X2 extreme

Rugged HMIs for tough environments

X2 extreme panels are certified by all major classification societies. Designed to perform in rugged environments and in hazardous areas where gases, vapors and dust are present. Extended environmental capabilities include operating temperatures from -30°C to +70°C, high vibrations and high-pressure wash-downs.

X2 extreme panels are available in 7, 12 and 15 inches, all in 3 versions: Standard versions, high-performance versions and fully sealed high-performance versions. The high-performance and fully sealed high-performance versions both offer high brightness display and optional integrated CODESYS PLC functionality.
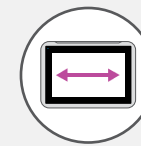
Features X2 extreme

Wide screen format
X2 panels offer wide screen format, designed to succeed the traditional 4:3 square aspect ratio.

UL, CE, FCC and KCC certificates
The entire X2 range offers a strong standard certification with UL, CE, FCC and KCC certificates.

iX software – why you'll love our hardware
The iX software gives you smart communication tools. iX combines top-class vector graphics and easy-to-use functions that provide reliable operation, and almost limitless connectivity to your other equipment.

Fast forward engineering with WARP
Create integrated HMI, control, drives and data communication solutions with WARP Engineering Studio. WARP automatically configures all hardware, software and communication in your application.

Custom design or non-branded
Profile your brand or go for neutral. X2 panels offer custom designed or non-branded front foils, as alternatives to the standard Beijer Electronics branded versions.
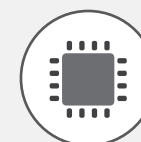
Powerful ARM Cortex-A9 processor
Powerful dual or quad core ARM Cortex-A9 processor delivers fast screen changes and program demanding applications.

Robust aluminum housing
Robust aluminum housing with IP66, NEMA 4X/12 and UL Type 4X/12 front. Resistant to direct rain, snow or high-pressure wash-downs, dirt, grime and dust.

Extreme operating temperature -30°C to +70°C
Extreme -30°C to +70° C operating temperature range guarantees trouble-free use in the harshest environments.

Marine certifications
The X2 panels meet extended classes of marine certifications not normally carried by HMIs, making them suitable for all onboard locations.

Integrated CAN bus
It's easy to interface with controllers using the integrated CAN bus.

SD memory card
Card holder and USB connection are located behind the lid on the back of the panel for smart memory expansion, project backup and application loading.

Dimmable backlight
Comfortable and safe operation in high and low ambient light conditions. Backlight is continuously dimmable to less than one cd/m².

High brightness display
The high-performance and fully sealed versions feature 1,000 cd/m² backlight providing excellent readability in high ambient light levels such as sunlight.

Add control by CODESYS
The high-performance and sealed versions offer integrated CODESYS IEC 61131-3 PLC functionality running on dedicated CPU cores for safe and fast program execution. Just add remote I/Os for a scalable, cost-effective solution.

Certified for hazardous environments
Certified for use in hazardous areas where gases, vapors and dust are present.

Internal isolation
Internal isolation conforms to marine standards for both burst and surge immunity.

High vibration
Panels are tested to 4 g RMS sweep sine for vibration and 40 g 11 ms half sine for shock.

Extensive testing
We perform extensive testing to ensure our panels meet high environmental standards and guarantee reliable operation in challenging environments.
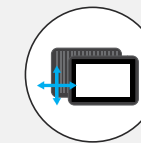
Fully sealed
Fully sealed versions with M12 connectors hold IP66, NEMA 4X/12 and UL Type 4X/12 ingress protection rating for the entire product and conform to ATEX Zone 2 and ATEX Zone 22 certification.

X2 extreme is scheduled for release in Q3 2017.

