 600 100 With recipes 600 100 Number of password levels 600 100 With printer output 600 100 Additional software components, loadable 600 100 Degree of protection (NEMA), front side	Number of colours of the display		16777216
Number of pixels, horizontal 102	Number of grey-scales/blue-scales of display		0
Number of pixels, vertical kByte 512000 Useful project memory/user memory kByte 512000 With numeric keyboard No With alpha numeric keyboard No O Number of function buttons, programmable O O Number of buttons with LED O O Number of system buttons D Capacitive multitouch Touch technology Capacitive multitouch With message indication Yes Yes With message system (incl. buffer and confirmation) Yes Yes Process value representation (output) possible Yes Yes With recipes Yes Yes With recipes Yes Yes With printer output Yes Yes Number of password levels Yes Yes With printer output Yes Yes Additional software components, loadable Yes Yes Degree of protection (NEMA), front side Yes Yes Degree of protection (NEMA), front side Yes Yes	Screen diagonal	inch	7
Useful project memory/user memory kByte 512000 With numeric keyboard No No With alpha numeric keyboard No No Number of function buttons, programmable Po 0 Number of buttons with LEO 1 1 Number of system buttons Capacitive multitouch 1 Touch tachology Capacitive multitouch 2 With message indication Yes Yes With message system (incl. buffer and confirmation) Yes Yes Process default value (input) possible Yes Yes With recipies Yes Yes With printer output Yes Yes Number of password levels Yes Yes Number of online languages Yes Yes Additional software components, loadable Yes Yes Degree of protection (IP), front side Yes Yes Degree of protection (NEMA), front side Yes Yes Degree of protection (MEMA), front side Yes Yes Wall mounting/direct mounting	Number of pixels, horizontal		1024
With numeric keyboard No With alpha numeric keyboard 0 Number of function buttons, programmable 0 Number of buttons with LED 0 Number of system buttons 0 Touch technology Capacitive multitouch With message system (incl. buffer and confirmation) Yes With message system (incl. buffer and confirmation) Yes Process value representation (butput) possible Yes With recipes Yes With recipes Yes Number of password levels Yes Number of online languages Yes Number of online languages Yes Additional software components, loadable Yes Degree of protection (IPI, front side Yes Degree of protection (IPI, front side Yes Rail mounting yossible Yes Will muming Jufferet mounting Yes	Number of pixels, vertical		600
With alpha numeric keyboard	Useful project memory/user memory	kByte	512000
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 With recipes Yes Number of password levels Yes Number of password levels Yes Number of online languages Yes Number of online languages Yes Additional software components, loadable Yes Degree of protection (IP), front side 185 Degree of protection (NEMA), front side 185 Operation temperature 0 -5 Rail mounting/direct mounting 0 -5 With of the front 0 -6 -6	With numeric keyboard		No
Number of buttons with LED	With alpha numeric keyboard		No
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 Yes Number of online languages Yes Additional software components, loadable Yes Degree of protection (IP), front side Yes Degree of protection (NEMA), front side Yes Operation temperature Yes Rail mounting/direct mounting Yes Suitable for safety functions Yes With of the front Yes In output Yes No Yes In output Yes No Yes	Number of function buttons, programmable		0
Touch technology With message indication With message system (incl. buffer and confirmation) Process value representation (output) possible Process default value (input) possible Process default value (input) possible With recipes With recipes Number of password levels With printer output With printer output Number of online languages Additional software components, loadable Degree of protection (IP), front side Degree of protection (NEMA), front side Degree of protect	Number of buttons with LED		0
With message system (incl. buffer and confirmation) Process value representation (output) possible Process default value (input) possible With recipes With recipes Number of password levels Number of online languages Number of online languages Additional software components, loadable Degree of protection (IP), front side Degree of protection (IPMA), front side Degree of protection (IPMA), front side Degree of protection temperature Rail mounting possible Wall mounting/direct mounting Suitable for safety functions With of the front Height of the front Wall front Height of the front Wall mounting of the front Wall mounting from the firet front With message system (incl. buffer and confirmation) Yes Yes 200 200 200 200 200 200 200 200 200 20	Number of system buttons		1
