

Touch panel, 24 V DC, 3.5z, TFTcolor, ethernet, SWDT, PLC

Part no. XV-102-BE-35TQRC-10
Article no. 153524
Catalog No. XV-102-BE-35TQRC-10

Powering Business Worldwide

Delivery programme

Model		Insulating enclosure and front plate
Subrange		SmartWire-DT touch display with integrated controller (HMI PLC)
Function		SmartWire-DT coordinator
Product range		Visualisation solutions SmartWire-DT Communication System
Front type		Standard front with standard membrane (fully enclosed)
Screen diagonal	Inch	3.5
Resolution	Pixel	QVGA 320 x 240
built-in interfaces		1 x Ethernet 100base-TX/10base-T 1 x USB device 1 x SmartWire-DT

Technical data

Display

Display - Type		Color display, TFT
Screen diagonal	Inch	3.5
Resolution	Pixel	QVGA 320 x 240
Visible screen area	mm	70 x 53
Number of colours		64 k Colours
Contrast ratio (Normally)		Normally 300:1
Brightness	cd/m^2	Normally 250
Back-lighting		LED dimmable via software
Service life of back-lighting	h	Normally 40000
Resistive touch protective screen		Touch sensor (glass with foil)

Operation

Technology		Resistive-Touch 4 Drath

System

Processor		RISC CPU, 32 Bit, 400 MHz
Internal memory		DRAM (OS, Program and data memory): 64 MByte NAND-Flash (can be used for data backup): approx. 128 MByte available NVRAM (retained data): approx. 32 KByte available
External memory		SD Memory Card Slot: SDA Specification 1.00
Back-up of real-time clock		
Battery (service life)		Zero maintenance
Backup (time at zero voltage)		Normally 10 years
Operating system		Windows CE 5.0 (licence incl.)

Engineering

Visualisation software		GALILEO EPAM XSOFT-CODESYS-2 XSOFT-CODESYS-3
PLC-Programming software		XSOFT-CODESYS-2 XSOFT-CODESYS-3
Target and web visualization		Yes

Interfaces, communication

built-in interfaces		1 x Ethernet 100base-TX/10base-T 1 x USB device 1 x SmartWire-DT
PLC-licence		PLC licence inclusive
USB Host		no
USB device		USB 2.0, not galvanically isolated
RS232 (System Port)		no

CAN			no
Profibus			no
RS485 (COM port)			no
Slots			for SD card: 1
SmartWire-DT master			Yes
Ethernet			100Base-TX/10Base-T
easyNet			no
MPI			no

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		ms	≤ 10 ms from rated voltage (24 V DC) 5 ms from undervoltage (20.4 V DC)
Power consumption	$P_{max.}$	W	5
Note on power consumption			Basic device USB Slave to USB Host: 2.5 Total: 9.5
Siemens MPI, (optional)			yes
Type of fuse			Yes (fuse not accessible)
Potential isolation			no potential isolation
Heat dissipation		W	5
Note on heat dissipation			Heat dissipation with power consumption for 24 V, all ports and interfaces connected

General

Housing material			Plastic, gray
Front type			Standard front with standard membrane (fully enclosed)
Weight		kg	0.3
Degree of protection (IEC/EN 60529, EN50178, VBG 4)			IP65 (at front), IP20 (at rear)
Approvals			
Approvals			cUL (UL508)
Explosion protection (according to ATEX 94/9/EC)			II 3D Ex II T70°C IP5x: Zone 22, Category 3D
Applied standards and directives			
EMC			(in relation to CE) EN 61000-6-2 EN 61000-6-4 EN 61131-2
Explosion protection (relevant for CE)			EN 60079-0 EN 61241-1 EN 13463_x
Product standards			EN 50178 EN 61131-2
Security			EN 60950 UL 60950
Mechanical shock resistance		g	according to IEC 60068-2-27
Vibration			according to IEC/EN 60068-2-6

Environmental conditions

Temperature			
Operation	ϑ	°C	0 - +50
Storage / Transport	ϑ	°C	-20 - +60
Relative humidity		%	
Relative humidity			10 - 95%, non-condensing

