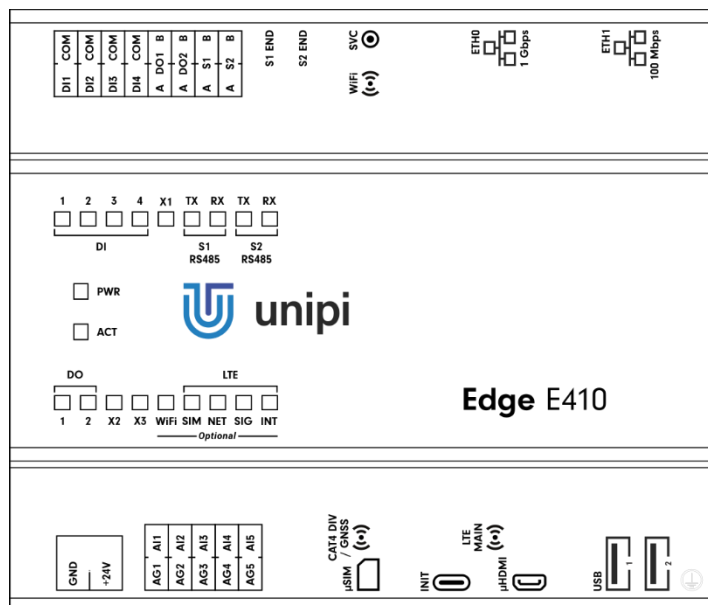


Unipi Edge E410



General

Compute module	Raspberry Pi Compute Module 4
Processor	quad-core CPU (Arm® Cortex®-A72, max. 1.5 GHz)
RAM	LPDDR4 RAM
Size of RAM	Options 1, 2, 4 or 8 GB
Internal storage	eMMC
Size of internal storage	Options 8, 16 or 32 GB
Retain memory	NVRAM
Size of retain memory	128 kB
TPM 2.0	Yes
Hardware Watchdog	Yes
User LED	3 × green
Operating System	Linux based OS – Debian

Digital inputs

No. of Inputs × groups	4 × 1
Input terminals	DI
Common ground	COM
Input type	SINK
Log. 0	< 5 V _{cc}
Log. 1	> 9 V _{cc}
Maximum voltage	35 V _{cc}
Input resistance for log. 1	6 200 Ω
Minimum pulse length	20 μs
0→1 / 1→0 typical delay	20 μs / 60 μs
Max. CNT counter input frequency	10 kHz
Functions of input	Counter (incl. Memory), Direct switch
Galvanic isolation	Yes, see manual for more details
LED indication	Yes

Digital outputs

No. of outputs × groups	2 × 1
Output terminals	DO – A, B
Output type	MOSFET SSR (resistive load)
Max. switchable voltage	48 V _{cc}
Switchable current continuous	500 mA
Switchable current pulse	1.5 A
Highest short-circuit current	6 A
Total rated load	48 V _{cc} , 500 mA
Inductive load protection	No, external snubber needed
Max. switching speed	500 Hz / 8 bits
Functions of output	PWM
PWM max. frequency	200 Hz
PWM max. resolution	16 bits
Galvanic isolation	Yes, see manual for more details
LED indication	Yes

Analog inputs

No. of inputs × groups	5 × 1
Input terminals	AI
Common ground	AG
Type of Input	SINK (measurement relative to the ground)
Overvoltage protection	Yes, integrated transil
Maximum input voltage	15 V _{cc}
Maximum input current	25 mA
Galvanic isolation (pulse)	Yes, see manual for more details

Analog input mode – Voltage 0-10 V

Available on Inputs	AI1, AI2, AI3
Measuring range	0.1–10 V
Accuracy	±0.2 % (of range)
Input resistance	Approx. 13.9 kΩ
Resolution	24 bits
Conversion time	100 ms

Analog input mode – Voltage 0-2.5 V

Available on Inputs	AI2, AI3
Measuring range	0.1–2.5 V
Accuracy	±0.2 % (of range)
Input resistance	Approx. 13.9 kΩ
Resolution	24 bits
Conversion time	100 ms

Analog input mode – Current 4-20 mA

Available on Inputs	AI2, AI3
Measuring range	4–20 mA
Accuracy	±0.2 % (of range)
Input resistance	Approx. 100 Ω
Resolution	24 bits
Conversion time	100 ms

Analog input mode – Resistance 2 kΩ

Available on Inputs	AI4, AI5
Measuring range	90–2000 Ω
Accuracy	±0.1 % (of range, within operational temperature)
Connection	Two-wire
Measuring current	< 0.3 mA (average)
Resolution	24 bits
Conversion time	100 ms
Compatible sensors	Pt100/Pt1000, Ni100/Ni1000/2k reostat, etc..