Technical data - X2 extreme

Standard versions, high performance versions (HP) and high-performance versions with integrated CODESYS PLC functionality (HP SC)

	X2 extreme 7	X2 extreme 7 12V	X2 extreme 7 HP (HP SC)
General description			
Part number	640013905	640014005	640014105 (HP SC: 640016005)
Warranty	2 year		
Certifications *			
General	CE, FCC, KCC, UL 61010-2-201		
Hazardous	UL Class I Div 2, ATEX/IECEx Zone 2,22		
Marine	DNV, KR, GL, LR, ABS, CCS		
Mechanical			
Mechanical size	204 x 143 x 62mm		
Touch type	Resistive		
Touch surface	Polyester on glass, ITO film		
Touch operations	1million finger touch operations		
Cut-out size	189 x 128mm		
Weight	0.8 kg		
Housing material	Powder-coated aluminum, Black		
Power			
Input voltage	24 V DC (18 to 32 VDC)	12 V DC (9 to 16 VDC)	24 V DC (18 to 32 VDC)
Power consumption, max	13W	14W	20W (HP SC: 20W)
Input fuse	Internal DC fuse		
System			
CPU	i.MX6DualLite, Dual Cortex-A9 800MHz 512kBL2cache		i.MX6Quad, Quad ARMCortex-A9 1.0GHz 1MBL2cache
RAM	1 GB		2 GB
FLASH	2GB SSD(eMMC), 1.5GB free for application		
Display			
Size diagonal	7" diagonal		
Resolution	800x480 pixels		
Backlight	LED Backlight		
Backlight life time	50 000 hours		100 000 hours
Backlight brightness	500 cd/m²		1 000 cd/m²
Backlight dimming	Marine optimized dimming, down to 0,5 cd/m²		
Display type	TFT-LCD with LED backlight		
Softcontrol			
CODESYS runtime version	NA		NA (HP SC: 3.5)
CODESYS EtherCAT	NA		NA (HP SC: Yes)
CODESYS Modbus Ethernet	NA		NA (HP SC: Yes)
CODESYS Modbus RTU	NA		NA (HP SC: Yes)
Non volatile variables	NA		NA (HP SC: Yes)
Communication serial			
Number of serial ports	1 Port 9pin DSUB		2 Port 9pin DSUB
Serial port 1	RS232 (RTS/CTS)		
Serial port 2	RS422/RS485/CAN		
Serial port 3	NA		RS485/CAN
Ethernet communication			
Number of Ethernet ports	1		2
Ethernet port 1	1x10/100 Base-T (shielded RJ45)		
Ethernet port 2	NA		1x10/100 Base-T (shielded RJ45)
Expansion interface			
Expansion port			
SD card	SD and SDHC		
USB	2xUSB 2.0 500mA		
Environmental			
Operating temperature	-30°C to +70°C		
Storage temperature	-40°C to +80°C		
Shock	40g, half-sine, 11ms according to IEC60068-2-27		
Vibration	4g, according to IEC 60068-2-6, Test Fc		
Sealing front	IP66, NEMA 4X/12 and UL Type 4X/12		
Sealing back	IP20		
Humidity	5% – 95% non-condensed		

