Introduction

Purpose of the Operating Instructions

These operating instructions support you when commissioning networks with the devices of the product line SCALANCE X-200.

Validity of the Operating Instructions

These Operating Instructions apply to the following devices:

SCALANCE X-200	
Device	**Article number**
X204-2	6GK5 204-2BB10-2AA3
X204-2TS	6GK5 204-2BB10-2CA2
X204-2FM	6GK5 204-2BB11-2AA3
X204-2LD	6GK5 204-2BC10-2AA3
X204-2LD TS	6GK5 204-2BC10-2CA2
X206-1	6GK5 206-1BB10-2AA3
X206-1LD	6GK5 206-1BC10-2AA3
X208	6GK5 208-0BA10-2AA3
X208PRO	6GK5 208-0HA10-2AA6
X212-2	6GK5 212-2BB00-2AA3
X212-2LD	6GK5 212-2BC00-2AA3
X216	6GK5 216-0BA00-2AA3
X224	6GK5 224-0BA00-2AA3

SCALANCE XF-200	
Device	**Article number**
XF204	6GK5 204-0BA00-2AF2
XF204-2	6GK5 204-2BC00-2AF2
XF206-1	6GK5 206-1BC00-2AF2
XF208	6GK5 208-0BA00-2AF2

SCALANCE X-200IRT	
Device	**Article number**
X200-4P IRT **)	6GK5 200-4AH10-2BA3
X201-3P IRT **)	6GK5 201-3BH10-2BA3
X201-3P IRT PRO **)	6GK5 201-3JR10-2BA6
X202-2IRT **)	6GK5 202-2BB10-2BA3

3.7 The C-PLUG

Area of application

The C-PLUG is an exchangeable medium for storage of the configuration and project engineering data of the basic device. This means that the configuration data remains available if the basic device is replaced.

How it works

Power is supplied by the basic device. The C-PLUG retains all data permanently when the power is turned off.

If an empty C-PLUG (factory settings) is inserted, all configuration data of an IE Switch X-200 is saved to it when the device starts up. Changes to the configuration during operation are also saved on the C-PLUG without any operator intervention being necessary.

If a C-PLUG is inserted, the configuration stored internally on the basic device is no longer changed. Al changes made to the configuration during ongoing operation are only stored on the C-PLUG.

A basic device with an inserted C-PLUG automatically uses the configuration data of the C-PLUG when it starts up. This is, however, only possible when the data was written by a compatible device type.

This allows fast and simple replacement of the basic device. If a device is replaced, the C-PLUG is taken from the failed component and inserted in the replacement device. The first time it is started up, the replacement device has the same configuration as the failed device except for the MAC address set by the vendor.

Compatible devices

As a general rule, the data on the C-PLUG is only compatible with devices having an identical order number and the same device name.

The device combinations shown in the following table are exceptions. With these devices, the exchange of the C-PLUG is possible in one direction.

Device type	C-PLUG created by device with order number		Compatible with device with order number
X204-2	6GK5 204-2BB00-2AA3	➡	6GK5 204-2BB10-2AA3
X204-2LD	6GK5 204-2BC00-2AA3		6GK5 204-2BC10-2AA3
X206-1	6GK5 206-1BB00-2AA3		6GK5 206-1BB10-2AA3
X206-1LD	6GK5 206-1BC00-2AA3		6GK5 206-1BC10-2AA3
X208	6GK5 208-0BA00-2AA3		6GK5 208-0BA10-2AA3
X208PRO	6GK5 208-0HA00-2AA6		6GK5 208-0HA10-2AA6
X200-4P IRT	6GK5 200-4AH00-2BA3		6GK5 200-4AH10-2BA3
X201-3P IRT	6GK5 201-3BH00-2BA3		6GK5 201-3BH10-2BA3
X201-3P IRT PRO	6GK5 201-3JR00-2BA6		6GK5 201-3JR10-2BA6
X202-2IRT	6GK5 202-2BB00-2BA3		6GK5 202-2BB10-2BA3
X202-2P IRT	6GK5 202-2BH00-2BA3		6GK5 202-2BH10-2BA3
X202-2P IRT PRO	6GK5 202-2JR00-2BA6		6GK5 202-2JR10-2BA6
X204IRT	6GK5 204-0BA00-2BA3		6GK5 204-0BA10-2BA3
X204IRT PRO	6GK5 204-0JA00-2BA6		6GK5 204-0JA10-2BA6
XF204IRT	6GK5 204-0BA00-2BF2		6GK5 204-0BA10-2BF2

Note

Combinations other than those shown in the table are not compatible with each other.