Supply voltage U_{Aux}

Rated operational voltage	U_{Aux}	V	24 V DC (-20/+25%)
Residual ripple on the input voltage		%	≤ 5
Protection against polarity reversal			Yes
Max. current	I_{max}	A	3
Note			If contactors with a total power consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.
Short-circuit rating			no, external fuse FAZ Z3

Potential isolation			No
Rated operating voltage of 24-V-DC slaves		V	typ. U_{Aux} - 0.2

Supply voltage U_{Pow}

Supply voltage	U_{Pow}	V	24 DC -20 % + 25 %
Input voltage ripple		%	≤ 5
Siemens MPI, (optional)			yes
Rated current	I	A	0.7
Overload proof			yes
Inrush current and duration		A	12.5 A/6 ms
Heat dissipation at 24 V DC		W	1.0
Potential isolation between U_{Pow} and 15 V SmartWire-DT supply voltage			No
Bridging voltage dips		ms	10
Repetition rate		s	1
Status indication		LED	yes

SmartWire-DT supply voltage

Rated operating voltage	U_e	V	14,5 ± 3 %
max. current	I_{max}	A	0.7
Note			If SmartWire-DT modules with a total power consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used.
Short-circuit rating			Yes

Connection supply voltages

Connection type			Push in terminals
Solid		mm^2	0.2 - 1.5
Flexible with ferrule		mm^2	0.25 - 1.5
UL/CSA solid or stranded		AWG	24 - 16

SmartWire-DT network

Station type			SmartWire-DT master
Number of SmartWire-DT slaves			99
Baud Rates		kBd	125 250
Address allocation			automatic
Status indication		LED	SmartWire-DT master LED: green Configurations LED: red
Connections			Plug, 8-pole
Plug connectors			Blade terminal SWD4-8MF2

Data for design verification according to IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	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	5
Heat dissipation capacity	P_{diss}	W	0
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 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 5.0

PLC's (EG000024) / Graphic panel (EC001412)

Electric engineering, automation, process control engineering / Control / Operate and Observe (HMI) / Graphic panel (HMI) (ecl@ss8-27-24-23-02 [BAA722009])

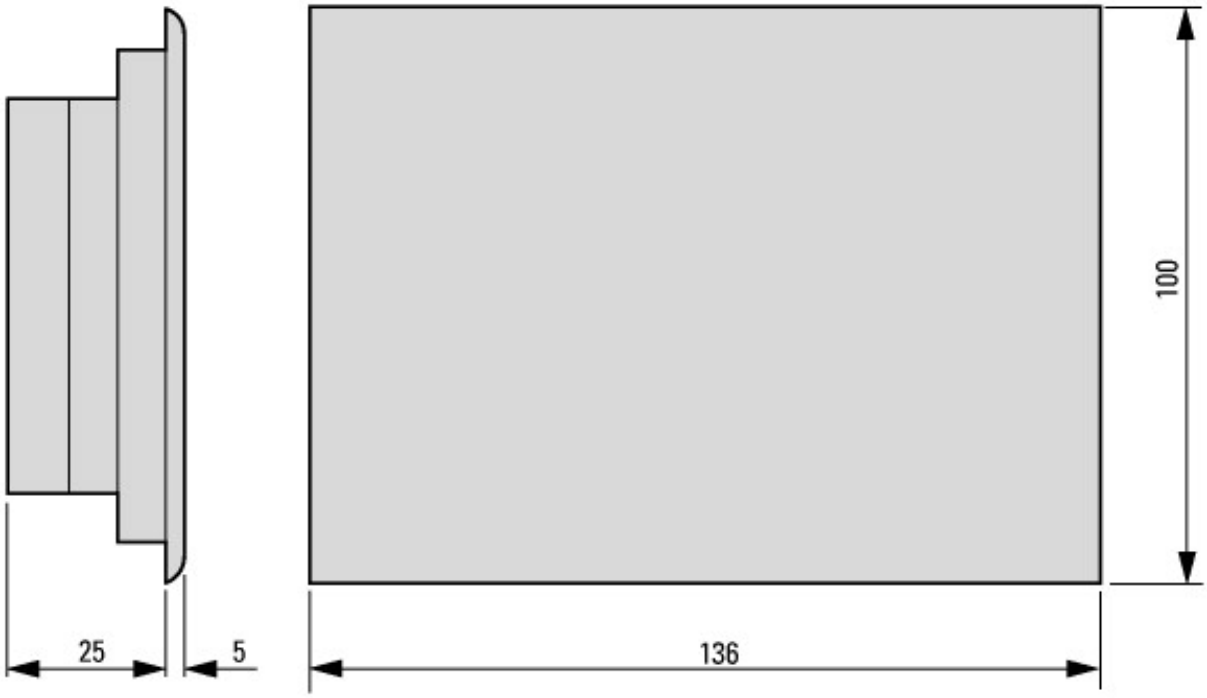
Supply voltage AC 50 Hz		V	0 - 0
Supply voltage AC 60 Hz		V	0 - 0
Supply voltage DC		V	20.4 - 28.8
Voltage type of supply voltage			DC
Number of HW-interfaces industrial Ethernet			1
Number of HW-interfaces PROFINET			0
Number of HW-interfaces RS-232			0
Number of HW-interfaces RS-422			0
Number of HW-interfaces RS-485			0
Number of HW-interfaces serial TTY			0
Number of HW-interfaces USB			1
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			No
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			Yes
Radiostandard Bluetooth			No