	X2 extreme 12	X2 extreme 12 HP (HP SC)	X2 extreme 15	X2 extreme 15 HP (HP SC)
	640014305	640014405 (HP SC: 640016405)	640014605	640014705 (HP SC: 640016805)
	2 year		2 year	
	CE, FCC, KCC, UL 61010-2-201		CE, FCC, KCC, UL 61010-2-201	
	UL Class I Div 2, ATEX/IECEx Zone 2,22		UL Class I Div 2, ATEX/IECEx Zone 2,22	
	DNV, KR, GL, LR, ABS, CCS		DNV, KR, GL, LR, ABS, CCS	
	340 × 242 × 69mm		410 × 286 × 73mm	
	Resistive		Resistive	
	Polyester on glass, ITO film		Polyester on glass, ITO film	
	1million finger touch operations		1million finger touch operations	
	324 × 226mm		394 × 270mm	
	2.8 kg		4.1 kg	
	Powder-coated aluminum, Black		Powder-coated aluminum, Black	
	24 V DC (18 to 32 VDC)		24 V DC (18 to 32 VDC)	
	19W	27W (HP SC: 27W)	21W	32W (HP SC: 32W)
	Internal DC fuse		Internal DC fuse	
	i.MX6DualLite, Dual Cortex-A9 800MHz 512kBL2cache	i.MX6Quad, Quad ARMCortex-A9 1.0GHz 1MBL2cache	i.MX6DualLite, Dual Cortex-A9 800MHz 512kBL2cache	i.MX6Quad, Quad ARMCortex-A9 1.0GHz 1MBL2cache
	1 GB	2 GB	1 GB	2 GB (HP SC: 2 GB)
	2GB SSD(eMMC), 1.5GB free for application		2GB SSD(eMMC), 1.5GB free for application	
	12.1" diagonal		15.4" diagonal	
	1280×800 pixels		1280×800 pixels	
	LED Backlight		LED Backlight	
	100 000 hours		50 000 hours	
	500 cd/m²	1 000 cd/m²	450 cd/m²	1 000 cd/m²
	Marine optimized dimming, down to 0,5 cd/m²		Marine optimized dimming, down to 0,5 cd/m²	
	TFT-LCD with LED backlight		TFT-LCD with LED backlight	
	NA	NA (HP SC: 3.5)	NA	NA (HP SC: 3.5)
	NA	NA (HP SC: Yes)	NA	NA (HP SC: Yes)
	NA	NA (HP SC: Yes)	NA	NA (HP SC: Yes)
	NA	NA (HP SC: Yes)	NA	NA (HP SC: Yes)
	NA	NA (HP SC: Yes)	NA	NA (HP SC: Yes)
	1 Port 9pin DSUB	2 Port 9pin DSUB	1 Port 9pin DSUB	2 Port 9pin DSUB
	RS232 (RTS/CTS)		RS232 (RTS/CTS)	
	RS422/RS485/CAN		RS422/RS485/CAN	
	NA	RS485/CAN	NA	RS485/CAN
	1	2	1	2
	1×10/100 Base-T (shielded RJ45)		1×10/100 Base-T (shielded RJ45)	
	NA	1×10/100 Base-T (shielded RJ45)	NA	1×10/100 Base-T (shielded RJ45)
	SD and SDHC		SD and SDHC	
	2×USB 2.0 500mA		2×USB 2.0 500mA	
	-30°C to +70°C		-30°C to +70°C	
	-40°C to +80°C		-40°C to +80°C	
	40g, half-sine, 11ms according to IEC60068-2-27		40g, half-sine, 11ms according to IEC60068-2-27	
	4g, according to IEC 60068-2-6, Test Fc		4g, according to IEC 60068-2-6, Test Fc	
	IP66, NEMA 4X/12 and UL Type 4X/12		IP66, NEMA 4X/12 and UL Type 4X/12	
	IP20		IP20	
	5% – 95% non-condensed		5% – 95% non-condensed	

*Certifications pending. Please refer to www.beijerelectronics.com/x2 for detailed status.

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Technical data - X2 extreme

Fully sealed high-performance versions (SL HP) and fully sealed high-performance versions with integrated CODESYS PLC functionality (SL HP SC)

	X2 extreme 7 SL HP	X2 extreme 7 SL HP SC
General description		
Part number	640014205	640016205
Warranty	2 year	
Certifications *		
General	CE, FCC, KCC, UL 61010-2-201	
Hazardous	UL Class I Div 2, ATEX/IECEx Zone 2,22	
Marine	DNV, KR, GL, LR, ABS, CCS	
Mechanical		
Mechanical size	205 × 160 × 65mm	
Touch type	Resistive	
Touch surface	Polyester on glass, ITO film	
Touch operations	1million finger touch operations	
Weight	1.6 kg	
Housing material	Powder-coated aluminum, Black	
Power		
Input voltage	24 V DC (18 to 32 VDC)	
Power consumption, max	20 W	
Input fuse	Internal DC fuse	
System		
CPU	i.MX6Quad, Quad ARMCortex-A9 1.0GHz 1MBL2cache	
RAM	2 GB	
FLASH	2GB SSD(eMMC), 1.5GB free for application	
Display		
Size diagonal	7" diagonal	
Resolution	800×480 pixels	
Backlight	LED Backlight	
Backlight life time	100 000 hours	
Backlight brightness	1 000 cd/m²	
Backlight dimming	Marine optimized dimming, down to 0,5 cd/m²	
Display type	TFT-LCD with LED backlight	
Softcontrol		
CODESYS runtime version	NA	3.5
CODESYS EtherCAT	NA	Yes
CODESYS Modbus Ethernet	NA	Yes
CODESYS Modbus RTU	NA	Yes
Non volatile variables	NA	Yes
Communication serial		
Number of serial ports	2 Port 8pin M12	
Serial port 1	RS232 (RTS)	
Serial port 2	RS422/RS485/CAN	
Serial port 3	RS485/CAN	
Ethernet communication		
Number of Ethernet ports	2x4pinM12	
Ethernet port 1	1×10/100 Base-T (M12)	
Ethernet port 2	1×10/100 Base-T (M12)	
Expansion interface		
Expansion port		
SD card	SD and SDHC	
USB	2xUSB 2.0 500mA	
Environmental		
Operating temperature	-30°C to +70°C	
Storage temperature	-40°C to +80°C	
Shock	40g, half-sine, 11ms according to IEC60068-2-27	
Vibration	4g, according to IEC 60068-2-6, Test Fc	
Sealing front	IP66, NEMA 4X/12 and UL Type 4X/12	
Sealing back	IP66, NEMA 4X/12 and UL Type 4X/12	
Humidity	5% – 95% non-condensed	

