NORVI

Expansions

For Industrial IOT Applications

Main Controller

Expansion Module

Expansion Module
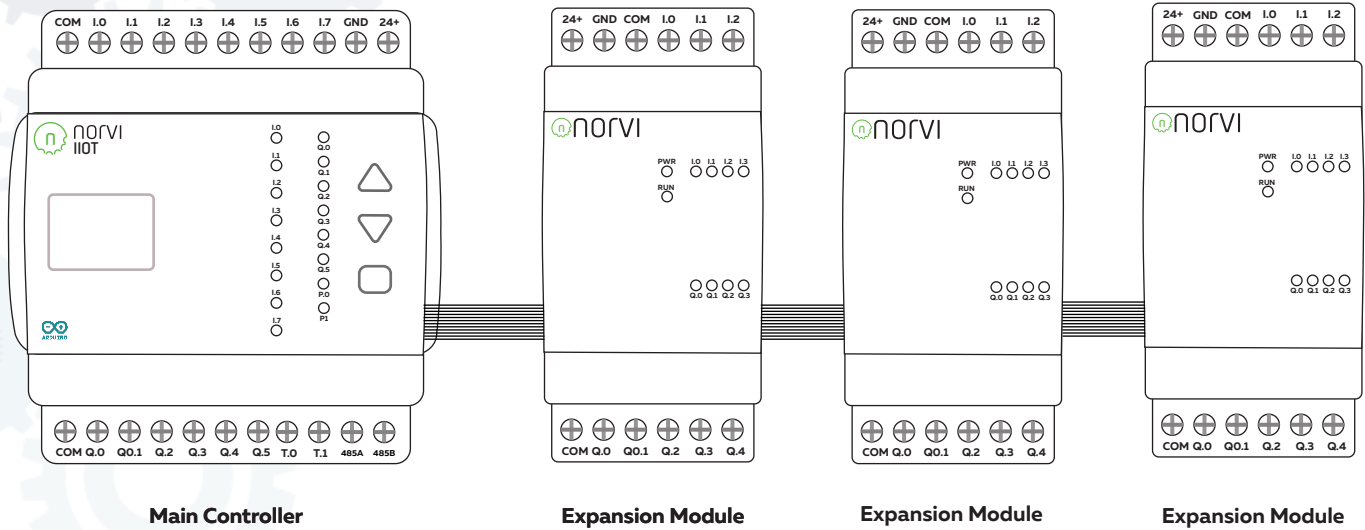
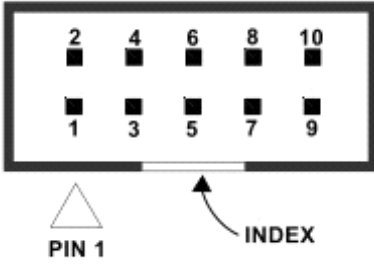**Expansion Module**

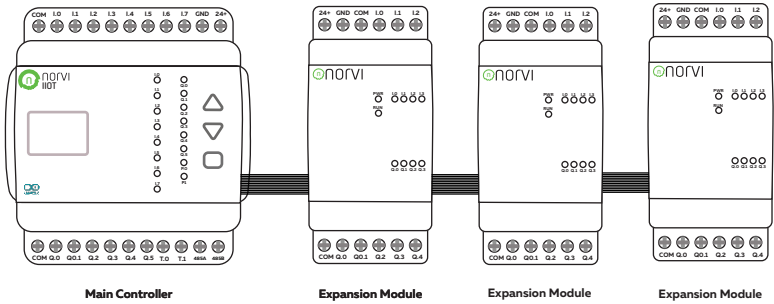# Expansion modules
Product lineup

How it works...

Expansion port

Connect the expansion modules to the side of the NORVI controllers. Expansion ports provides access to controller GPIO and UART / I2C connections.

PIN	ESP32 Connection
1	TXD0
2	IO33
3	RXD0
4	Not Connected
5	IO32
6	BOOT IO0
7	SCL IO17
8	Not Connected
9	SDA IO16
10	Ground

Daisy Chain Capability

| Main Controller | Expansion Module | Expansion Module | Expansion Module |

Connect upto 6 modules in series to yeild the max out of the controller

Product line....
Analog expansions

NORVI-EX-ANV01
Analog input 0 to 10V

4 channel 0 - 10V inputs with ADS1115 16 bit ADC provides high accuracy analog inputs.

Aquisition

**Texas Instruments ADS-1115
16bit ADC with PGA**

Interface with controller
I2C

Input voltage range upto 10V

Over voltage protection

Programmable Gain Amplifier

NORVI-EX-ANI01
Analog input 0 to 20mA

4 channel 0 - 20mA / 4 - 20mA inputs with ADS1115 16 bit ADC provides high accuracy analog inputs.

Aquisition

**Texas Instruments ADS-1115
16bit ADC with PGA**

Interface with controller
I2C

Maximum current 25 mA

Voltage upto 35 V

10 Ohm Low impedance

NORVI-EX-TEX01
Thermocuple reading

2 channel thermocuple interface, with cold junction compensation, straight temperature readouts with 0.25' C resolution.

Aquisition

**MAX31855 cold-junction compensated
thermocuple-digital converter**

Interface with controller
 I2C via SC18IS602B

Versions Available for Most Common Thermocouple Types:
K-, J-, N-, T-, S-, R-, and E-Type

Detects Thermocouple Shorts to GND or VCC

Detects Open Thermocouple

Allows readings as high as +1800°C and as low as -270°C

NORVI-EX-BR01
Load cell reading

2 channel load cell interface with HX711 24 bit ADC

Aquisition

HX711 24-Bit ADC for Weigh Scales

Interface with controller
 I2C via SC18IS602B

On-chip active low noise PGA with selectable gain
of 32, 64 and 128

Built-in power supply regulator for load-cell

Simultaneous 50 and 60Hz supply rejection

Selectable 10SPS or 80SPS output data rate

Product line....
Communication expansions

NORVI-EX-LR4XX
LoRa connectivity

LoRa communication module with the RYLR896 transceiver provides ultra-long range spread spectrum communication and high interference immunity whilst minimising current consumption. The module is certified by NCC and FCC.

Communication module

REYAX RYLR896 | 868 / 915 Mhz
REYAX RYLR406 | 426 / 433 / 470 Mhz

Interface with controller
AT commands via UART

Semtech SX1276 Engine

High efficiency Power Amplifier

127 dB Dynamic Range RSSI

Built-in and external antenna options

NORVI-EX-NB95X
Narrowband IoT

Nb-IoT communication module with the BC95-G provides ultra low power communication interface for NORVI controllers. The module supports the global bands making it applicable around the world with a super high sensitivity.

Communication module

Quectel BC95-G | :B1/B3/B5/B8/B20/B28
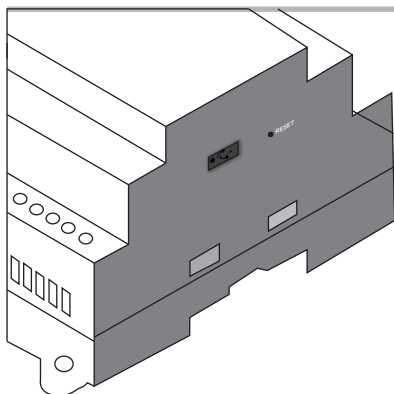**Quectel BC28-G | :B1/B3/B5/B8/B20/B28**

Interface with controller
AT commands via UART

extremely low power

Embedded Internet Services Protocols

Quectel Enhanced AT Commands

Built-in and external antenna options

✓ **TESTED**   High EMI Environments
Industrial Temperatures

For further inquiries and tech support
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