

# ERM1

## The Network Selector

### Datasheet



IPCOMM GmbH

Walter-Bouhon-Strasse 4  
90427 Nuremberg  
Germany

Phone: +49 911 18 07 91-0  
Fax: +49 911 18 07 91-10  
Internet: <https://www.ipcomm.de>  
Email: [info@ipcomm.de](mailto:info@ipcomm.de)

**Edition April 2024**  
**Version 1.0**



## Power Supply

Voltage	$V_{IN}$ : 24 V DC ( $V_{IN}$ : 8 - 55 V DC, reverse polarity protected, $V_{IN\_absolute}$ : -60 - +60 V DC)
Current consumption	Max. 150 mA (typ. 3 - 5 mA)
Ground / protective earth	The ground (GND) is galvanically connected directly to the protective earth (PE)
Line cross-section	0.129 - 3.31 mm <sup>2</sup> (solid or stranded wire)

## Interfaces

Ethernet relays	3x RJ45 Ethernet relay (A <- MAIN -> B) (compatible with 10M/100M/1G/10G Ethernet). At least 100,000 switching operations at a maximum of two switching operations per second. Power over Ethernet (PoE) pass-through for classes 0-4 is supported.
Function selector switch (toggle switch)	1x 3-way switch to control the ERM1 A manual MAIN <> Port A B manual MAIN <> Port B RC remote control over digital input
Digital input	1x digital control input Input voltage: 0 – 24 V DC (reverse polarity protected $V_{DI\_absolute}$ : -60 – +60 V DC) Input level low: $\leq 3.0$ V DC $\pm 10\%$ Input level high: $\geq 5.0$ V DC $\pm 10\%$ Input impedance: 1 M $\Omega$ $\pm 5\%$ Reaction time: ~12 ms Line cross-section: 0.129 – 3.31 mm <sup>2</sup>
Digital output	1x digital status output Output voltage: 0 – 24 V DC ( $V_{DO\_absolute}$ : -55 - +55 V DC, $I_{out}$ : ~0.4 mA) 60 k $\Omega$ $\pm 5\%$ against GND for MAIN <> A 60 k $\Omega$ $\pm 5\%$ against $V_{IN}$ for MAIN <> B Reaction time: ~7 ms Line cross-section: 0.129 – 3.31 mm <sup>2</sup>

## Diagnostics (Status LEDs)

A	Switching state MAIN <> Port A
B	Switching state MAIN <> Port A
RC	Remote control over digital input

## Additional Functions and Features

Overvoltage protection	The power supply and all interfaces are ESD, surge, and burst protected (see EMC)
------------------------	---

## Housing

Body material	Plastic chassis
Mounting	35 mm DIN-Rail
IP Code	IP30
Rotating parts	None
Dimensions (W x H x D)	approx. 22.5 mm x 105.5 mm x 123.4 mm
Weight	approx. 0.13 kg

## Operating Environment

Operating temperature	-40 °C to 85 °C
Storage temperature	-40 °C to 85 °C
Relative humidity	5% to 90% not condensing

## Approval, Standards and Conformity

Approval	CE (Industrial)
Standards	EN IEC 61000-6-2:2019 EN 61000-6-2:2005 +AC:2005 EN IEC 61000-6-4:2019 EN 61000-6-4:2007 +A1:2011 EN 61000-6-5:2015 EN 61850-3:2014 FCC Part 15 Subpart B ICES-003 (Issue 7)
Conformity	RoHS, REACH, WEEE, CE (EMC), UKCA, FCC, ICES

## Electromagnetic Compatibility (EMC – Emission / Immunity Requirements)

EN IEC 61000-6-3:2021	Conducted Voltage Emission (150 kHz - 30 MHz) on DC  Conducted Voltage Emission (150 kHz - 30 MHz) on LAN (MAIN) Conducted Voltage Emission (150 kHz - 30 MHz) on LAN (A) Conducted Current Emission (150 kHz - 30 MHz) on outgoing cables Radiated Electric Emission (30 MHz - 1 GHz)
-----------------------	---

EN IEC 61000-6-2:2019	<p>Electrostatic discharge immunity test</p> <p>Radiated Electric Immunity (80 MHz - 6 GHz), Enclosure (Front) 0°</p> <p>Radiated Electric Immunity (80 MHz - 6 GHz), Enclosure 90°</p> <p>Radiated Electric Immunity (80 MHz - 6 GHz), Enclosure 180°</p> <p>Radiated Electric Immunity (80 MHz - 6 GHz), Enclosure 270°</p> <p>Electrical fast transient/burst immunity test on Supply line</p> <p>Electrical fast transient/burst immunity test on Signal line LAN (MAIN)</p> <p>Electrical fast transient/burst immunity test on Signal line LAN (A)</p> <p>Electrical fast transient/burst immunity test on Signal line I/O</p> <p>Surge immunity test on Signal line I/O</p> <p>Surge immunity test on Supply line</p> <p>Surge immunity test on Signal line LAN (MAIN)</p> <p>Surge immunity test on Signal line (A)</p> <p>Conducted Voltage Immunity (150 kHz - 80 MHz) on Supply line</p> <p>Conducted Voltage Immunity (150 kHz - 80 MHz) on Signal lines (A)</p> <p>Conducted Voltage Immunity (150 kHz - 80 MHz) on Signal lines (MAIN)</p> <p>Conducted Voltage Immunity (150 kHz - 80 MHz) on Signal lines</p> <p>Voltage dips, short interruptions and voltage variations immunity tests on Supply line</p> <p>Power frequency magnetic field immunity test</p>
EN 61850-3:2014	<p>Damped oscillatory wave immunity test on DC supply line</p> <p>Damped oscillatory wave immunity test on Signal lines LAN (MAIN)</p> <p>Damped oscillatory wave immunity test on Signal lines LAN (A)</p> <p>Damped oscillatory wave immunity test on Signal lines I/O</p> <p>Immunity test to ripple on d.c. input power port on DC supply line</p> <p>Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz on DC supply line</p> <p>Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz on I/O</p> <p>Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz on LAN (MAIN)</p> <p>Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz on LAN (A)</p>

**Electromagnetic Compatibility (EMC)**  
 – 47 CFR FCC Part 15 Subpart B  
 – ICES-003:2020

FCC Part 15 Subpart B	<p>Conducted Voltage Emission (150 kHz - 30 MHz) on AC power line (120 V, 60 Hz; 240 V, 50 Hz)</p> <p>Limits 47 CFR FCC Part 15 Subpart B section §15.107</p> <p>Radiated Electric Emission (30 MHz - 1 GHz)</p> <p>Limits 47 CFR FCC Part 15 Subpart B section §15.109</p>
-----------------------	---