

X2 marine

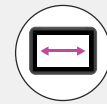
Built for life at sea

X2 marine offers user-friendly, reliable operation offshore, on ships and in other maritime applications. With black frame and nautical society certifications, X2 marine panels are suitable for mounting on the bridge, in the engine room and inside cabins. X2 marine panels are available with optional high brightness display and integrated CODESYS PLC functionality.

X2 marine panels are available in 7 and 15 inches with optional high brightness display and integrated CODESYS-based PLC functionality.



Features X2 marine



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



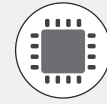
UL, CE, FCC and KCC certificates
The entire X2 range offers a strong standard certification with UL, CE, FCC and KCC certificates.



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.



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 single, dual or quad core ARM Cortex-A9 processor delivers fast screen changes and program execution in demanding applications.



Robust aluminum housing
Robust aluminum housing with IP65, NEMA 4X/12 and UL Type 4X/12 front. Resistant to direct rain, snow or wash-downs, dirt, grime and dust.



Wide operating temperature -10°C to +60°C
The wide -10° to +60°C operating temperature range satisfies the demands of most industries.



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



Internal CANopen and optional bus modules
It's easy to interface with controllers using the internal CANopen bus or optional CiX CAN, Profibus or MPI modules.



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.



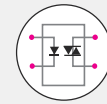
Dimmable backlight
Comfortable and safe operation in high and low ambient light. Backlight is continuously dimmable to very low brightness.



High brightness display
Optional 1,000 cd/m² backlight provides excellent readability in high ambient light levels such as sunlight.



Add control by BCS Tools
BCS Tools is the CODESYS-based software platform enabling SC versions to perform powerful integrated IEC 61131-3 PLC functionality. Just add remote I/Os for a scalable, cost-effective solution.



Built-in digital outputs
X2 marine panels with high brightness option have built-in digital outputs for direct connection of alarms, signal lights, etc.



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



See page 21 for technical data.



	X2 base 5 v2*	X2 base 7 v2 (HP)*	X2 base 10 v2 (HP)*	X2 base 15 v2 (HP)*
General description				
Part number	630005110	630005210 (630009510)	630005310 (630009610)	630009810
Warranty	2 year			
Certifications				
General	CE, FCC, KCC, UL 61010-2-201			
Mechanical				
Mechanical size	173 x 109 x 37mm	202 x 152 x 37mm	290 x 193 x 40mm	409 x 270 x 43mm
Mounting option	Panel Mount			
Number of touches	1million finger touch operations			
Touch type	Resistive			
Cut-out size	161 x 93mm	186 x 136mm	275 x 177mm	393 x 254mm
Weight	0.32 kg	0.58 kg	0.86 kg	2.46 kg
Housing material	Plastic (PC+ABS), Gray			
Power				
Input voltage	24 V DC (18 to 32 VDC)			
Power consumption, max	4.8 W	5.7 W (6.6 W)	6.8 W (7.7 W)	17.3 W
Input fuse	Internal DC fuse			
System				
CPU	ARM Cortex A8 600MHz	ARM Cortex A8 600MHz (ARM Cortex A8 1000MHz)		ARM Cortex A8 1000MHz
RAM	512 MB			
FLASH	2 GB, 1.5 GB free	2 GB, 1.5 GB free		2 GB, 1.5 GB free
Software				
Operating system	Windows Embedded CE 8.0			
Display				
Size diagonal	5.0" diagonal	7.0" diagonal	10.1" diagonal	15.6" diagonal
Resolution	800 x 480 pixel (5:3)		1024 x 600 pixel (17:10)	1366 x 768 pixel (16:19)
Backlight	LED Backlight			
Backlight life time	20 000 hours		30000 hours	50000 hours
Backlight brightness	250 cd/m²	400 cd/m²	350 cd/m²	300 cd/m²
Backlight dimming	Industrial Dimming			
Display type	TFT-LCD with LED backlight			
IOs				
Digital output	No			
Communication serial				
Number of serial ports	1port9pinDsub, 1port3pinScrew (HP: 2port9pinDsub, 1port3pinScrew)			
Serial port 1	RS 232 (RTS/CTS)			
Serial port 2	RS422/485			
Serial port 3	RS 485			
Serial port 4	HP only: RS 232 (RTS/CTS)			
Serial port 5	HP only: RS422/485			
Serial port 6	RS485			
Ethernet communication				
Number of ethernet ports	1	1 (HP:2)		2
Ethernet port 1	1x10/100 Base-T (shielded RJ45)			
Ethernet port 2	NA	NA (1x10/100 Base-T (shielded RJ45))		
Expansion interface				
Expansion port	No			
SD card	No	No (Yes)		Yes
USB	1 (HP: 2)			
Environmental				
Operating temperature	-10°C to +50°C			
Storage temperature	-20°C to +60°C			
Shock	15g, half-sine, 11ms according to IEC60068-2-27			
Vibration	1g, according to IEC 60068-2-6, Test Fc			
Sealing front	IP65			
Sealing back	IP20			
Humidity	5% – 85% non-condensed			

*Preliminary data. The high-performance versions are scheduled for launch in 2021.