Using a previously written C-PLUG

If you want to insert a C-PLUG that has already been used and written to into a new differently configured X-200 IE switch, you will first need to delete the existing data on the C-PLUG. You will find information about this in the configuration manual of the SCALANCE X-200 in the section on the WBM menu items.

Note

The X-200 IE switches normally start up with the configuration of the C-PLUG, assuming this was written to by a compatible device type. If the C-PLUG was written to by an incompatible device type, the basic device will not start up fully and signals an error. The WBM menu "System C-PLUG" is displayed automatically. Here, use the "Modify C-PLUG" function to specify whether or not the device operates with a C-PLUG.

If you operate a device with a C-PLUG, the C-PLUG can either be initialized with the factory settings or with the settings stored internally on the device.

Diagnostics

The following events are signaled by the diagnostics mechanisms of the X-200, such as LEDs, WBM etc.:

- Inserting a C-PLUG that contains the configuration of an incompatible device type.
- The accidental removal of a C-PLUG
- General malfunctions of the C-PLUG.

The C-PLUG does not ship with the product

The C-PLUG is not supplied with the IE switches X-200, see section "Accessories (Page 25)".

Inserting in the slot

NOTICE
• **Insert and remove the C-PLUG only when power is off.** • **In a device with a varnished printed circuit board, you may only use a C-PLUG with a varnished board.**



Figure 3-2 C-PLUG and slot based on the example of an X-200

You will find information regarding the location of the C-PLUG slot for the various product groups in the "Device views (Page 23)".

5.6.2.2 Single mode fiber-optic cable

Transmission medium

The following X-200 IE switches use single mode fiber-optic cables as the transmission medium:

- X204-2LD
- X204-2LD TS
- X206-1LD
- X212-2LD

Characteristics:

Transmission speed	100 Mbps
Transmission mode	100Base LX
Connectors	BFOC sockets
Wavelength	1310 nm
Core diameter	9 µm
Outer diameter	125 µm
Light source	LED
Maximum range (segment length)	26 km

Note

No autonegotiation

With optical transmission, the full duplex mode and transmission speed cannot be changed. For this reason, the autonegotiation function cannot be selected.

5.6.2.3 POF and PCF cables

Transmission medium

The following X-200 IE switches use Plastic Optical Fiber (POF) or Polymer Cladded Fiber (PCF) as the transmission medium:

- X200-4P IRT
- X201-3P IRT
- X201-3P IRT PRO
- X202-2P IRT
- X202-2P IRT PRO
- XF204-2BA IRT with corresponding bus adapter

Technical specifications

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Construction

Type	Dimensions (W x H x D) in mm	Weight in g	Installation options - DIN rail - S7-300 standard rail - Wall mounting
X204-2	60 x 125 x 124	780	+
X204-2TS	60 x 125 x 124	780	+
X204-2FM	60 x 125 x 124	780	+
X204-2LD	60 x 125 x 124	780	+
X204-2LD TS	60 x 125 x 124	780	+
X206-1	60 x 125 x 124	780	+
X206-1LD	60 x 125 x 124	780	+
X208	60 x 125 x 124	780	+
X208PRO	90 x 125 x 124	1000	+
X212-2	120 x 125 x 124	1200	+
X212-2LD	120 x 125 x 124	1200	+
X216	120 x 125 x 124	1200	+
X224	180 x 125 x 124	1600	+
XF204	75 x 125 x 73	250	DIN rail mounting only
XF204-2	75 x 125 x 73	250	DIN rail mounting only
XF206-1	75 x 125 x 73	250	DIN rail mounting only
XF208	75 x 125 x 73	250	DIN rail mounting only
X200-4P IRT	60 x 125 x 124	780	+
X201-3P IRT	60 x 125 x 124	780	+
X201-3P IRT PRO	90 x 125 x 124	1000	+
X202-2IRT	60 x 125 x 124	780	+
X202-2P IRT	60 x 125 x 124	780	+
X202-2P IRT PRO	90 x 125 x 124	1000	+
X204IRT	60 x 125 x 124	780	+
X204IRT PRO	90 x 125 x 124	1000	+
XF204IRT	75 x 125 x 73	250	DIN rail mounting only
XF204-2BA IRT	100 x 117.1 x 74	250	DIN rail mounting only

