





X2-BASE-V2 MODELS

The new generation of the X2-BASE line is available in three models, allowing you to choose the best solution for your needs:

X2-BASE-5-V2

- Widescreen color display
- Touchscreen
- 5" LCD-TFT
- 1x RS-232, 1x RS-422/485
- 1x Ethernet port 10/100 BASE-T

X2-BASE-7-V2

- Widescreen color display
- Touchscreen
- 7" LCD-TFT
- 1x RS-232, 1x RS-422/485
- 1x Ethernet port 10/100 BASE-T

X2-BASE-10-V2

- Widescreen color display
- Touchscreen
- 10.1" LCD-TFT
- 1x RS-232, 1x RS-422/485
- 1x Ethernet port 10/100 BASE-T



X2-PRO MODELS

The X2-PRO line is available in 6 models, allowing you to choose the best solution for your needs:

X2-PRO-4

- Widescreen color display
- Touchscreen
- 4.3" LCD-TFT
- 1x RS-232, 2x RS-422/485
- 1x Ethernet port 10/100 BASE-T

X2-PRO-7

- Widescreen color display
- Touchscreen
- 7" LCD-TFT
- 1x RS-232, 2x RS-422/485
- 1x Ethernet port 10/100 BASE-T

X2-PRO-10

- Widescreen color display
- Touchscreen
- 10.1" LCD-TFT
- 1x RS-232, 2x RS-422/485
- 2x Ethernet port 10/100 BASE-T

X2-PRO-12

- Widescreen color display
- Touchscreen
- 12.1" LCD-TFT
- 1x RS-232, 2x RS-422/485
- 2x Ethernet 10/100 BASE-T port

X2-PRO-15

- Widescreen color display
- Touchscreen
- 15.4" LCD-TFT
- 1x RS-232, 2x RS-422/485
- 2x Ethernet 10/100 BASE-T ports

X2-PRO-21

- Widescreen HD color display
- Touchscreen
- 21" LCD-TFT
- 1x RS-232, 2x RS-422/485
- 2x Ethernet 10/100 BASE-T port



WHY X2-BASE?



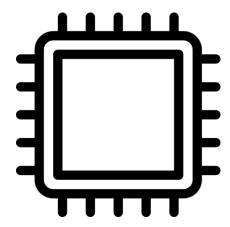
Certified products

All X2 Series products are UL,CE, FCC, and KCC certified.



High protection rating

With a plastic casing and IP65 protection, the HMIs in this line arecorrosion-resistant and resistant to rain, snow, humidity, and dust.



Processing efficiency

The ARM8 processor delivers high performance for smalland medium-sized applications.



Thermal resistance

The products in the BASE line can operate normally attemperatures ranging from -10°C to +50°C.

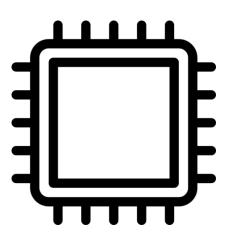


WHY X2-PRO?



Certified products

All X2 Series products are UL, CE, FCC, and KCC certified.UL, CE, FCC, and KCC



High-level processing

With a single or dual core, the powerful ARM Cortex-A8 processor delivers speed and high data processing. The ARM Cortex-A8 processor delivers speed and high data processing.



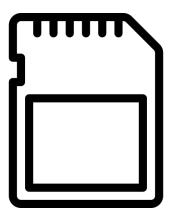
Thermal resistance

PRO line products can operate normally attemperatures ranging from -10°C to +60°C.



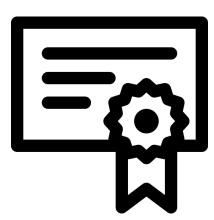
High protection rating

With aluminum housing, IP65 protection rating, NEMA4X/12 and UL Type 4X/12, the PRO line HMIs are resistant to rain, snow, humidity, and dust.



Expansive memory

The PRO line features an SD card and USB connection for memory expansion, project backup, and application loading.



