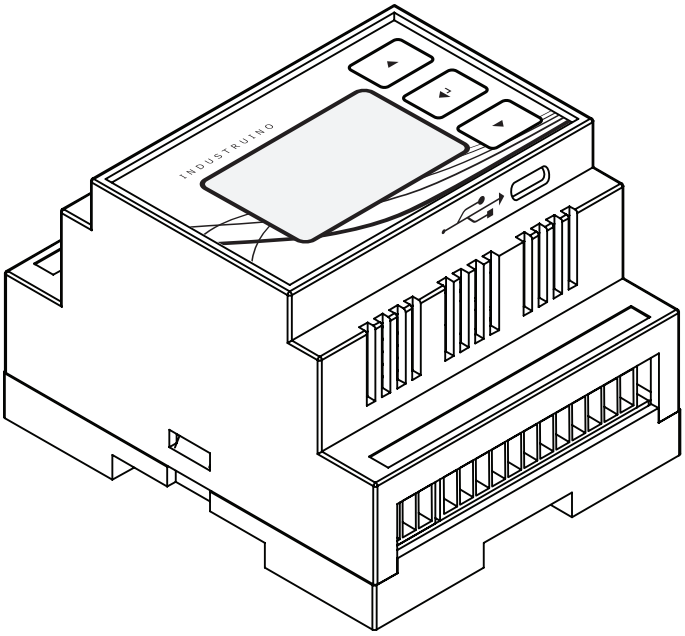
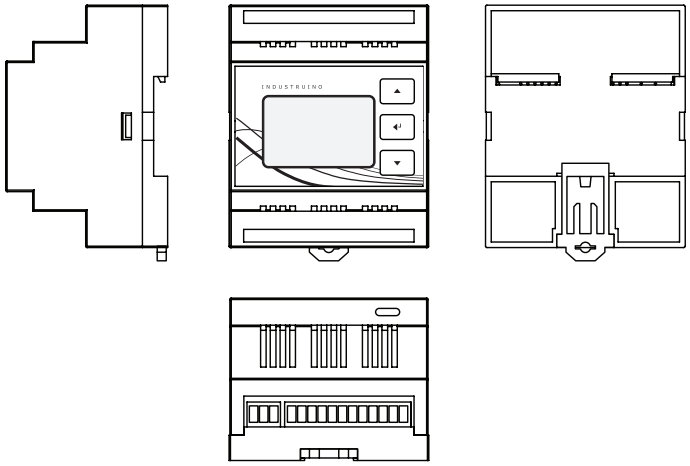
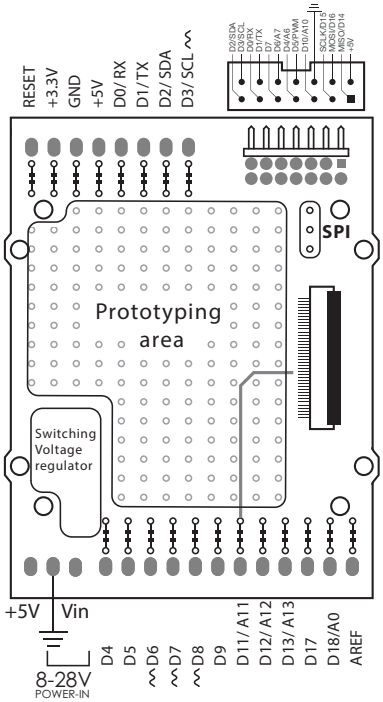
PROTO Datasheet





PROTO Baseboard Pinout



Notes

Industruino PROTO is an Arduino-compatible industrial control system that enables you to take your electronics project from the breadboard to a permanent installation. Inside the enclosure a large prototyping area is included to add your own circuitry.

*All GPIO on Arduino PROTO functions in the same way as an Arduino Leonardo board, no library is required.

*The GPIO signals of the MCU are by default connected to the external screw connectors. Narrow jumper traces situated next to the screw connectors on the inside of the enclosure can be cut through, to disconnect the GPIO signal from an external connector, so that the GPIO signal can be purposed for circuitry installed on the internal prototyping area.

*On 32u4 variant of PROTO, pin D13 is used to control the LCD backlight intensity. It can be disconnected from the backlight by remove the 0 Ohm 1206 resistor situated on the topboard. On 1286 variant of PROTO pin D13 is free to use without modification, pin D26 is used to control the intensity of the LCD backlight.

https://industruino.com/support

Document revision: Rev1.0. Specifications subject to change without notice.
Date: 14.05.2016

Installation	
Mounting	on 35 mm DIN rail, 4 spacing units wide
Supply voltage (Vin)	
Standard input voltage	12V / 24V
permissible range, lower limit (DC)	8 V
permissible range, upper limit (DC)	28 V
Digital inputs	
Number of digital inputs	14 (shared with digital outputs)
Type of digital input	GPIO
Input voltage	5V
Logic HIGH voltage	>1.9V
Logic LOW voltage	<0.9V
Maximum trigger frequency	4 MHz
Protection of digital outputs	ESD protection on MCU pins
Digital outputs	
Number of digital outputs	14 (shared with digital inputs)
Type of digital output	GPIO
Output voltage	5V
Maximum current per output	20mA
Maximum total current	200mA
Maximum switching frequency	4 Mhz
Protection of digital outputs	ESD protection on MCU pins
Analog inputs	
Number of analog inputs	7, off which 6 (32u4) / 5 (1286) are shared with digital I/O pins
Type of analog inputs	MCU built-in ADC
Range of voltage measurement	0-5V
Resolution	10Bit
Conversion rate	125 KHz
Protection of analog inputs	ESD protection on MCU pins
Analog Outputs	
Number of analog outputs	6 (on 32u4) / 4 (on 1286)
Type of analog outputs	PWM
Range of output voltage	0-5V
Resolution	8Bit
PWM frequency	490 Hz
Protection of analog outputs	ESD protection on MCU pins
Communication ports	
UART	
Voltage level	5V
Duplex type	full duplex
Data rate	2 Mbps
Expansion port (direct MCU control)	
Number of pins	14
Voltage level	5V
Protocols supported	SPI, I2C, UART, 9 GPIO's
Protection of expansion port	ESD, transients.
MCU	
MCU type	Atmega 32u4 or AT90USB1286
Clock speed	16 MHz
Flash	32 KB (32u4) / 128KB (1286).
SRAM	2.5 KB (32u4) / 8KB (1286).
EEPROM	1 KB
User Interface	
LCD	128x64 pixel FSTN with dimmable backlight
Push buttons	3 - push button membrane panel
Enviromental	
Protection class	IP20
Ambient operating temperature	0 - 55 °C
Dimensions	
Width	71.5 mm
Height	87 mm
Depth	58 mm
Weight	150 g