Ports

Type	Connectors for end devices or network components via twisted pair RJ45 jacks with MDI X pinning 10/100 Mbps (half / full duplex) [1]	Connections for end devices or network components via FO cable BFOC sockets (100 Mbps, full duplex to 100BaseFX)	Connectors for power supply 4-pin plug-in terminal block, redundant [2]	Connectors for signaling contact 2-pin plug-in terminal block [3]
X204-2	4	2	1	1
X204-2TS	4	2	1	1
X204-2FM	4	2	1	1
X204-2LD	4	2	1	1
X204-2LD TS	4	2	1	1
X206-1	6	1	1	1
X206-1LD	6	1	1	1
X208	8	-	1	1
X208PRO	8 [1]	-	1 [2]	1 [3]
X212-2	12	2	1	1
X212-2LD	12	2	1	1
X216	16	-	1	1
X224	24	-	1	1
XF204	4	-	1	1
XF204-2	4	2	1	1
XF206-1	6	1	1	1
XF208	8	-	1	1
X202-2IRT	2	2	1	1
X204IRT	4	-	1	1
XF204IRT	4	-	1	1

[1] Exception X208PRO: Connection via 4-pin, d-coded M12 socket, IP65/67.

[2] Exception X208PRO: Connection via 4-pin, a-coded M12 socket, IP65/67.

[3] Exception X208PRO: Connection via 5-pin, b-coded M12 socket, IP65/67.

Type	Connectors for end devices or network components via twisted pair RJ45 jacks with MDI X pinning 10/100 Mbps (half / full duplex)	Connections for end devices or network components via FO cable SC RJ jacks (push-pull) (100 Mbps, full duplex to 100BaseFX)	Connector for power supply 4-pin plug-in terminal block, redundant	Connector for signaling contact 2-pin plug-in terminal block
X200-4P IRT	-	4	1	1
X201-3P IRT	1	3	1	1
X202-2P IRT	2	2	1	1

Type	Slots for BusAdapter	Connector for power supply 2-pin plug-in terminal block	Connector for signaling contact 2-pin plug-in terminal block
XF204-2BA IRT	2	2	1

Type	Connectors for end devices or network components via twisted pair RJ45 jacks with MDI X pinning 10/100 Mbps half / full duplex	Connections for end devices or network components via FO cable SC RJ jacks (push-pull), 100 Mbps, full duplex to 100BaseFX	Connector for power supply 5-pin Power Plug PRO connector (male)	Connector for signaling contact 5-pin b-coded M12 connector (male)
X201-3P IRT PRO	1	3	2	1
X202-2P IRT PRO	2	2	2	1
X204IRT PRO	4	-	2	1

Signaling contact

The following applies to all devices:

- Voltage for the signaling contact: 24 VDC
- Current through the signaling contact: maximum 100 mA
- Resistor between F1-F2: < 8 ohms

Electrical data

Type	Supply voltage with redundant connection Rated voltage 12 to 24 VDC SELV Voltage range 10 VDC to 28.8 VDC Permitted voltage range incl. total ripple 10 VDC to 30.2 VDC	Power loss at 12 VDC	Current consumption at rated voltage	Overcurrent protection at input Non-replaceable fuse (F)
X204-2TS	+	6.60 W	600 mA	3.0 A / 32 V
X204-2LD TS	+	6.60 W	600 mA	3.0 A / 32 V

Type	Supply voltage with redundant connection Rated voltage 24 VDC Voltage range 19.2 VDC to 28.8 VDC Permitted voltage range incl. total ripple 18.5 VDC to 30.2 VDC	Power loss at 24 VDC	Current consumption at rated voltage	Overcurrent protection at input PTC resettable fuse
X204-2	+	6.36 W	265 mA	600 mA / 60 V
X204-2FM	+	6.36 W	265 mA	600 mA / 60 V
X204-2LD	+	6.36 W	265 mA	600 mA / 60 V
X206-1	+	5.28 W	220 mA	600 mA / 60 V
X206-1LD	+	5.28 W	220 mA	600 mA / 60 V
X208	+	3.84 W	185 mA	600 mA / 60 V
X208PRO	+	4.4 W	185 mA	600 mA / 60 V

