

HMI or combined HMI-PLC – with the XV400 series, the customer decides on the device functions and the preferred project engineering tool.

Devices in the XV400 series offer a very wide range of communication options. CANopen, Ethernet 10/100Mbit, USB Device, USB Host, RS232 directly on board offer maximum flexibility - whether as HMI, HMI-PLC, as a panel with gateway functionality, or connected to the supervisory level via Ethernet TCP/IP. Optional communication cards (PROFIBUS DP master/slave, MPI, DeviceNet etc.) round off the performance spectrum.

On-board functionality such as WEB browser, FTP server, Remote Client/Server or OPC Client/Server not only offer new possibilities for networking and programming, they also provide customers and users with an innovative leap for their automation.



Features of 5.7" devices:

- 5.7" STN Display
- 32 bit/400 MHz RISC CPU
- Windows™ CE
- Resistive or Infra-red Touch
- 1 slot for CompactFlash™
- 1 slot for communication modules
- Multitasking-capable PLC
- Vertical or horizontal mounting is possible

Features of 10" and 12" devices:

- 10.4 or 12.1" TFT display
- 32 bit/400 MHz RISC CPU
- Windows™ CE
- Resistive or Infra-red Touch
- 2 slots for CompactFlash™
- 2 slots for communication modules
- Multitasking-capable PLC
- Vertical or horizontal mounting is possible

Moeller NK2720-1151

	Display	Front version	Screen diagonal	Display area	Resolution	Slots for communication cards	Type Article no.	Price see price list	Std. pack
			Inch	mm	Pixel	Qty.			
Touch Display HMI-PLC XV400									
Processor RISC CPU, 32 bit, 400 MHz Data/project memory: 1.5 MB/32 – 64 MB Display: 5.7" STN color LCD, 256 colours; 10.4"/12" TFT color LCD, 65535 colours Integrated interfaces: Ethernet (programming interface/SYMArti communication), CANopen, RS232 Communication slots for communication modules Approvals: UL/c-UL Explosion protection: zone 22, category 3D Software: visualization = XSoft-GALILEO or XSoft-EPAM, Programming = XSoft-Professional Basic device with 140 points enable communication via SYMARTI or on-board interface For additional communication and PLC functionality → see Licensing at www.moeller.net/support CompactFlash™ with operating system is required → see Accessories: XT-OS-FLASH...									
	IR-Touch (infra-red optical grid), robust, scratch-proof front (laminated safety glass)	Standard film	5.7	118 x 89	320 x 240	1	XV-442-57CQB-X-13-1 289797		1 off
		Satin-finish brushed stainless steel	5.7	118 x 89	320 x 240	1	XV-442-57CQB-X-50-1 290435		
	Resistive-touch, absolutely plane (seamless) front	Standard film	5.7	118 x 89	320 x 240	1	XV-432-57CQB-X-13-1 289798		
	IR-Touch (infra-red optical grid), robust, scratch-proof front (laminated safety glass)	Standard film	10.4	211 × 158	640 × 480	2	XV-440-10TVB-X-13-1 289799		
		Satin-finish brushed stainless steel	10.4	211 × 158	640 × 480	2	XV-440-10TVB-X-50-1 290436		
	Resistive-touch, absolutely plane (seamless) front	Standard film	10.4	211 × 158	640 × 480	2	XV-430-10TVB-X-13-1 289830		
	IR-Touch (infra-red optical grid), robust, scratch-proof front (laminated safety glass)	Standard film	12.1	246 × 185	800 × 600	2	XV-440-12TSB-X-13-1 289831		
		Satin-finish brushed stainless steel	12.1	246 × 185	800 × 600	2	XV-440-12TSB-X-50-1 290437		
	Resistive-touch, absolutely plane (seamless) front	Standard film	12.1	246 × 185	800 × 600	2	XV-430-12TSB-X-13-1 289832		