	X2 marine 7 (HB, SC, HB SC)	X2 marine 15 (HB, SC, HB SC)
General description		
Part number	630002505 (HB: 630008705, SC: 630008605, HB SC: 630008805)	640003305 (HB: 640003505, SC: 640009005, HB SC: 640009405)
Warranty	2 year	
Certifications		
General	CE, FCC, KCC	
Marine	BV, DNV GL, KR, LR, ABS, CCS, EN60945, NK	
UL	UL 61010-2-201	
Mechanical		
Mechanical size	204 x 143 x 50mm	410 x 286 x 61mm
Touch type	Resistive	
Cut-out size	189 x 128mm	394 x 270mm
Weight	0.8 kg	3.85 kg
Housing material	Powder-coated aluminum, Black	
Power		
Input voltage	24 V DC (18 to 32 VDC)	
Power consumption, max	14.4W (HB: 21.6W, SC: 14.4W, HB, SC: 21.6W)	31.2W (HB: 33.6W, SC: 31.2W, HB SC: 33.6W)
Input fuse	Internal DC fuse	
System		
CPU	i.MX6Solo Single Cortex-A9 1.0GHz 512kBL2cache (HB, HB SC: Quad ARM Cortex-A9, SC: Dual Cortex-A9)	i.MX6DualLite, Dual Cortex-A9 1.0GHz 512kBL2cache (i.MX6Quad, Quad ARM Cortex-A9 1.0GHz 1MBL2cache)
RAM	512 MB (HB, HB SC: 2 GB, SC: 1 GB)	1 GB (2 GB)
FLASH	2GB SSD(eMMC), 1.5GB free for application storage	
Display		
Size diagonal	7" diagonal	15.4" diagonal
Resolution	800 x 480 pixels	1280 x 800 pixels
Backlight	LED Backlight	
Backlight life time	50 000 hours	50 000 hours (HB, HB SC: 30 000 hours)
Backlight brightness	500 cd/m² (HB, HB SC: 1 000 cd/m²)	450 cd/m² (HB, HB SC: 1 000 cd/m²)
Backlight dimming	Marine optimized dimming	Marine optimized dimming
Display type	TFT-LCD with LED backlight	
Softcontrol		
CODESYS runtime version	NA (HB: NA, SC: 3.5, HB SC: 3.5)	NA (HB: NA, SC: 3.5, HB SC: 3.5)
CODESYS EtherCAT	NA (HB: NA, SC: Yes, HB SC: Yes)	NA (HB: NA, SC: Yes, HB SC: Yes)
CODESYS Modbus Ethernet	NA (HB: NA, SC: Yes, HB SC: Yes)	NA (HB: NA, SC: Yes, HB SC: Yes)
CODESYS Modbus RTU	NA (HB: NA, SC: Yes, HB SC: Yes)	NA (HB: NA, SC: Yes, HB SC: Yes)
CANopen	NA (HB: NA, SC: Yes, HB SC: Yes)	NA (HB: NA, SC: Yes, HB SC: Yes)
Non volatile variables	NA (HB: NA, SC: 32KB, HB SC: 64KB)	NA (HB: NA, SC: 64KB, HB SC: 64KB)
Digital IO		
Digital output	NA (HB, HB SC: 2xDO Solid state relay, 0.5A@24VDC)	
Communication serial		
Number of serial ports	1 Port 9pin DSUB	
Serial port 1	RS 232 (RTS/CTS)	
Serial port 2	RS422/485	
Serial port 3	RS485 (only if COM 2 is RS485)	
Ethernet communication		
Number of ethernet ports	1 (HB, SC, HB SC: 2)	2
Ethernet port 1	1 x 10/100 Base-T (shielded RJ45)	
Ethernet port 2	NA (HB/SC/HB SC: 1x10/100 Base-T - shielded RJ45)	
Expansion interface		
Expansion port	Yes, cIX expansion module	
SD card	SD and SDHC	
USB	1xUSB 2.0 500mA (HB/HB SC: 2xUSB 2.0 500mA)	2 x USB 2.0 500mA
Environmental		
Operating temperature	-10°C to +60°C	
Storage temperature	-20°C to +70°C	
Shock	15g, half-sine, 11ms according to IEC60068-2-27	
Vibration	1g, according to IEC 60068-2-6, Test Fc	
Sealing front	IP65, NEMA 4X/12 and UL Type 4X/12	
Sealing back	IP20	
Humidity	5% – 85% non-condensed	

A simple path forward

It's easy to upgrade your existing iX HMI solution

Continues on next page ...