Ready for the sea

Because they meet marine certification requirements (DNV),PRO line products can be used in any type of onboard application, such as platforms or ships.



The main features of the X2 Series are:

- 10/100 BASE-T Ethernet communication interface
- RS-232, RS-422/485, and USB serial communication interfaces
- Long-lasting backlight
- TFT technology for brightness adjustment and high contrast
- Widescreen display with 30% larger usable area
- Solid features that develop and ensure user confidence
- Time optimization with intuitive and versatile editing tools
- Various templates for creating complex and customized applications quickly and easily
- Online and offline simulation, with or without the terminal, allows for reliable testing before going into the field
- Remote access support (VNC)

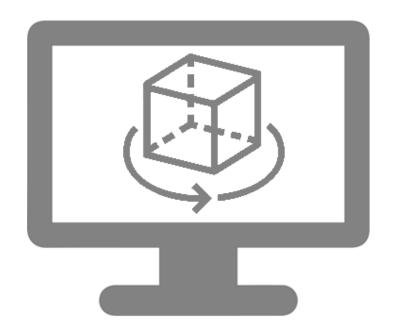
The X2 Series was developed with a distinctive design, combining high quality, robustness, sophistication, and lightness. These results were achieved with an innovative mechanical design, using cast aluminum for the PRO models and PC + ABS for the BASE models, state-of-the-art displays, and superior finish.





SUPERIOR GRAPHICS PROCESSING

- Open and versatile, HMIs feature scalable vector graphics, allowing users to import external objects and components
- The combination of a high-performance processor and advanced development software provides everything you need to bring your application closer to reality



HIGH-PERFORMANCE HARDWARE

- The hardware of the X2 series allows the product to stand out for its engineering and design
- Its advanced features enable quick responses to field use and superior connectivity for data acquisition with automation systems
- The high protection rating (IP) of the X2 Series Human-Machine Interfaces allows them to be used in more severe environments



EXCELLENCE IN DISPLAYS AND TOUCHSCREENS

- The screens and touchscreen devices are unique features of the X2 Series, as they allow for quick interactions with the system and have a long service life
- Completely flat displays, ensuring a dust-free surface and facilitating viewing even in harsh environments
- Equipped with long-lasting backlights, the products also feature TFT technology, which adjusts screen brightness
- Widescreen format that further expands the possibilities for applications with visually complex screens





COMPLIANCE WITH 21 CFR PART 11

- The X2 Series HMIs comply with the 21 CFR Part 11 standard of the FDA, an agency of the U.S. Department of Health and Human Services
- The main objective of the FDA's 21 CFR Part 11 standard is to regulate computerized automation systems in the pharmaceutical industry
- The regulation defines how digital recording systems are considered equivalent to paper records and handwritten signatures





COMPLIANCE WITH 21 CFR PART 11

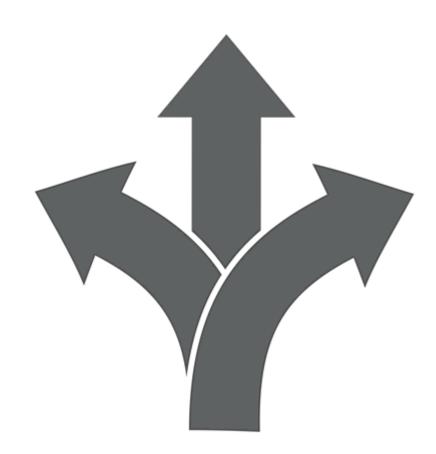
The X2 Series allows the user to build the system in accordance with the requirements of 21 CFR Part 11:

User Management Features	 Individual, password-protected user accounts Password complexity Minimum password length of 8 characters Configurable number of failed attempts User lockout/unlock functionality Password expiration Multiple user levels with user rights 	
Audit Trail	 Non-editable and tamper-proof audit trail data format Time stamp of parameter value changes and users making changes The following audit trail records: User creationUser login/logoutUnsuccessful login attemptsUser blocking/unblocking by the administratorOld and new parameter change valuesThe time stamp for each event: User creation User login/logout Unsuccessful login attempts User blocking/unblocking by the administrator Old and new parameter change values The time stamp for each event 	
System Data and Data Backup	 The HMI offers basic connectivity for data exchange with SCADA/MES/ERP through the following methods: Via OPC UA Via data file transfer Via USB/SD card backup 	
Electronic Data Recording and Storage	 Review of reports on the HMI screen for Production, Alarms, and Audit Trail Storage limit can be interlocked in terms of number of batches produced or percentage of memory consumed 	
Report Generation and Printing Batch data is stored in a secure database format, and the Batch Report can be generated using this Report Frinting: Report printing is offered in several ways: Online printing of alarms, events, and recorded data via serial printer Printing of general reports via USB and network printing		



VERSATILE AND PRACTICAL

- Developed for applications that demand high operational reliability and excellent visual features
- Even in compact formats, the X2 Series HMIs can be used both in industrial processes and by machine manufacturers and in manufacturing automation
- Ideal for the interface between the operator and the automation system, reducing project costs and increasing machine life



CONNECTIVITY WITHOUT BORDERS

- High availability in serial and Ethernet interfaces, allowing users to find various communication options between HMIs and other automation equipment
- Among the main communication drivers available, MODBUS RTU and MODBUS TCP stand out, in addition to the OPC UA client/server architecture
- Using the X2 Series programming software, it is possible to make simple configurations that allow process results to be transformed into reports directly in Microsoft Excel
- It is possible to store momentary plant data in the SQL database, providing a direct link to the company's ERP software





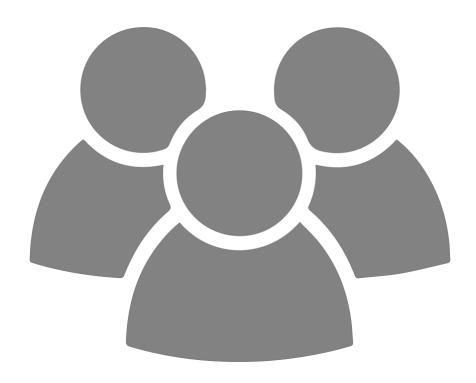
CONNECTIVITY WITHOUT BORDERS

- Simple configuration for data exchange on the network, allowing a direct connection to the application's PLC, without the need for interface devices
- The customer can view application information and screens remotely, via their computer, smartphone, or tablet.
- It is possible to transfer files via FTP (database, alarms, among others), import and export recipes in CSV format via USB or SD card, and integrated Webserver



USER AND RIGHTS MANAGEMENT

- With this feature, different permission levels can be created for user groups
- The developer determines what each user can do in the system and their restrictions
- It is possible to generate, for example, logins for creating and deleting recipes (administrator) or for reading machine recipes (operator)



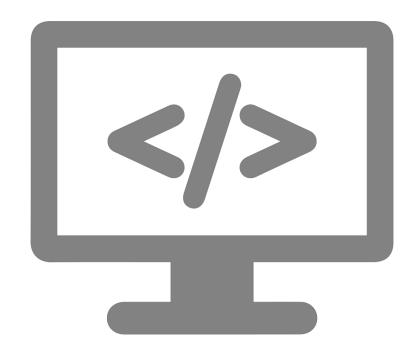
A COMPLETE TOOL

- Fast, intuitive, and comprehensive, the X2 Series HMIs offer new and efficient ways to develop your application
- Among other unique features of the development software are characteristics such as improved handling of large projects, a zoom screen explorer, simultaneous object creation, one-click object configuration, and automatic application alignment
- Customers can also save configuration time with the Alias function, which allows quick and easy reuse of screens without the need for duplication
- To complement this tool, all these features are available in multilingual software with an integrated help environment



PROGRAMMING RESOURCES

- Users can leverage open technologies to improve application performance, using controls that support Microsoft .NET languages in integration with the Microsoft .NET Framework
- Its graphics system uses Microsoft WPF technology to create complete user interfaces with real-time mapping of process values and tags