Description		For use with	Type Article no.	Price see price list	Std. pack
Memory cards					
small	CompactFlash with operating system	XVH-3.. XV-4..	XT-OS-FLASH-S 290319		1 off
large	CompactFlash with operating system	XVH-3.. XV-4..	XT-OS-FLASH-L 290340		1 off
Communication cards					
–	Multiple protocol board	XV-4..	XT-MPB1-TP 289836		1 off
–	Multiple protocol board MPI	XV-4..	XT-MPB2TP 289837		
–	PROFIBUS-DP master	XV-4..	XT-DPM-MC2 289838		
–	PROFIBUS-DP slave	XV-4..	XT-PDP-TP 289839		
–	CAN communication module	XV-4..	XT-BCP-TP 289850		
–	EPROM DeviceNet for XT-BCP-TP	XV-4..	XT-BCB-TP-EPROM-DNET 289851		
–	EPROM CANOpen for XT-BCB-TP	XV-4..	XT-BCB-TP-EPROM-CANOPEN 289852		
Connection cable					
Ethernet cross-cable for programming					
2 m length	–	XVH-3... XV-4... MC-HPG-... XVC-601-... XCC-601-...	XT-CAT5-X-2 256487		1 off
5 m length	–	XVH-3... XV-4... MC-HPG-... XVC-601-... XCC-601-...	XT-CAT5-X-5 256488		1 off
XV licenses					
–	PLC license	XV400 5.7"	XT-LIC-PLC-XV-SMALL 290438		1 off
–	PLC license	XV400 10.4", 12"	XT-LIC-PLC-XV-MEDIUM 290443		
–	License certificate 40 POINTS	XVH-3.. XV-4..	XT-LIC-OPT-40 290445		
–	License certificate 80 POINTS	XVH-3.. XV-4..	XT-LIC-OPT-80 290447		
Additional fixing clamps					
–	Additional fixing clamps for IP65	XVH-3.. XV-4..	XT-HKS-IP65 292276		1 off

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Licensing HMI-PLC

The range of functions is decided by licence points, which are clearly allocated to the component.

All XV400 components already contain 140 licence points and therefore permit the use as HMI with an external communication, such as SYMArti or CANopen.

Using licence certificates (→ Accessories XV licenses) you can allocate further licence points to the device. The licensing is carried out via www.moeller.net/support. If you enter the licence certificate number and device serial number in the Internet portal, you will receive (via e-mail) a licence code and a confirmation of the licence for your production documentation.

Enter the licence code through the licensing menu in the device, and this will increase the number of internal licence points in the device.

Note:

If the licence point level of the device is inadequate for the required function, the display box of the touch display will prompt you at regular intervals to extend the licence for the device.

Calculation of the required licence points:

Determine the required functions (communication) and add up the licence points needed for these functions. From this sum, deduct the number of licence points (140) already available in the device. The difference is the number of licence points that you need to install through a licence certificate.

Number of licence points for the XV400 devices, depending on the required functionality:

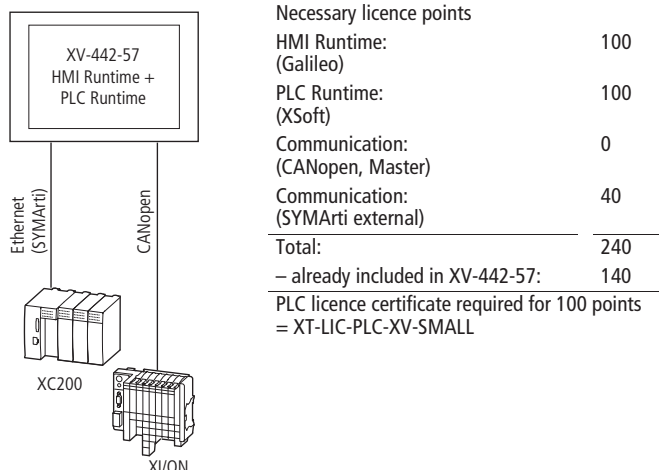
Function	Licence points		
	Runtime	Communication can be used by ...	
HMI (Galileo or EPAM):	100		
PLC (XSoft):	100		
Communication (on board):		PLC XSoft-Professional	HMI XSoft Galileo
			HMI XSoft EPAM ¹⁾
Programming input (Ethernet)		0	0
SYMArti local (PLC ↔ GALILEO/EPAM)		0	0
SYMArti external, (Ethernet)		0	40
MODBUS TCP Client, (Ethernet)		–	80
SUCOM-A, (RS 232)		0	40
MODBUS RTU, (RS 232)		0	40
CANopen, Master		0	–
CANopen, Slave (Device)		0	40
Optional plug-in communication modules (no licence points required):			
XT-MPB1-TP (RS232, TTY, RS485, RS422, RS422 MP) (Suconet K)		–	0
XT-MPB2-TP ((RS232, TTY, RS485, RS422, RS422 MP, MPI)		–	0
XT-PDP-TP (PROFIBUS-DP Slave)		–	0
XT-PDP-TP (PROFIBUS-DP Master)		0	–
XT-BCB-TP + XT-BCB-TP-EPROM-DNET (DeviceNet)		–	0

¹⁾ The communication PLC → EPAM takes place exclusively via SYMArti. Variables that are, for instance, linked via CANopen and declared in the PLC project, can of course also be used via the symbol file (SYMArti local) in EPAM.