With message system (incl. buffer and confirmation) Process value representation (output) possible Process default value (input) possible With recipes With recipes Number of password levels Number of password levels Number of online languages Negree of protection (IP), front side Degree of protection (IP), front side Degree of protection (NEMA), front side Noperation temperature Rail mounting possible Nol Wall mounting for safety functions With of the front Height of the front Mental Solution (III) (II	Touch technology		Capacitive multitouch
Process value representation (output) possible Process default value (input) possible With recipes With recipes Number of password levels With printer output With printer output Number of online languages Number of online languages Number of online languages Negree of protection (IP), front side Degree of protection (IP), front side Degree of protection (NEMA), front side No Degree of protection (NEMA), front side No Suitable for safety functions Width of the front Meditional software components, loadable No Width of the front Meditional software components, loadable No	With message indication		Yes
Process default value (input) possible With recipes Number of password levels With printer output With printer output Number of online languages Additional software components, loadable Degree of protection (IP), front side Degree of protection (NEMA), front side Degree of protection (NEMA), front side Upstable of value of v	With message system (incl. buffer and confirmation)		Yes
With recipes Number of password levels With printer output Ves Number of online languages Number of online languages Additional software components, loadable Degree of protection (IP), front side Degree of protection (NEMA), front side Degree of protection (NEMA), front side Norration temperature Rail mounting possible Wall mounting/direct mounting Suitable for safety functions Width of the front Midth of the	Process value representation (output) possible		Yes
Number of password levels With printer output Number of online languages Additional software components, loadable Degree of protection (IP), front side Degree of protection (NEMA), front side Degree of protection (NEMA), front side Operation temperature Rail mounting possible Wall mounting/direct mounting Suitable for safety functions Width of the front Height of the front Degree of password levels Yes 100 100 100 100 100 100 100 1	Process default value (input) possible		Yes
With printer output Number of online languages 100 Additional software components, loadable Pegree of protection (IP), front side Degree of protection (NEMA), front side 12 Operation temperature °C 0-50 Rail mounting possible No Wall mounting/direct mounting Suitable for safety functions No Width of the front Height of the front Mo Manuel Manuel Manuel Manuel Michael Manuel Mich	With recipes		Yes
Number of online languages Additional software components, loadable Ves Degree of protection (IP), front side IP65 Degree of protection (NEMA), front side IP65 Degree of protection (NEMA), front side IP65 Degree of protection (NEMA), front side IP65 No Rail mounting possible No Wall mounting/direct mounting No Suitable for safety functions No Width of the front Midth of	Number of password levels		200
Additional software components, loadable Degree of protection (IP), front side Degree of protection (NEMA), front side Degreation temperature PC 0 - 50 Rail mounting possible Wall mounting/direct mounting Suitable for safety functions Width of the front Height of the front We served the served in the side of the side of the served in the served i	With printer output		Yes
Degree of protection (IP), front side Degree of protection (NEMA), front side 12 Operation temperature PC 0 - 50 Rail mounting possible Wall mounting/direct mounting Suitable for safety functions Width of the front Meight of the front IP65 12 O - 50 No No No No 196 Height of the front Mm 196	Number of online languages		100
Degree of protection (NEMA), front side 12 Operation temperature Rail mounting possible Wall mounting/direct mounting Suitable for safety functions Width of the front Meight of the front 12 0 - 50 No No No No 135	Additional software components, loadable		Yes
Operation temperature Rail mounting possible Wall mounting/direct mounting Suitable for safety functions Width of the front Meight of the front No Mo Mo Mo Mo Mo Mo Mo Mo Mo	Degree of protection (IP), front side		IP65
Rail mounting possible Wall mounting/direct mounting No Suitable for safety functions Width of the front mm 196 Height of the front mm 135	Degree of protection (NEMA), front side		12
Wall mounting/direct mounting Suitable for safety functions Width of the front Height of the front No mm 196 Height of the front mm 135	Operation temperature	°C	0 - 50
Suitable for safety functionsNoWidth of the frontmm196Height of the frontmm135	Rail mounting possible		No
Width of the front mm 196 Height of the front mm 135	Wall mounting/direct mounting		No
Height of the front mm 135	Suitable for safety functions		No
	Width of the front	mm	196
Built-in depth mm 43.1	Height of the front	mm	135
	Built-in depth	mm	43.1

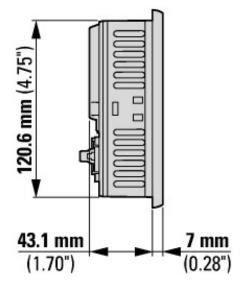
Approvals

• •	
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