Type	Supply voltage with redundant connection Rated voltage 24 VDC Voltage range 19.2 VDC to 28.8 VDC Permitted voltage range incl. total ripple 18.5 VDC to 30.2 VDC	Power loss at 24 VDC	Current consumption at rated voltage	Overcurrent protection at input PTC resettable fuse
X212-2	+	7.92 W	330 mA	1.1 A / 33 V
X212-2LD	+	7.92 W	330 mA	1.1 A / 33 V
X216	+	5.76 W	240 mA	1.1 A / 33 V
X224	+	8.40 W	350 mA	1.1 A / 33 V
XF204	+	2.64 W	110 mA	1.1 A / 33 V
XF204-2	+	5.28 W	220 mA	1.1 A / 33 V
XF206-1	+	4.08 W	170 mA	1.1 A / 33 V
XF208	+	3.12 W	130 mA	1.1 A / 33 V

Type	Supply voltage with redundant connection Rated voltage 24 VDC Voltage range 19.2 V DC to 31.2 V DC *)	Power loss at 24 VDC	Current consumption at rated voltage	Overcurrent protection at input PTC resettable fuse
X200-4P IRT	+	6.0 W	250 mA	2.5 A (non-replaceable fuse F)
X201-3P IRT	+	5.28 W	220 mA	2.5 A (non-replaceable fuse F)
X201-3P IRT PRO	no redundancy	5.28 W	220 mA	2.5 A (non-replaceable fuse F)
X202-2IRT	+	5.8 W	240 mA	2.5 A (non-replaceable fuse F)
X202-2P IRT	+	4.8 W	200 mA	2.5 A (non-replaceable fuse F)
X202-2P IRT PRO	no redundancy	4.8 W	200 mA	2.5 A (non-replaceable fuse F)
X204IRT	+	3.4 W	140 mA	2.5 A (non-replaceable fuse F)
X204IRT PRO	no redundancy	3.4 W	140 mA	2.5 A (non-replaceable fuse F)
XF204IRT	+	3.4 W	140 mA	1.5 A (non-replaceable fuse F)
XF204-2BA IRT [1)]	+	2.4 W	100 mA	2.5 A (non-replaceable fuse F)

*) The devices meet the requirement according to the voltage range including the total ripple of 18 5 V DC to 30.2 V DC.

1) With the specified power loss and current consumption these are the values of the basic device without plugged in BusAdapters. The values change depending on the port types of

the plugged in BusAdapters. Per port you need to add the following values to the values of the basic device:

Port type	Power loss	Current consumption
RJ45/M12/FC (Fast Connect)	0.6 W	25 mA
SCRJ up to hardware version 5	1.8 W	75 mA
SCRJ as of hardware version 6	1.0 W	40 mA
LC support as of hardware version 4	1.5 W	65 mA
RJ45VD (variable distance)	1.5 W	65 mA
LC-LD	1.25 W	60 mA

Examples

The following table shows the active power loss an current consumption as an example for the basic device with different BusAdapters:

Type	Plugged in BusAdapter	Port types	Power loss	Current consumption
XF204-2BA IRT	2 BusAdapter BA 2 × RJ45	4 x RJ45	4.8 W	200 mA
	2 BusAdapter BA 2 x SCRJ	4 x SCRJ	9.6 W	400 mA
	1 BusAdapter BA 2 x SCRJ 1 BusAdapter BA SCRJ/RJ45	3 x SCRJ 1 x RJ45	8.4 W	350 mA
	2 BusAdapter BA 2 x SCRJ (as of hardware version 6)	4 x SCRJ	6.5 W	270 mA
	1 BusAdapter BA 2 x SCRJ (as of hardware version 6) 1 BusAdapter BA SCRJ / RJ45 (as of hardware version 6)	3 x SCRJ 1 x RJ45	6.0 W	250 mA
	2 BusAdapter LC-LD/LC-LD	4 x LC (SM)	7.4 W	310 mA
	2 BusAdapter RJ45VD/RJ45VD	4 x RJ45VD	8.4 W	350 mA

Optical data

Type	Transmitter output (optical)		Receiver input	
	min. [dBm]	max. [dBm]	Sensitivity min. [dBm]	Input power max. [dBm]
X204-2 **X204-2TS** **X204-2FM** **X206-1** **X212-2** **XF204-2** **XF206-1** **X202-2IRT**	-19	-14	-32	-3
X204-2LD **X204-2LD TS** **X206-1LD** **X212-2LD**	-15	-8	-34	-3
X200-4P IRT **X201-3P IRT** **X201-3P IRT PRO** **X202-2P IRT** **X202-2P IRT PRO**	-8	-2	-23	+1