The following licence certificates are available, depending on the functionality that is needed:

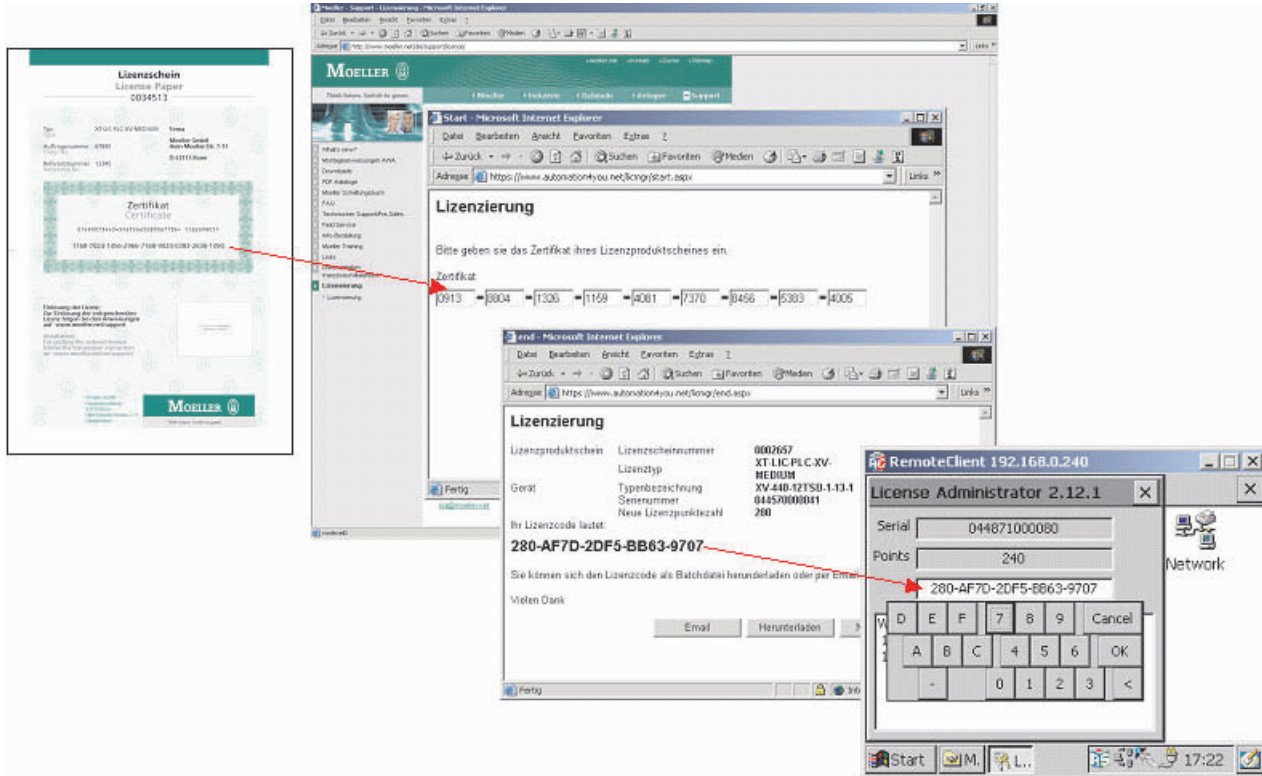
PLC Licence Certificate:		Communication licence certificates:	
XT-LIC-PLC-XV-SMALL	PLC licence (100 licence points), XV-400-5,7"	XT-LIC-OPT-40	40 licence points
XT-LIC-PLC-XV-MEDIUM	PLC licence (100 licence points), XV-400-10,4", 12"	XT-LIC-OPT-80	80 licence points

Example



Cashing in the licence certificates

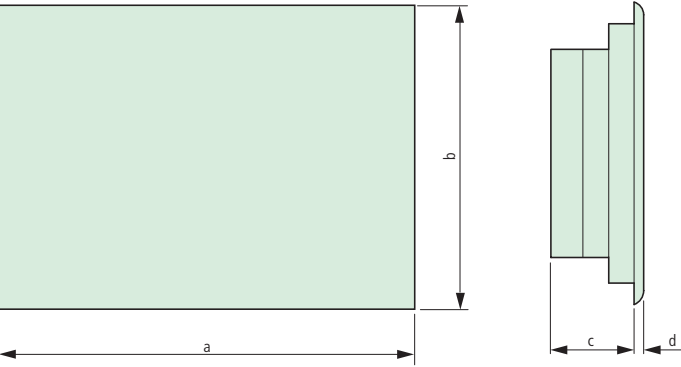
It is really easy to cash in the licence certificates. When the licence certificate number and the device serial number have been entered on the Moeller Internet page www.moeller.net/support, the licence code for enabling the device functionality will be produced promptly. When this licence code has been entered into the XVH-300/XV400, the additional licence points will be added directly to the device.