Radiostandard WLAN 802.11		No
Radiostandard GPRS		No
Radiostandard GSM		No
Radiostandard UMTS		No
IO link master		No
Type of display		TFT
With colour display		Yes
Number of colours of the display		65536
Number of grey-scales/blue-scales of display		0
Screen diagonal	inch	3.5
Number of pixels, horizontal		320
Number of pixels, vertical		240
Useful project memory/user memory	kByte	64000
With numeric keyboard		Yes
With alpha numeric keyboard		Yes
Number of function buttons, programmable		0
With system buttons		No
Buttons with LED		No
With touch screen		Yes
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
Printer output available		Yes
Number of online languages		100
Additional software components, loadable		Yes
Degree of protection (IP), front side		IP65
Operation temperature	°C	0 - 50
Rail mounting possible		No
Wall mounting/direct mounting		No
Suited for safety functions		No
Width of the front	mm	136
Height of the front	mm	100
Built-in depth	mm	25

Approvals

Product Standards		UL508, cULus; IEC/EN 61131-2, CE
UL File No.		E205091
UL Category Control No.		NRAQ
CSA File No.		UL report applies to US and Canada
CSA Class No.		-
North America Certification		UL listed, certified by UL for use in Canada
Degree of Protection		IEC:IP20, UL/CSA Tape: open type

Dimensions



Additional product information (links)

IL04802004Z Instruction leaflet	
IL04802004Z Instruction leaflet	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04802004Z2013_03.pdf
MN04802004Z Operator manual XV-102	
MN04802004Z Betriebsanleitung XV-102 - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802004Z_DE.pdf
MN04802004Z Operator manual XV-102 - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802004Z_EN.pdf
MN04802013Z quick-start instructions XV100	
MN048020132 Schnellstartanleitung XV100 - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802013Z_DE.pdf
MN048020132 quick-start instructions XV100 - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802013Z_EN.pdf
MN04802091Z User manual XSoft-CoDeSys-2, PLC programming XV100	
MN04802091Z User manual XSoft-CoDeSys-2, PLC programming XV100	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802091Z-DE_2010-12.pdf
MN04802091Z User manual XSoft-CoDeSys-2, PLC programming XV100	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802091Z-DE_2012-05.pdf
MN04802091Z User manual XSoft-CoDeSys-2, PLC programming XV100	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802091Z-DE_2014-05.pdf
MN04802091Z User manual XSoft-CoDeSys-2, PLC programming XV100	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802091Z-EN_2010-12.pdf
MN04802091Z User manual XSoft-CoDeSys-2, PLC programming XV100	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802091Z-EN_2012-05.pdf
MN04802091Z User manual XSoft-CoDeSys-2, PLC programming XV100	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04802091Z-EN_2014-05.pdf
MN048008ZU Manual XSOFT-CODESYS-3, PLC programming	
MN048008ZU Handbuch XSOFT-CODESYS-3, SPS-Programmierung - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN048008ZU_DE.pdf
MN048008ZU Manual XSOFT-CODESYS-3, PLC programming - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN048008ZU_EN.pdf

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