Type	Connector	Transmitter output (optical)		Receiver input	
XF204-2BA IRT (with corresponding BusAdapters)	Plastic Optical Fiber (SCRJ)	• Minimum • Maximum	• -8 dBm • -2 dBm	• Sensitivity min. • Input power max.	• -23 dBm • +1 dBm
	Polymer Cladded Fiber (SCRJ)	• Minimum • Maximum	• -19 dBm • -11 dBm	• Sensitivity min. • Input power max.	• -26.8 dBm • -4 dBm
	Fiber-optic cable (LC)	• Minimum (at 50 µm) • Minimum (at 62.5 µm) • Maximum	• -24 dBm • -18 dBm • -14 dBm	• Sensitivity min. • Input power max.	• -31 dBm • -12 dBm

Permitted cable lengths - copper

For devices with degree of protection IP20/30

The following cables are permitted in the specified lengths:

- **0 to 55 m:**
  IE TP torsion cable with IE FC RJ45 Plug 180
  - Alternative:
    0 to 45 m IE TP Torsion Cable + 10 m TP Cord via IE Outlet RJ45
- **0 to 85 m:**
  IE FC TP marine / trailing / flexible / FRNC / festoon / food cable with IE FC RJ45 Plug 180
  - Alternative:
    0 to 75 m IE FC TP marine / trailing / flexible / FRNC / festoon / food cable + 10 m TP cord over IE FC outlet RJ45
- **0 to 100 m:**
  IE FC TP standard cable with IE FC RJ45 plug 180
  - Alternative:
    0 to 90 m IE FC TP standard cable + 10 m TP cord via IE FC outlet RJ45

For devices with the "PRO" supplement (degree of protection IP65)

With these devices, splitting of the cables (as above) is not permitted. The following cables are permitted in the specified lengths:

- **0 to 55 m:**
  IE TP torsion cable with IE FC RJ45 Plug 180
- **0 to 85 m:**
  IE FC TP marine / trailing / flexible / FRNC / festoon / food cable with IE FC RJ45 Plug 180
- **0 to 100 m:**
  IE FC TP standard cable with IE FC RJ45 plug 180

For X208PRO (degree of protection IP65/67)

With the X208PRO, splitting of the cables (as above) is not permitted either. The following cables are permitted in the specified lengths:

- **0 to 55 m:**
  IE TP torsion cable with IE FC M12 Plug PRO
- **0 to 85 m:**
  IE FC TP marine / trailing / flexible / FRNC / festoon / food cable with IE FC M12 Plug PRO
- **0 to 100 m:**
  IE FC TP standard cable with IE FC M12 plug PRO

Permitted cable lengths - fiber-optic

Type	1 - 50 m 980/1000 plastic optical fiber (POF)	1 - 100 m 200/230 polymer cladded fiber (PCF) 6 dB max. permitted cable attenuation with 3 dB link power margin	0 - 4000 Glass FO cable 62.5/125 µm glass fibers 0 - 5000 Glass FO cable 50/125 µm glass fibers ≤ 1 dB/km at 1300 nm; 600 MHz x km; 6 dB max. permitted cable attenuation with 3 dB link power margin	0 - 26000 m glass FO cable 9/125 µm single mode fiber; 0.5 dB/km at 1310 nm; 13 dB max. permitted cable attenuation with 2 dB link power margin
X204-2	-	-	+	-
X204-2TS	-	-	+	-
X204-2FM	-	-	+	-
X204-2LD	-	-	-	+
X204-2LD TS	-	-	-	+
X206-1	-	-	+	-
X206-1LD	-	-	-	+
X212-2	-	-	+	-
X212-2LD	-	-	-	+
XF204-2	-	-	+	-
XF206-1	-	-	+	-
X200-4P IRT	+	+	-	-
X201-3P IRT	+	+	-	-
X201-3P IRT PRO	+	+	-	-
X202-2IRT	-	-	+	-
X202-2P IRT	+	+	-	-
X202-2P IRT PRO	+	+	-	-

Degree of protection and MTBF

Type	Degree of protection	MTBF
X204-2	IP30	64 years
X204-2TS	IP20	63 years
X204-2FM	IP30	87 years
X204-2LD	IP30	60 years
X204-2LD TS	IP20	85 years
X206-1	IP30	72 years
X206-1LD	IP30	69 years
X208	IP30	83 years
X208PRO	IP65/67	83 years
X212-2	IP30	46 years
X212-2LD	IP30	43 years
X216	IP30	52 years
X224	IP30	45 years
XF204	IP20	48 years