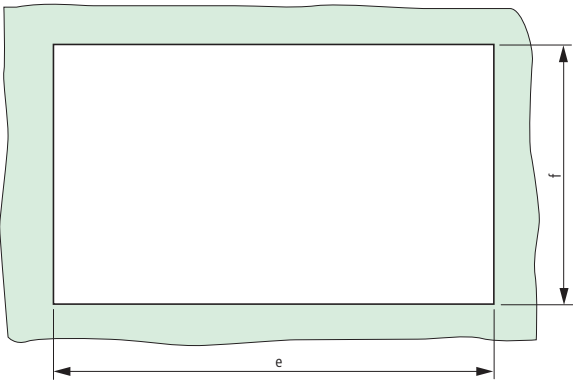
Moeller NK2720-1151				
		XV-442-57CQB-X-13-1	XV-442-57CQB-X-50-1	XV-432-57CQB-X-13-1
General				
Standards		EN 50178		
Ambient temperature	°C	0 / +50	0 / +50	0 / +50
Ambient temperature, storage	°C	-20/60	-20/60	-20/60
Relative humidity, non-condensing (IEC 60 068-2-30)	%	10 – 95	10 – 95	10 – 95
Mechanical shock resistance (IEC 60068-2-27)		15 g/11 ms	15 g/11 ms	15 g/11 ms
Vibrations (IEC/EN 60068-2-6)		10 – 57 Hz (± 0.075 mm), 57 – 150 Hz (± 1 g)		
Electromagnetic com- patibility (EMC)	Emitted interference	EN 61000-6-4		
	Interference immunity	EN 61000-6-2		
Safety ITE (information technology equipment)		EN 60950		
Degree of protection	Front side (with accessory XT-HKS-IP65)	IP65	IP65	IP65
	Rear	IP20	IP20	IP20
Weight	kg	1.6	1.6	1.6
Display				
Screen diagonal	Inch	5.7	5.7	5.7
Type		STN LCD	STN LCD	STN LCD
Resolution	Pixel	320 x 240	320 x 240	320 x 240
Display area	mm	118 x 89	118 x 89	118 x 89
Colours	Qty.	256	256	256
Contrast ratio (normally)		Normally 40	Normally 40	Normally 40
Brightness (normally)	cd/m²	150	150	150
Max. viewing angle		Vertical 70° Horizontal 100°	Vertical 70° Horizontal 100°	Vertical 70° Horizontal 100°
Back-lighting		CCFL	CCFL	CCFL
Service life of back-lighting	Hours of op.	50000	50000	50000
Front				
Type		Laminated safety glass, anti-reflective		Polyester film
Operation				
Technology		Infra-red Touch	Infra-red Touch	Resistive-Touch
Power supply				
Rated voltage	V	24 DC	24 DC	24 DC
Admissible range	V	20.4 – 28.8 DC rms	20.4 – 28.8 DC rms	20.4 – 28.8 DC rms
Voltage dips (IEC/EN 61131-2)	ms	10	10	10
Residual ripple	%	≤ 5	≤ 5	≤ 5
Power consumption	<i>P</i> _{max.} W	19	19	19
Current consumption	A	0.8	0.8	0.8
Protection against polarity reversal		Yes	Yes	Yes
Fuse		Yes, internal fuse		
Potential isolation		No (0V is at housing potential)		
Battery (service life)		>10 years	>10 years	>10 years
PLC (programmable logic controller)				
Processor		RISC, 32 bit, 400 MHz		
Programming		XSoft Professional		
Network variables		Ethernet or CAN		
RTC (real-time clock)		Yes	Yes	Yes
Visualization				
Software		XSoft-Galileo/XSoft-EPAM		
Character sets		Yes, e.g. Chinese, Japanese,...		
Recipes		Yes	Yes	Yes
Password protection		Yes	Yes	Yes
Interfaces/communication				
Programming interface		Ethernet	Ethernet	Ethernet
Ethernet	Data transfer rate	10/100	10/100	10/100
	Connection types	RJ45	RJ45	RJ45
	Potential isolation	Yes	Yes	Yes
RS 232 serial interface	Data transfer rate	115	115	115
	Connection types	CiA, 9-pole Sub-D plug		
	Potential isolation	No	No	No
CANopen	Data transfer rate	125, max. 500	125, max. 500	125, max. 500
	Connection types	CiA, 9-pole Sub-D plug		
	Potential isolation	Yes	Yes	Yes
	Stations	Qty. 64	64	64
Slots for communication cards	Qty.	1	1	1
Slots for CompactFlash cards	Qty.	1	1	1

