

# IPC191X1

Gateway hardware with Linux operating system

## Datasheet



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MADE IN GERMANY



### Power Supply 115 / 230 V AC (standard variant)

Voltage	$U_{PWR1}$ : 115 / 230 V AC (90 – 264 V AC)
Power consumption	Max. 100 W; Typ. 50 W (depending on the used type)
Starting current	Max. 30 A (at 230 V AC)
Input frequency	47 – 63 Hz
Holding time	≥ 100 ms at 230 V AC
Fan	Fanless

### Power Supply 12 / 24 V DC (optional variant)

Voltage	$U_{PWR1}$ : 12 / 24 V DC (9 – 32 V DC)
Power consumption	Max. 100 W; Typ. 50 W (depending on the used type)
Starting current	Max. 13 A (at 10V DC)
Holding time	≥ 50 ms at +24 V DC
Fan	Fanless

### Power Supply 48 / 60 / 110 V DC (optional variant)

Voltage	$U_{PWR1}$ : 48 / 60 / 110 V DC (30 – 120 V DC)
Power consumption	Max. 100 W; Typ. 50 W (depending on the used type)
Starting current	n/a
Holding time	n/a
Fan	Fanless

**Note:** Further power supplies available on request.

### Mainboard

Embedded CPU	Intel® Series CPU Six cores with 2.6 GHz actively cooled
RAM	DDR4 RAM max. 64 GB
Mass storage	SATA
Real time clock	Supported by a lithium battery (CR2032)

## Interfaces

Ethernet	1x RJ45 up to 1 Gbps LAN interface 1x RJ45 up to 2.5 Gbps LAN interface
Serial interface	1x DB9 RS232 rear 1x DB9 RS232 front
Extension port	2x PCI Express x8 slot for 8x/16x RS232- or 4x Ethernet interface card
Mass storage CFast	<ul style="list-style-type: none"><li>• Rugged CFast card, industrial – grade</li><li>• Max. 64 GB supported</li><li>• MTBF <math>\geq</math> 4,000,000 hours</li><li>• No moving parts</li><li>• Removable flash card</li><li>• Bad Block Scanning/Handling</li><li>• Wear-Leveling system</li><li>• ECC</li><li>• Very short access time</li></ul>
USB	6x USB (4x USB 3.0, 2x USB 2.0 front)
Monitor	HDMI

## Diagnostics (Status LEDs)

Front	PWR: Power LED CPU: LED to show different software conditions Mass storage: CFast activity LED
Rear	LAN 1-2: Link and activity LED

## Housing

Body material	Steel chassis
Mounting	19" rack mount chassis (1U)
Expansion slot	2x PCIe x8
IP Code	IP20
Optional mass storage	Mass storage in optional removable frame SATA 2.5" SSD or HDD
Rotating parts	Excellent air flow with temperature-controlled fans
Dimensions (W x H x D)	approx. 482.6 mm x 44.45 mm x 381.0 mm (19" x 1.75" x 15" (W/H/D))
Weight	approx. 5.9 kg

## Operating Environment, Reliability

Operating temperature	0 °C to 45 °C
Storage temperature	-20 °C to 70 °C
Relative humidity	5% to 95% not condensing
MTBF	n/a

## Additional Functions, Features, Miscellaneous

Linux operating system	ipLinux
Real time clock	Battery buffered real time clock (RTC)
Hardware watchdog	<input checked="" type="checkbox"/>
Temperature monitoring	<input checked="" type="checkbox"/>
Power supply monitoring	<input checked="" type="checkbox"/>

## Approval, Standards and Conformity

Approval	CE (industrial)
Standards	IEC 61850-3:2013 (partly) - Maximum 10 meter signal lines CISPR 22:2008 + AMD01:2010 (EN55022:2010) Inclusive current basic norms (EMC – see below)
Conformity	RoHS; REACH; WEEE, EMC

## Electromagnetic Compatibility (EMC) – Emission Requirements

EN 55016-2-1:2014 +A1:2017	Conducted emission from the power port In the frequency range 150 kHz – 30 MHz
EN 55016-2-1:2014 +A1:2017	Conducted emission from signal lines In the frequency range 150 kHz - 30 MHz
EN 55016-2-3:2017	Electric field radiated emission In the frequency range 30 MHz – 1 GHz
EN 55016-2-3:2017	Radiated emission from the enclosure In the frequency range above 1 GHz
EN 61000-3-3:2013	Voltage fluctuations and flicker impressed on the public low-voltage system with rated current $\leq 16$ A per phase
EN 61000-3-2:2014	Harmonic current emissions impressed on the public low- voltage system with rated current $\leq 16$ A per phase

## Electromagnetic Compatibility (EMC) – Immunity Requirements

EN 61000-4-2:2009	Immunity to electrostatic discharge (ESD) <ul style="list-style-type: none"><li>- Contact discharge <math>\pm 6</math> kV</li><li>- Air discharge <math>\pm 8</math> kV</li></ul>
EN 61000-4-3:2006 +A1:2008 +A2:2010	Immunity to RF electromagnetic fields 80 – 4500 MHz, Test level 10 V/m
EN 61000-4-4:2012	Immunity to fast transients (Burst) <ul style="list-style-type: none"><li>- AC power port <math>\pm 4</math> kV</li><li>- DC power port <math>\pm 4</math> kV</li><li>- Signal lines <math>\pm 2</math> kV</li></ul>
EN 61000-4-5:2014 +A1:2017	Immunity to surges on power supply lines (Surge) <ul style="list-style-type: none"><li>- AC power port: line <math>\leftrightarrow</math> ground <math>\pm 4</math> kV</li><li>- AC power port: line <math>\leftrightarrow</math> line <math>\pm 2</math> kV</li><li>- DC power port: line <math>\leftrightarrow</math> ground <math>\pm 2</math> kV</li><li>- DC power port: line <math>\leftrightarrow</math> line <math>\pm 1</math> kV</li></ul>
EN 61000-4-6:2014	Immunity to conducted interference induced by radio-frequency fields 150 kHz – 80 MHz, Test level 10 V
EN 61000-4-11:2004 +A1:2017	Immunity to voltage dips and interruptions <ul style="list-style-type: none"><li>- residual voltage 0% / 1 cycle</li><li>- residual voltage 40% / 10 cycle</li><li>- residual voltage 0% / 5 cycle</li><li>- residual voltage 0% / 50 cycle</li></ul>
EN 61000-4-29:2000	Immunity to voltage dips and interruptions <ul style="list-style-type: none"><li>- residual voltage 70 % / 0.1s</li><li>- residual voltage 40 % / 0.1s</li><li>- residual voltage 0 % / 0.05s</li></ul>
EN 61000-4-17	Immunity to ripple on d.c. input power port <ul style="list-style-type: none"><li>- Test level 3; Percentage of nominal DC voltage 10%</li></ul>
EN 61000-4-18:2019 +AC: 2019	Immunity to damped oscillatory waves Frequency 1 MHz; Repetition rate 400 / s <ul style="list-style-type: none"><li>- Power port AC:<ul style="list-style-type: none"><li><math>\pm 2.5</math> kV line to ground (Test level 3)</li><li><math>\pm 2.5</math> kV line to line (Test level 3)</li></ul></li><li>- Power port DC:<ul style="list-style-type: none"><li><math>\pm 2.5</math> kV line to ground (Test level 3)</li><li><math>\pm 2.5</math> kV line to line (Test level 3)</li></ul></li></ul>