	X2 extreme 12 SL HP	X2 extreme 12 SL HP SC	X2 extreme 15 SL HP	X2 extreme 15 SL HP SC
General description				
Part number	640014505	640016605	640014805	640017005
Warranty	2 year		2 year	
Certifications *				
General	CE, FCC, KCC, UL 61010-2-201		CE, FCC, KCC, UL 61010-2-201	
Hazardous	UL Class I Div 2, ATEX/IECEx Zone 2,22		UL Class I Div 2, ATEX/IECEx Zone 2,22	
Marine	DNV, KR, GL, LR, ABS, CCS		DNV, KR, GL, LR, ABS, CCS	
Mechanical				
Mechanical size	341 × 243 × 65mm		410 × 286 × 65mm	
Touch type	Resistive		Resistive	
Touch surface	Polyester on glass, ITO film		Polyester on glass, ITO film	
Touch operations	1million finger touch operations		1million finger touch operations	
Weight	3.4 kg		4.8 kg	
Housing material	Powder-coated aluminum, Black		Powder-coated aluminum, Black	
Power				
Input voltage	24 V DC (18 to 32 VDC)		24 V DC (18 to 32 VDC)	
Power consumption, max	27 W		32 W	
Input fuse	Internal DC fuse		Internal DC fuse	
System				
CPU	i.MX6Quad, Quad ARMCortex-A9 1.0GHz 1MBL2cache		i.MX6Quad, Quad ARMCortex-A9 1.0GHz 1MBL2cache	
RAM	2 GB		2 GB	
FLASH	2GB SSD(eMMC), 1.5GB free for application		2GB SSD(eMMC), 1.5GB free for application	
Display				
Size diagonal	12.1" diagonal		15.4" diagonal	
Resolution	1280x800 pixels		1280×800 pixels	
Backlight	LED Backlight		LED Backlight	
Backlight life time	100 000 hours		50 000 hours	
Backlight brightness	1 000 cd/m²		1 000 cd/m²	
Backlight dimming	Marine optimized dimming, down to 0,5 cd/m²		Marine optimized dimming, down to 0,5 cd/m²	
Display type	TFT-LCD with LED backlight		TFT-LCD with LED backlight	
Softcontrol				
CODESYS runtime version	NA	3.5	NA	3.5
CODESYS EtherCAT	NA	Yes	NA	Yes
CODESYS Modbus Ethernet	NA	Yes	NA	Yes
CODESYS Modbus RTU	NA	Yes	NA	Yes
Non volatile variables	NA	Yes	NA	Yes
Communication serial				
Number of serial ports	2 Port 8pin M12		2 Port 8pin M12	
Serial port 1	RS232 (RTS)		RS232 (RTS)	
Serial port 2	RS422/RS485/CAN		RS422/RS485/CAN	
Serial port 3	RS485/CAN		RS485/CAN	
Ethernet communication				
Number of Ethernet ports	2×4pinM12		2x4pinM12	
Ethernet port 1	1×10/100 Base-T (M12)		1×10/100 Base-T (M12)	
Ethernet port 2	1×10/100 Base-T (M12)		1×10/100 Base-T (M12)	
Expansion interface				
Expansion port				
SD card	SD and SDHC		SD and SDHC	
USB	2xUSB 2.0 500mA		2xUSB 2.0 500mA	
Environmental				
Operating temperature	-30°C to +70°C		-30°C to +70°C	
Storage temperature	-40°C to +80°C		-40°C to +80°C	
Shock	40g, half-sine, 11ms according to IEC60068-2-27		40g, half-sine, 11ms according to IEC60068-2-27	
Vibration	4g, according to IEC 60068-2-6, Test Fc		4g, according to IEC 60068-2-6, Test Fc	
Sealing front	IP66, NEMA 4X/12 and UL Type 4X/12		IP66, NEMA 4X/12 and UL Type 4X/12	
Sealing back	IP66, NEMA 4X/12 and UL Type 4X/12		IP66, NEMA 4X/12 and UL Type 4X/12	
Humidity	5% – 95% non-condensed		5% – 95% non-condensed	

Certifications pending. Please refer to www.beijerelectronics.com/x2 for detailed status.

