DATASHEET - XV-460-57TQB-1-10

Touch panel, ir, 24 V DC, 5.7z, TFTcolor, ethernet, RS232, CAN, (PLC)

Part no.	XV-460-57TQB-1-10
Catalog No.	139897
EL-Nummer (Norway)	4560814

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Delivery program

Product range		XV400 5.7"
Product range		XV400
Function		HMI-PLC (SPS function, retrofittable)
Common features of the model series		Ethernet interface USB device RS232 CAN/easyNet UL508, cUL approvals PLC function can be fitted by user Communications scope can be fitted by user with licenses
Display - Type		Color display, TFT
Touch-technology		Infra-red touch
Number of colours		Adjustable: 65536 or 256 colours
Resolution	Pixel	QVGA 320 x 240
Portrait format		yes
Screen diagonal	Inch	5.7
Model		Metal enclosure and front plate
Operating system		Windows CE (license required) CompactFlash card required
PLC-licence		Can be fitted by user with article no. 140389 LIC-PLC-MXP-SMALL
License certificates for onboard interfaces		Can be expanded as required, see Accessories -> License product certificates
built-in interfaces		1 x Ethernet 100base-TX/10base-T 1 x RS232 1 x CAN 1 x USB host 1 x USB device
Front type		Standard front with standard membrane Laminated safety glass, non-reflective
Utilization		Flush mounting
Slots		for Compact-Flash^{TM}-Cards: 1 for communication modules: 1
Memory card automation		required, see Accessories -> Memory cards
Pluggable communication cards (optional)		yes
Heat dissipation	W	24

Technical data
Display

Display - Type		Color display, TFT
Screen diagonal	Inch	5.7
Resolution	Pixel	QVGA 320 x 240
Visible screen area	mm	115 x 86
Number of colours		Adjustable: 65536 or 256 colours
Contrast ratio (Normally)		Normally 400:1
Brightness	cd/m^2	Normally 350
Back-lighting		LED dimmable via software
Service life of back-lighting	h	Normally 40000
Infra-red touch protective screen		Laminated safety glass, non-reflective

Operation

Technology		Infra-red touch 47 x 31 logic channels

System

Processor		RISC CPU, 32 Bit, 400 MHz
Internal memory		DRAM (OS, Program and data memory): 64 MByte Flash (can be used for data backup): approx. 1.5 MByte available NVRAM (retained data): approx. 32 KByte available
External memory		CF-Slot: 1 x CompactFlash Card type I/II for operating system, programs and data
Back-up of real-time clock		
Battery (service life)		non-replaceable, CR2032 soldered in
Backup (time at zero voltage)		Normally 10 years

Engineering

Visualisation software		GALILEO EPAM XSOFT-CODESYS-2 XSOFT-CODESYS-3
PLC-Programming software		XSOFT-CODESYS-2 XSOFT-CODESYS-3
PLC-licence		Can be fitted by user with article no. 140389 LIC-PLC-MXP-SMALL
Operating system		Windows CE (license required) CompactFlash card required

Interfaces, communication

built-in interfaces		1 x Ethernet 100base-TX/10base-T 1 x RS232 1 x CAN 1 x USB host 1 x USB device
USB Host		USB 2.0 (1.5 - 12 Mbit/s), not galvanically isolated
USB device		USB 1.1, not galvanically isolated
RS-232		RS-232, not galvanically isolated (SUB-D plug 9 pole, UNC)
CAN		CAN, galvanically isolated (SUB-D plug 9 pole, UNC)
Slots		for Compact-Flash^{TM}-Cards: 1 for communication modules: 1
Ethernet		100Base-TX/10Base-T

Power supply

Nominal voltage			24 V DC SELV (safety extra low voltage)
permissible voltage			Effective: 20.4-28.8 V DC (rated operating voltage -15%/+20%) Absolute with ripple: 19.2-30.0 V DC 35 V DC for a duration of < 100 ms
Voltage dips		ms	≤ 20 ms from rated voltage (24 V DC) 2 ms from undervoltage (20.4 V DC)
Power consumption	$P_{max.}$	W	24
Power consumption		W	Normally 13
Heat dissipation		W	24
Note on heat dissipation			Heat dissipation with power consumption for 24 V 17 W for basic device + 4 W for communication module + 3 W for USB module
Protection against polarity reversal			yes
Type of fuse			Yes (fuse not accessible)
Potential isolation			no potential isolation (0 V-connection to housing potential)

General

Housing material			Metal, anodized
Front type			Standard front with standard membrane Laminated safety glass, non-reflective
Weight		kg	1.9
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 (in relation to CE) EN60079-0, EN61241-1, EN13463
Applied standards and directives			
EMC			(in relation to CE) EN 61000-6-2 EN 61000-6-3 EN 61000-6-4 EN 61131-2
Product standards			EN 50178 EN 61131-2

Security			EN 60950 UL 60950
Mechanical shock resistance		g	according to IEC 60068-2-27
Vibration			To IEC 68-2-6

Environmental conditions

Climatic environmental conditions			
Air pressure (operation)		hPa	795 - 1080
Temperature			
Storage / Transport	ϑ	°C	-20 - +60
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	+ 50
Relative humidity			
Relative humidity			10 - 95%, non-condensing

Supply voltage U$_{Aux}$

Rated operational voltage	U$_{Aux}$	V	24 V DC (-15/+20%)
Protection against polarity reversal			Yes
Potential isolation			No

Design verification as per IEC/EN 61439

Technical data for design verification			
Static heat dissipation, non-current-dependent	P$_{vs}$	W	24
Operating ambient temperature min.		°C	0
Operating ambient temperature max.		°C	50
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 6.0

PLC's (EG000024) / Graphic panel (EC001412)			
Electric engineering, automation, process control engineering / Control / Operate and Observe (HMI) / Graphic panel (HMI) (ecl@ss8.1-27-24-23-02 [BAA722010])			
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			1
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			Yes
Supporting protocol for CAN			Yes
Supporting protocol for INTERBUS			No
Supporting protocol for ASI			No
Supporting protocol for KNX			Yes
Supporting protocol for MODBUS			Yes
Supporting protocol for Data-Highway			No
Supporting protocol for DeviceNet			Yes
Supporting protocol for SUCONET			Yes
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
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			65536
Number of grey-scales/blue-scales of display			0
Screen diagonal		inch	5.7
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
Number of buttons with LED			0
Number of system buttons			1
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
Suitable for safety functions		No
Width of the front	mm	212
Height of the front	mm	156
Built-in depth	mm	55

Approvals

Product Standards		UL 60950-01; CSA-C22.2 No. 60950-1; IEC/EN 61131-2; CE marking
UL File No.		E208621
UL Category Control No.		NWGQ2, NWGQ8
CSA File No.		UL report applies to both US and Canada
CSA Class No.		–
North America Certification		UL recognized, certified by UL for use in Canada
Conditions of Acceptability		The investigated Pollution Degree is: 2 Proper bonding to the end-product main protective earthing termination is: Required The following end-product enclosures are required: Fire, Electrical The unit must be supplied via a SELV source. The provided Ethernet Connection is only allowed to connect to inhouse networks.
Specially designed for North America		No
Current Limiting Circuit-Breaker		No
Degree of Protection		IEC: IP65, UL/CSA Type: -

Dimensions

Dimensions	