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XV-440-10TVB-X-13-1	XV-440-10TVB-X-50-1	XV-430-10TVB-X-13-1	XV-440-12TSB-X-13-1	XV-440-12TSB-X-50-1	XV-430-12TSB-X-13-1
EN 50178					
0 / +50	0 / +50	0 / +50	0 / +50	0 / +50	0 / +50
-20/60	-20/60	-20/60	-20/60	-20/60	-20/60
10 – 95	10 – 95	10 – 95	10 – 95	10 – 95	10 – 95
15 g/11 ms	15 g/11 ms	15 g/11 ms	15 g/11 ms	15 g/11 ms	15 g/11 ms
10 – 57 Hz (± 0.075 mm), 57 – 150 Hz (± 1 g)					
EN 61000-6-4					
EN 61000-6-2					
EN 60950					
IP65	IP65	IP65	IP65	IP65	IP65
IP20	IP20	IP20	IP20	IP20	IP20
2.8	2.8	2.8	3.2	3.2	3.2
10.4	10.4	10.4	12.1	12.1	12.1
TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD	TFT LCD
640 × 480	640 × 480	640 × 480	800 × 600	800 × 600	800 × 600
211 × 158	211 × 158	211 × 158	246 × 185	246 × 185	246 × 185
65535	65535	65535	65535	65535	65535
Normally 500	Normally 500	Normally 500	Normally 400	Normally 400	Normally 400
350	350	350	300	300	300
Vertical 100° Horizontal 130°	Vertical 100° Horizontal 130°	Vertical 100° Horizontal 130°	Vertical 90° Horizontal 120°	Vertical 90° Horizontal 120°	Vertical 90° Horizontal 120°
CCFL	CCFL	CCFL	CCFL	CCFL	CCFL
50000	50000	50000	50000	50000	50000
Laminated safety glass, anti-reflective		Polyester film	Laminated safety glass, anti-reflective		Polyester film
Infra-red Touch	Infra-red Touch	Resistive-Touch	Infra-red Touch	Infra-red Touch	Resistive-Touch
24 DC	24 DC	24 DC	24 DC	24 DC	24 DC
20.4 – 28.8 DC rms	20.4 – 28.8 DC rms	20.4 – 28.8 DC rms	20.4 – 28.8 DC rms	20.4 – 28.8 DC rms	20.4 – 28.8 DC rms
10	10	10	10	10	10
≤ 5	≤ 5	≤ 5	≤ 5	≤ 5	≤ 5
34	34	34	34	34	34
1.4	1.4	1.4	1.4	1.4	1.4
Yes	Yes	Yes	Yes	Yes	Yes
Yes, internal fuse					
No (0V is at housing potential)					
>10 years	>10 years	>10 years	>10 years	>10 years	>10 years
RISC, 32 bit, 400 MHz					
XSoft Professional					
Ethernet or CAN					
Yes	Yes	Yes	Yes	Yes	Yes
XSoft-Galileo/XSoft-EPAM					
Yes, e.g. Chinese, Japanese,...					
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
10/100	10/100	10/100	10/100	10/100	10/100
RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
Yes	Yes	Yes	Yes	Yes	Yes
115	115	115	115	115	115
CiA, 9-pole Sub-D plug					
No	No	No	No	No	No
125, max. 500	125, max. 500	125, max. 500	125, max. 500	125, max. 500	125, max. 500
CiA, 9-pole Sub-D plug					
Yes	Yes	Yes	Yes	Yes	Yes
64	64	64	64	64	64
2	2	2	2	2	2
2	2	2	2	2	2

Dimensions



Mounting dimensions



Part no.	a	b	c	d	e	f
XV-4xx-57	212	156	75.5	6	198	142
XV-4xx-10	345	260	88	5	329	238
XV-4xx-12	361	279	88	5	344	262