Type	Degree of protection	MTBF
XF204-2	IP20	60 years
XF206-1	IP20	69 years
XF208	IP20	54 years
X200-4P IRT	IP30	61 years
X201-3P IRT	IP30	65 years
X201-3P IRT PRO	IP65	66 years
X202-2IRT	IP30	73 years
X202-2P IRT	IP30	67 years
X202-2P IRT PRO	IP65	71 years
X204IRT	IP30	77 years
X204IRT PRO	IP65	85 years
XF204IRT	IP20	82 years
XF204-2BA IRT	IP20	78 years

Switching properties

Type	Max. number of learnable addresses	Aging time	Switching technique	Latency
X-200	8000	30 s	Store and forward	5 µs
XF-200	8000	30 s	Store and forward	5 µs
X-200IRT	4096	30 s (configurable)	Store and forward / cut through	< 5 µs
XF-200IRT	4096	30 s (configurable)	Store and forward / cut through	< 5 µs

PRP compatibility

For a device to be used in PRP networks, it must be able to process a frame length of at least 1528 bytes (Jumbo Frames). This value is the maximum frame length including VLAN tag of 1522 bytes plus the length of the PRP trailer of 6 bytes. The following table shows the version as of which the devices are PRP compatible.

Type	As of version *
X204-2	V4.4
X204-2TS	V4.4
X204-2FM	HS 1
X204-2LD	V4.4
X204-2LD TS	HS 1
X206-1	V4.4
X206-1LD	V4.4
X208	V4.4
X208PRO	V4.4
X212-2	V4.4
X212-2LD	V4.4
X216	V4.4
X224	V4.4
XF204	V4.4

Type	As of version *
XF204-2	V4.4
XF206-1	V4.4
XF208	V4.4
X200-4P IRT	HS 1
X201-3P IRT	HS 1
X201-3P IRT PRO	HS 1
X202-2IRT	HS 1
X202-2P IRT	HS 1
X202-2P IRT PRO	HS 1
X204IRT	HS 1
X204IRT PRO	HS 1
XF204IRT	HS 1
XF204-2BA IRT	HS 1

***** Information about the hardware release (HS) or the firmware version (V) as of which PRP is supported.

Temperature class

The following applies to the temperature class: T4

Permitted ambient conditions

Note

Note the mounting position for XF and TS devices

With the following switches an ambient temperature of maximum +40 °C is permitted if the device is installed on a vertical rail:

- X204-2TS
- X204-2LD TS
- XF204
- XF204-2
- XF206-1
- XF208
- XF204IRT

Type	Operating temperature	Storage/transport temperature	Rel. humidity in operation (no condensation)	Operating altitude at max. xx °C ambient temperature
X204-2	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X204-2TS	-40 °C to +70 °C [1)]	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X204-2FM	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C

Type	Operating temperature	Storage/transport temperature	Rel. humidity in operation (no condensation)	Operating altitude at max. xx °C ambient temperature
X204-2LD	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X204-2LD TS	-40 °C to +70 °C [1)]	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X206-1	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X206-1LD	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X208	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X208PRO	-40 °C to +70 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X212-2	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X212-2LD	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X216	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X224	-40 °C to +60 °C	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
XF204	-40 °C to +60 °C [1)]	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
XF204-2	-40 °C to +60 °C [1)]	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
XF206-1	-40 °C to +60 °C [1)]	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
XF208	-40 °C to +60 °C [1)]	-40 °C to +70 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X200-4P IRT	-40 °C to +50 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 45 °C 3000 m at max. 40 °C
X201-3P IRT	-40 °C to +60 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 55 °C 3000 m at max. 50 °C
X201-3P IRT PRO	-40 °C to +60 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X202-2IRT	-40 °C to +60 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X202-2P IRT	-40 °C to +60 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X202-2P IRT PRO	-40 °C to +60 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X204IRT	-40 °C to +70 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
X204IRT PRO	-40 °C to +70 °C [2)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C
XF204IRT	-40 °C to +60 °C [1)]	-40 °C to +85 °C	‹ 95%	2000 m at max. 56 °C 3000 m at max. 50 °C

[1)] Note the information on the mounting position above.