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**Use the migration tables to find the right panel when you want
to upgrade your existing iX HMI solution to the X2 panel series.**

From QTERM-Ax to X2 extreme

QTERM panel	X2 panel	Comment
QTERM-A7 iX	X2 extreme 7	Different cut-out size
QTERM-A7 Qlarity	X2 extreme 7	Different cut-out size, new HMI software
QTERM-G72	X2 extreme 7	Different cut-out size, new HMI software
QTERM-A12 iX	X2 extreme 12	Different cut-out size, different aspect ratio
QTERM-A12 Qlarity	X2 extreme 12	Different cut-out size, different aspect ratio, new HMI software

From iX TxBR to X2 extreme

iX TxBR panel	X2 panel	Comment
iX T7BR	X2 extreme 7	-
iX T7BR HB HP	X2 extreme 7 HP	-
-	X2 extreme 7 SL HP	New 7-inch rugged fully sealed high-performance panel
-	X2 extreme 7 HP SC	New 7-inch rugged high-performance panel with integrated control
-	X2 extreme 7 SL HP SC	New 7-inch rugged fully sealed high-performance panel with integrated control
iX T15BR	X2 extreme 15	-
iX T15BR HB HP	X2 extreme 15 HP	-
-	X2 extreme 15 SL HP	New 15-inch rugged fully sealed high-performance panel
-	X2 extreme 15 HP SC	New 15-inch rugged high-performance panel with integrated control
-	X2 extreme 15 SL HP SC	New 15-inch rugged fully sealed high-performance panel with integrated control

QTERM-Ax

COM 1:
RS232 or
RS485 or
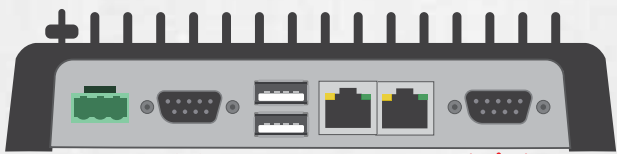RS422

COM 2:
RS232

TxBR

COM 1:
RS232

COM 2:
RS485 or
RS422

X2 extreme x HP, HC
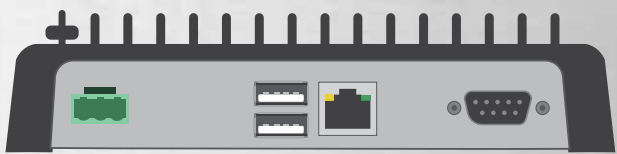
COM 3:
RS485

CAN**:
CAN2
Isolated

Com1:
RS232

Com2:
RS422 or
RS485

CAN*:
CAN1

*CAN1 can only be used if COM2 is not used
**CAN2 can only be used if COM3 is not used

X2 extreme x

Com1:
RS232

Com2:
RS422
or
RS485

Com3*:
RS485

CAN**:
CAN1
CAN2

*COM3 can only be used if COM2 is RS485
**CAN1 can only be used if COM2 is not used
**CAN2 can only be used if COM3 is not used

X2 panels are software compatible with iX 2.20 SP2 and forwards. Watch
the video on www.beijerelectronics.com/X2 to see how easily you update
an existing iX application to an X2 panel.

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• OPC DA communication is not supported in X2 platform
• Change to OPC UA instead

OPC UA

About Beijer Electronics

Beijer Electronics is a fast growing technology company with extensive experience of industrial automation and data communication. The company develops and markets competitive products and solutions that focus on the user. Since its start-up in 1981, Beijer Electronics has evolved into a multinational group with sales over 1.1 billion SEK 2016. The company is listed on the NASDAQ OMX Nordic Stockholm Small Cap list under the ticker BELE. www.beijerelectronics.com

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