SEC3ER

Datasheet

Edition October 2023
Version 1.2

IPCOMM GmbH
Walter-Bouhon-Strasse 4
90427 Nuremberg
Germany
Phone: +49 911 18 07 91-0
Fax: +49 911 18 07 91-10
Internet: http://www.ipcomm.de
Email: info@ipcomm.de

Processor / Memory / Mass Storage

CPU	ARM Cortex-A8 1 GHz
RAM	256 MB DDR3L
Flash	512 MB SLC NAND

Power Supply

Input Voltage	115 / 230 V AC (85 - 264 V AC)
Appliance class	I (earth conductor contact)
Input frequency range	47 – 63 Hz
Power consumption	Max. 65 W (typ. 4 W without USB)
Input current	Max. 1.5 A
Power connection	IEC power connector (IEC 60320-C14)

Interfaces

Ethernet-Relays	4x RJ45 Ethernet-relay – interface pairs E1-E4 (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.
Control switch	4x 3-way switch E1-E4 to control the relays interface pairs ON / OFF – Manual control REMOTE – Software–based control
Ethernet interface	2x RJ45 10/100BASE-T (ETH0/ETH1)
Serial interface	2x RJ45 RS232 / RS422 / RS485 Baud Rate: 300 – 115200 Baud
USB interface	2 x USB 2.0 up to 480 Mbps “high speed”
Digital Input	8x Digital Input Input voltage: 0 – 24 V DC ($U_{DI1\text{-}8\_max}$: 30 V DC) Input level low: ≤ 2.96 V DC ± 1% Input level high: ≥ 3.49 V DC ± 1% Input impedance: 1.28 MΩ ± 2% Sampling rate: max. 500 Hz ± 5% Line cross-section: 0.129 – 3.31 mm² (AWG 26...12, solid or stranded wire)

Digital Output	8x Digital Output (MOSFET P-Channel high side) Input voltage *VSO*: 9 – 24 V DC - U_{VSO_max}: 30 V DC - I_{VSO_max}: 4 A Output voltage: $U_{DO1\text{-}8}$ = *VSO* - {0.4 V @ 0 A ..1 V @ 0.5 A} Max. output current: 500 mA Max. switching frequency: $t_{impulse}$ ≤ 2 kHz ± 25% Overcurrent protection - switchover to high-impedance state in the event of a fault: - if 500 mA limit is exceeded - when switching on load ≥ 350mA - switch-off time in case of error: 65µs ± 5% (with 22Ω and U_{VSO} = 24 V DC) - deactivation switch-off of outputs can be reset by software Line cross-section: 0.129 – 3.31 mm² (AWG 26...12, solid or stranded wire)

Diagnostics (Status LEDs)

PWR	Power LED
USR	LED freely configurable by software
CPU	LED to show different software conditions
COM1 / COM2	Send and receive LED for serial interfaces
ETH0 / ETH1	Link and activity LED for Ethernet interfaces
DI 1 – 8	Status LED for digital input *(green if high level)*
DO 1 – 8	Status LED for digital output *(green if output active; red if output deactivated due to error)*
E1 – E4	Three status LEDs each for displaying the current connection status of the Ethernet relays pairs E1-E4 (*red if interface is active; orange if interface is controlled by software; green if interface is inactive*)

Additional Functions and Features

Bistable relay Ethernet interfaces pairs	Four Ethernet interface pairs with control switch and diagnostic LEDs (per E1-E4)
Battery buffered real time clock	Supported by a lithium battery (CR2032)
Hardware watchdog	
Temperature monitoring	
Overvoltage protection	The power supply and all interfaces are ESD, surge, and burst protected (see EMC)

Housing

Body material	Steel chassis
Mounting	19" rack mounting with mounting brackets (included)
IP Code	IP20
Rotating parts	None
Dimensions (W x H x D)	approx. 354 mm x 44 mm x 164 mm (without brackets)
Weight	approx. 2 kg

Operating Environment

Operating temperature	-20 °C to 60 °C
Storage temperature	-40 °C to 85 °C
Relative humidity	5% to 95% not condensing

Approval, Standards and Conformity

Approval	CE (Industrial)
Standards	EN 61000-6-2: 2019 EN 61000-6-3: 2007 + A1:2011 FCC 47 CFR Part 15 Subpart B ICES-003, Issue 7 & ICES-Gen, Issue 1
Conformity	RoHS, REACH, WEEE, EMC, UKCA, FCC, ICES

Electromagnetic Compatibility (EMC) – Emission Requirements

EN 55016-2-1:2014 + A1:2017	Conducted emission on power supply lines in the frequency range 150 kHz - 30 MHz
EN 55016-2-1:2014 + A1:2017	Conducted emission on telecommunication 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 ≤ 16 A per phase
EN 61000-3-2:2014	Harmonic current emissions impressed on the public low-voltage system with rated current ≤ 16 A per phase

Electromagnetic Compatibility (EMC) **– Immunity Requirements**	
EN 61000-4-2: 2009	Immunity to electrostatic discharge (ESD) - Contact discharge ± 4 kV - Air discharge ± 8 kV
EN 61000-4-3:2006 +A1:2008 +A2:2010	Immunity to RF electromagnetic fields - 80 – 1000 MHz, Test level 10 V/m - 1.4 – 6 GHz, Test level 3 V/m
EN 61000-4-4: 2012	Immunity to fast transients (Burst) - AC power port ± 2 kV - Signal lines ± 1 kV
EN 61000-4-5:2014 + A1:2017	Immunity to surges on power supply lines (Surge) - AC power port: line <-> ground ± 2 kV - AC power port: line <-> line ± 1 kV
EN 61000-4-5:2014 + A1:2017	Immunity to surges on shielded signal lines (Surge) - Shielded lines ± 1 kV
EN 61000-4-6:2014	Immunity to conducted interference induced by radio-frequency fields - 150 kHz – 80 MHz, test level 10 V
EN 61000-4-8: 2010	Immunity to power frequency magnetic field magnetic field strength 30 A/m – frequency 50 + 60 Hz
EN 61000-4-11:2004	Immunity to voltage dips and interruptions - residual voltage 0% / 1 cycle - residual voltage 40% / 10 cycle - residual voltage 70% / 25 cycle - residual voltage 0% / 250 cycle

Electromagnetic Compatibility (EMC) - **FCC 47 CFR Part 15 Subpart B** - **ICES-003, Issue 7 & ICES-Gen, Issue 1**	
ANSI C63.4:2014 + ANSI C63.4a:2017	AC powerline conducted emission
ANSI C63.4:2014 + ANSI C63.4a:2017	Electric field radiated emission in the frequency range 30 – 1000 MHz
ANSI C63.4:2014 + ANSI C63.4a:2017	Electric field radiated emission in the frequency range 1 – 6 GHz