Unipi Edge E410

Communication

Ethernet	1 × 1 Gbps, 1 × 100 Mbps Ethernet
Serial/bus channels	2 × RS-485
RS-485 baudrates	50 baud ... 3 000 000 baud
RS-485 pull-up resistor	Yes, 560 Ω
RS-485 pull-down resistor	Yes, 560 Ω
RS-485 terminating resistor	Build-in attachable, 120 Ω
RS-485 galvanic isolation	Yes, see manual for more details
USB	2 × USB 2.0
Graphical interface	Micro HDMI
Graphic resolution	Up to 4Kp60

WLAN (Optional)

Optional variants	Without WLAN Wi-Fi and Bluetooth
Wi-Fi	2.4 GHz, 5 GHz IEEE 802.11b/g/n/ac
Bluetooth	5.0, Low energy (BLE)
WLAN antenna connector	RP-SMA female

LTE (Optional)

Optional variants	Without LTE, LTE Cat 1, LTE Cat 4, LTE Cat 1 with GNSS	
LTE variants	Cat 1	Cat 4
LTE modem manufacturer	Quectel	Quectel
LTE modem	EC200U-EUAB/ EC200U-EUAP	EC200A- EUHA
LTE category	Cat 1 (10/5 Mbps)	Cat 4 (150/50 Mbps)
GNSS (EC200U-EUAP only)	GPS, GLONASS, BeiDou, Galileo, QZSS	-
GPRS/EDGE class	12/-	12/12
LTE-FDD bands	B1/3/4/7/8/ 20/28	B1/3/5/7/8/ 20/28
LTE-TDD bands	B38/40/41	
GSM	GSM900/DSC1800	
GSM900 RF power (max.)	33 dBm ±2 dB	
DSC1800 RF power (max.)	30 dBm ±2 dB	
FDD/TDD RF power (max.)	23 dBm ±2 dB	
SIM card	Micro SIM	
LTE a GNSS antenna connector	SMA female	

Installation and operating conditions

Operational conditions	Temperature range -20 ... 60 °C, relative humidity 10 ... 95 %, without aggressive substances, condensing vapor and fog, Altitude up to 2000 m
Storing conditions	Temperature range -40 ... 85 °C, relative humidity 10 ... 95 %, without aggressive substances, condensing vapor and fog
EMC immunity zone	B (IEC 61000-6-2 compliant)
Protection class	III
Overvoltage category	II
Pollution degree	2
Ingress Protection (IEC 529)	IP 20
Operation position	Horizontal inside vertical enclosure
Installation	On DIN rail (EN 60715, 35 mm) into distribution box (holder and screws included)

Connectors

Connector purpose	Power supply	Other
Min. wire gauge	0.75 mm ² , AWG18	0.2 mm ² , AWG24
Max. wire gauge	2.5 mm ² , AWG14	1.5 mm ² , AWG16
Terminal pitch	5.08 mm	3.5 mm
Max. tightening torque	0.4 Nm	-
Connector type	Pluggable terminal blocks	

Power supply

Reverse polarity protection	Yes	
Rated voltage – SELV (recommended)	24 V _{DC}	
Absolute limits of input voltage	10.2 V _{DC} ... 32.2 V _{DC}	
Variant	LTE Cat 1 / Cat 4	Without LTE
Typical input current (at rated voltage, 24 V _{DC})	0.25 A	0.18 A
Max. input current (at rated voltage, 24 V _{DC})	1 A	0.7 A
RTC power supply	CR2032 lithium battery, lifetime approx. 10 years	

Dimensions and weights

Dimensions (W × H × D)	108 × 90 × 56 mm	
Weight	Approx. 240 g	
DIN holder variant	Default	Alternative
Name	AL	TSH-35
Holder thickness	3.5 mm	7 mm
Holder weight	61 g	14 g
Holder material	Aluminium	Plastic

Directive compliance

EMC, RED, RoHS, WEEE