SIMULATION

- The programming tool is available for users to test the functionality of their application
- With it, customers can simulate, debug, and evaluate their project before it is sent to the hardware
- This allows errors to be anticipated in the planning and specification stages, reducing the risk of failure in engineering projects



DESIGNED FOR YOUR CHALLENGES

- All the features that make up the X2 Series HMIs make them the best solutions available on the market for any type of application
- Requiring less investment in engineering hours, the resources allow for the development of modular software, enabling the replication of projects and increased returns
- Intuitive and user-friendly, the X2 Series HMIs deliver a range of great advantages for users.





	BASE-5-V2	BASE-7-V2	BASE-10-V2		
Screen size	5"	7"	10,1"		
Screen resolution	800x480 pixels	800x480 pixels	1024x600 pixels		
Display		LCD-TFT			
Screen colors	16,7M	16M	16,7M		
Backlight Type	LED				
Backlight lifespan	20.000h	20.000h	30.000h		
Indicator LEDs	1 (bicolor)				
Touchscreen	Resistive				
Touchscreen lifespan	1 million touches				
Application memory	2 GB SSD, 1.5 GB free for application				
RAM memory	512 MB				
Memory card support		No			



		BASE-5-V2	BASE-10-V2				
Real-time clock			yES				
	COM1	RS-232 (RTS/CTS)					
	COM2		RS-422 / RS-485				
Communication	COM3		RS-485 (only if COM2 is 485)				
port	COM4	-	-	-			
	COM5	-	-	-			
	сом6	RS-485					
USB 2.0 port		1 (500 mA)					
10/100 BASE-T Et	thernet port	1					
Front Panel (WxF	lxD)	172x109x37 mm 202x152x37 mm 290x193x40					
Panel cutout dim	ensions (WxH)	161x93mm	161x93mm 186x136mm				
Mounting depth (clearance		32 mm 32 mm 35		35 mm			
area)		(132mm)	(132 mm)	(135 mm)			
Tensão de alimentação			24Vdc				
			(18 to 32Vdc)				



	BASE-5-V2	BASE-7-V2	BASE-10-V2		
Maximum power dissipation	4,8W	5,6W	6,9W		
Internal fuse		3A			
Front protection		IP65			
Rear protection IP20		Yes			
Operating temperature	-10 to 50ºC				
Storage temperature	-20 to 60ºC				
Humidity without condensation	5 to 90%				
Material of mechanical parts	PC+ABS				
Weight	0,32kg	0,56kg	0,84kg		
Combifications		UL61010-2-201			
Certifications		CE, FCC, KCC			



X2-PRO

	PRO-4	PRO-7	PRO-10	PRO-12	PRO-15	PRO-21
Screen size	4,3"	7"	10,1"	12,1"	15,4"	21,5"
Screen resolution	480x282 (16:9)	800x480 (16:9)	1024x600 (16:9)	1280x800 (16:9)	1280x800 (16:9)	1920x1080 (16:9 HD)
Display			LCD	-TFT		
Screen colors	64	4k	262k			
Backlight Type		50.000h				
Backlight lifespan	1 (Multicolor)					
Indicator LEDs	Resistive					
Touchscreen	1 million touches					
Touchscreen lifespan	2GB SSD, 1.5GB free for application					
Application memory	512MB 1GB				2GB	
RAM memory	Yes (SD and SDHC)					



X2-PRO

		PRO-4	PRO-7	PRO-10	PRO-12	PRO-15	PRO-21
Real-time clock		Yes					
	COM1		RS-232 (RTS/CTS)				
Communication port	COM2			RS-422 /	/ RS-485		
port	COM3			RS-485 (only if	COM2 is 485)		
USB 2.0 port		1 (500	0 mA)		2 (50	0 mA)	
10/100 BASE-T Ethe	rnet port	3	1		2	2	
Front Panel (WxHxD))	145x104x7mm	204x143x7mm	292x194x7mm	340x242x8mm	410x286x8mm	556x347x8mm
Panel cutout dimens	sions (WxH)	130x89mm	189x28mm	275x177mm	324x226mm	394x270mm	539x331mm
		43mm		45mm	49mm	53mm	57mm
Mounting depth (clearance area)		(143mm) (145mm) (149mm) (153mm) (1			(157mm)		
Tanasa da alimantassa		24Vdc					
Tensão de alimentação			(18 to 32Vdc)				