Hardware upgrade to X2 series

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 iX HMI Industrial to X2 pro

iX HMI panel	X2 panel	Comment
iX T4A	X2 pro 4	-
iX T7A	X2 pro 7	-
iX T10A	X2 pro 10	Different cut-out size
iX T7B	X2 pro 7	-
iX T12B	X2 pro 12	-
iX T15B	X2 pro 15	-
-	X2 pro 21	-

From iX HMI Marine to X2 marine

iX HMI panel	X2 panel	Comment
iX T7AM	X2 marine 7	-
-	X2 marine 7 HB	-
-	X2 marine 7 SC	New 7-inch panel with integrated control
-	X2 marine 7 HB SC	New 7-inch panel with integrated control and high brightness display
iX T15BM	X2 marine 15	-
iX T15BM-HB	X2 marine 15 HB	-
-	X2 marine 15 SC	New 15-inch panel with integrated control
-	X2 marine 15 HB SC	New 15-inch panel with integrated control and high brightness display

From iX HMI SoftControl to X2 control

iX HMI panel	X2 panel	Comment
iX T4A-SC	X2 control 4	-
iX T7A-SC	X2 control 7	-
iX T10A-SC	X2 control 10	Different cut-out size
iX T7B-SC	X2 control 7	-
iX T12B-SC	X2 control 12	-
iX T15B-SC	X2 control 15	-

From iX HMI TxF-2 series to X2 base

iX HMI panel	X2 panel	Comment
iX T5F-2	X2 base 5	-
iX T7F-2	X2 base 7	-
iX T10F-2	X2 base 10	-

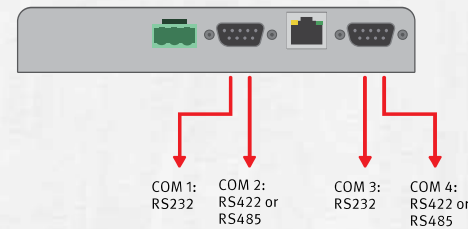
iX application upgrade



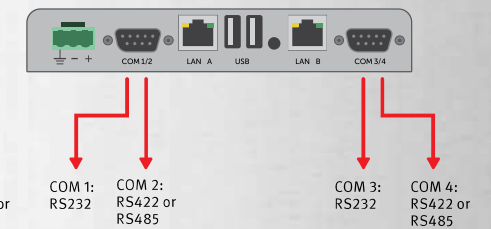
X2 panels are software compatible with iX 2.20 SP2 and forwards. Watch the video on www.beijerelectronics.com/X2 to see how easily you update an existing iX application to an X2 panel.

Serial port layout

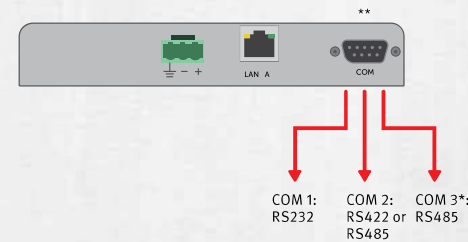
TxA



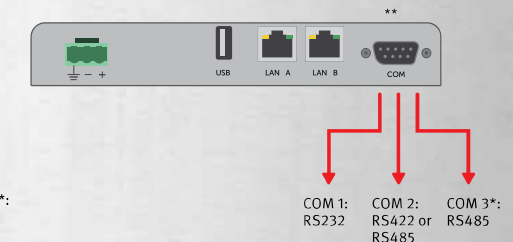
TxB



X2 pro 4 and X2 pro 7



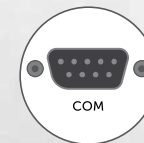
X2 pro 10, X2 pro 12 and X2 pro 15



* COM3 can only be used if COM2 is RS485

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** CAB150 splitter cable provides the connectivity for the three serial ports.



If you use COM3 for RS232 in TxA or TxB:

- Change to COM 1

If you use 2 × RS485:

- Change COM4 to COM3
- COM 2 needs to be RS485

OPC DA communication

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

