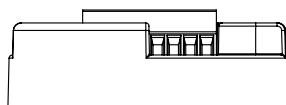
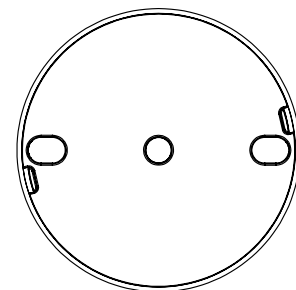
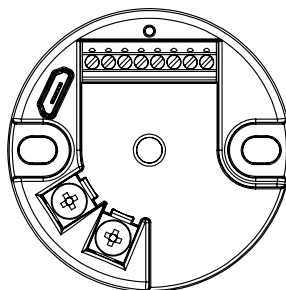
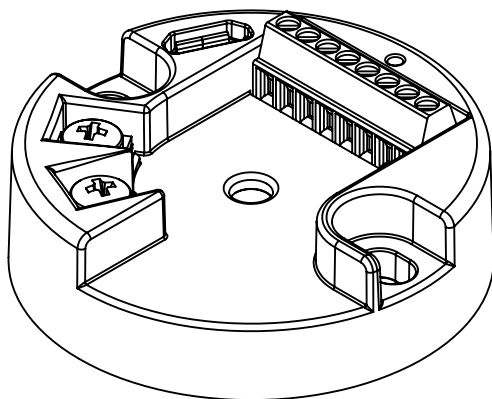
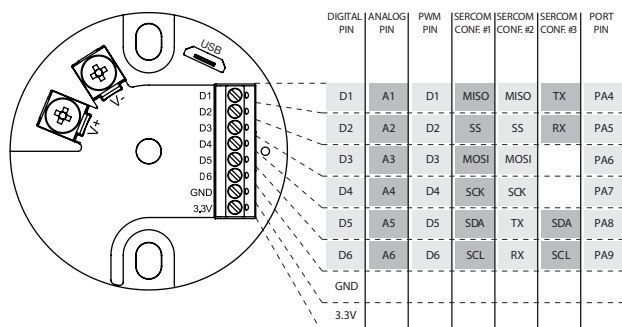




Industruino 4-20mA.ker Datasheet

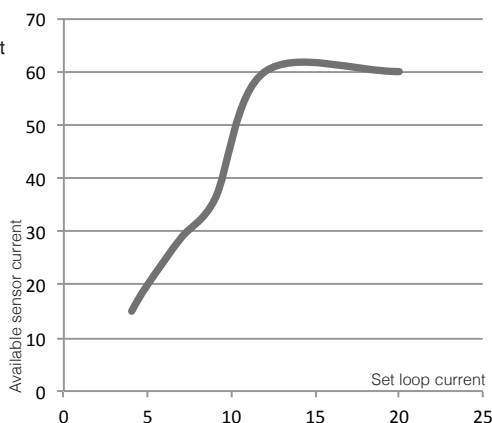


Block Diagram



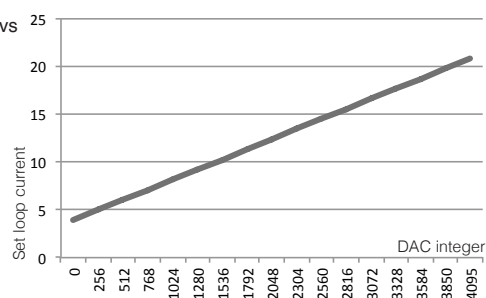
Set loop current vs Available sensor current

Test conditions
Loop supply voltage = 24V
Loop load = 500 Ω
Sensor voltage = 3.3V



Linearity - DAC integer vs Set loop current

Test conditions
Loop supply voltage = 24V
Loop load = 500 Ω



Supply voltage	
Standard input voltage	24V
permissible range, lower limit (DC)	12 V
permissible range, upper limit (DC)	32 V
Input protection	Reverse polarity, ESD, transients, bursts, HF coupling

Input (sensor side)	
Number of GPIO pins	6
Number of ADC channels	6 (shared with GPIO)
Number of DAC channels	1 (shared with GPIO)
SERCOM types	i2c, SPI, UART
Number of simultaneous SERCOM peripherals	2 (of different type)
Sensor supply voltage	3.3V / 2.8V (jumper selectable)
Sensor supply current (see chart)	>15mA (24V supply, loop current = 4mA, 500 Ω load)
Sensor power management	Ultra-Low Ron load switch under GPIO control
Terminal type	8-pin 2.54mm screw connector terminal

Processing	
Microcontroller type	ATSAML21E18B
Instruction set	32 bit
Operating frequency	48 MHz
Flash memory	256 KB
RAM memory	32 KB
Programming environment	Arduino IDE
Programming interface	Micro-USB
Debugging interface	SWD

Output (loop side)	
Output signal	4-20 mA
Signal conversion	DAC under MCU software control
DAC resolution	12 bit
DAC speed	1 MSPS
Under-range limit	3.8mA (DAC = 0)
Over-range limit	20.7mA (DAC = 4095)
Compliance voltage	14V typical
Max load impedance	700 Ω with 24V supply, 60mA@3.3V sensor load. (V supply - 10V) / 0.020
Switch on delay	2 seconds (during power up output current = 3.7mA)
Terminal type	2x M3 screw terminal

Environmental	
Protection class	IP20 / IP66 when installed in appropriate sensor head
Ambient operating temperature	-40 to +85 $^{\circ}$ C

Approvals	
CE	EMC directive, RoHS directive

Construction	
Enclosure	UL94 V-0 flame retardant PA66 polyamide

Dimensions	
Diameter	44 mm
Height	15 mm
Weight	50 g