X2-PRO

	PRO-4	PRO-7	PRO-10	PRO-12	PRO-15	PRO-21
Maximum power dissipation	12W	14,4W	21,6W	28,8W	31,2W	45,6W
Internal fuse	3,1	.4A		4.	A	
Front protection	IP66		IP(65		IP66
Rear protection IP20	Yes					
Operating temperature	-10 to 60°C					
Storage temperature	-20 to 70°C					
Humidity without condensation	5 to 85%					
Material of mechanical parts		Aluminum				
Weight	0,5kg	0,8kg	1,65kg	2,6kg	3,85kg	3,85kg
Certifications	UL61010-2-201					
Certifications	CE, FCC, KCC, DNV, KR, GL, LR, ABS, CCS		CS			





IX DEVELOPER

PROGRAMMING SOFTWARE

The X2 Series operator terminals are programmed using iX Developer software.

The tool offers new features, provides a wide range of objects and functions, including a simulator, and allows users to develop their applications without having to communicate with the terminal during programming.



Note: this software is not included with the operating terminal and is supplied separately.



IX DEVELOPER

STATE-OF-THE-ART GRAPHICS

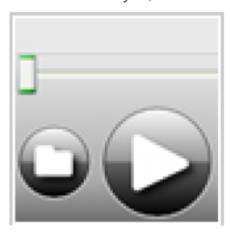
Vector Graphics

 Rotation and resizing do not affect image quality.



Windows Media Objects

• Using files through Internet Explorer, Windows Media Player, and PDF Viewer



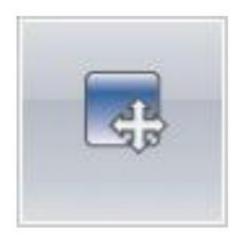
Effects Graphics

• Shadows, reflections, high relief, etc.



Dynamic Objects

• They draw the operator's attention to the HMI by changing color, size, visibility, etc., based on information from the controller.



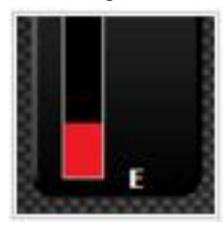


IX DEVELOPER

STATE-OF-THE-ART GRAPHICS

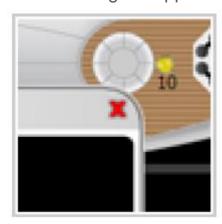
Component Library

• Library of symbols and components used in a wide range of industrial applications



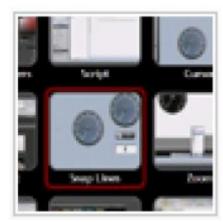
Pop-up Window

• Multiple screens open at the same time, increasing the application's possibilities



Navigation Control

• Navigating between screens using thumbnails



Styles

Modification and standardization of objects using the Style feature, similar to MS Office





SOFTWARE FEATURESDE SOFTWARE

SOFTWARE FEATURES

	X2-BASE-5-V2, BASE-7-V2 e BASE-10-V2		
Network functions	Sending emails (SMTP client) Web server Remote operation via the Internet Remote system access (VNC) File transfer via FTP		
Dual driver with data exchange	Yes		
Multilingual applications	Yes		
Special characters	Yes, it allows accents and UNICODE characters.		
Character types and sizes	Supports any font from the Windows operating system		
Passwords	Up to 31 security groups		
Alarms	It has functions for monitoring and recording alarms.		
Data logger	Yes		
Trend charts	Yes		
Timing functions	Yes		
Script	Yes		
SQLite database	Yes		
Expressions in tags	Yes		



SOFTWARE FEATURES

X2-BASE and X2-PRO

	X2-BASE	X2-PRO
Number of Tags	1000	2000
Number of active communication controllers	3	10
Number of Data Loggers	10	25
Number of items in the Database object	50	700
Number of items in Alarm	150	500
Number of lines in the Alarm object display	100	200
Maximum number of lines in the alarm event display in the Database object	500	1000
Screens	100	500
Objects on the screen	150	400
Items in a recipe	256	256

To optimize performance, it is recommended to limit the number of items in the project. The recommended limits depend on the type of HMI and are listed in the table above.



COMMUNICATION DRIVERS

ABB	COMLI Master
ADD	COMLI Slave
	DF1
	DH485
Allen Brandley	MicroLogix Ethernet
	SLC5/PLC5 Ethernet
	Ethernet/IP
Altus	Alnet I MODBUS RTU/TCP Facon (FBS)
Animatics	SmartMotor
Dooldooff	ADS
Beckhoff	ADS Symboilic
Beijer Electronics	Macro Controller
Bernecker + Rainer	Mininet
Boch Rexroth	IndraDrive C
CACTUS	CACTUS ASCII

CAN	CAN Open
CAN	Free CAN
CaDaSys	CoDeSys ArtI
CoDeSys	SoftControl Direct Access
Cognex	In-Sight
Control Techniques	Unidrive
СТС	CTC Serial Binary
Delta	Delta PLC Modbus ASCII
Delta Tau	PMAC/UMAC
DEMO	Demo
Emerson	Modbus Master RTU/ASC II
Eurotherm	Easy Serial 631
Fatek	Facon
G & L Motion Control	Motion Control
Galil	Galil DMC



GE	GE TCP/IP via SRTP
OL.	GE Fanuc SNPX
Hitachi	H-COMM
IAI	X-SEL
IDEC	Computer Link
J1939	J1939
Johnson Controls	JCONTROL
KEB	COMBIVERT
KEYENCE	KV-Series
	DirectNET
Koyo	K-Sequence
	ECOM
Lenze	LECON A/B
LS	LS Gofla
	LS master K

MATSUSHITA	MEWTOCOL-COM
MELSEC	A-Series (C24)
	A-Series (E71)
	Alpha2
	A-Series (CPU)
	Freqrol FR-A PLC
	FX Series ADP/BD
	FX ENET
	FX Series Serial
	FX3U Ethernet
	MC Protocol
	QnA/Qnn Serial
	QnA/Qnn Profibus DP
	QnA/Qnn Series (C24)
	Q-Series (E71) Ethernet



MELSERVO	MR-J2/MR-J3-T
MODCON	Modbus Master RTU/ASC II
	Modbus Slave RTU/TCP
NMEA 0183	NMEA 0183
OMRON	OMRON FINS
	Host Link
	Ethernet IP
PROFIBUS	Profibus DP
Regin	ExOline
SAIA	S-bus Serial/Ethernet
Schneider Electric	Uni-Telway
	Modbus

SIMATIC	S7 MPI Direct
	S7 ISO TCP
	S5 PG/AS511
	S7 200 PPI
	S7 MPI (EM)
	S7 MPI (HMI Adapter)
	TI500
VIGOR	Vigor M/VB-Series
	Vigor VS Series
WAGO	Modbus TCP
YAMAHA	YAMAHA VIP
Yaskawa	Memobus Master



Yokogawa	FA-M3 Serial/Ethernet
SIMATIC	S7 MPI Direct
	S7 ISO TCP
	S5 PG/AS511
	S7 200 PPI
	S7 MPI (EM)
	S7 MPI (HMI Adapter)
	TI500
VIGOR	Vigor M/VB-Series
	Vigor VS Series
WAGO	Modbus TCP
YAMAHA	YAMAHA VIP
Yaskawa	Memobus Master
Yokogawa	FA-M3 Serial/Ethernet



