

SmartWheels Mini Configuration

SWM-2-1-1-C0-E0-G1

Configuration: ancit_wiper_ctrl | Exported: 09/06/2026, 05:11 am | Prepared by buildurecu.com

Configuration Summary

Stamp Position	Variant	Stamp Signal Conditioners	Pins
Stamp-1	S1-C0	4 Channel Pull Down Digital Inputs + 4 Channel Pull Down Analog Inputs	8
Stamp-2	S2-E0	4 Channel High Side Output (1 Amp)	6
Stamp-3	S3-G1	4 Channel High Side Power Output (4 Amps) - (No Trip limit)	6
Total			20

Stamp-1: AI - S1-C0 (C0)

Stamp Signal Conditioners: Designed for applications requiring 4 high speed digital inputs with operation upto 33V and 4 analog inputs

4 independent channels of high speed Pull-down digital input

- 33K Pull-down resistance per input
- Operation for entire voltage range of VCU upto 33V
- Fixed low level threshold voltage at 3.8V
- Fixed high level voltage threshold at 8.9V
- Frequency upto 50 KHz
- Input transient voltage protection.
- Ability to sustain short to VBAT and short to ground.
- Input capture on all 4 channels

4 independent channels of analog inputs

- 0-10 Volts
- 48K Pull-down resistance per input
- frequency upto 100Hz
- Input transient voltage protection.

#	Conn Pin	Pin Label	IO Type	Signal Cond	Wire	MCU Pin	Ch ID	User Label	User Remarks
1	B1	S1-IO1	Digital Input	Pull-down-12V/24V	Orange	PTD3	DI_PD_CH1	MOTOR_POS_IN	MOTOR POSISTION IN
2	A1	S1-IO2	Digital Input	Pull-down-12V/24V	Grey	PTA1	DI_PD_CH2	-	UNUSED
3	B2	S1-IO3	Digital Input	Pull-down-12V/24V	Pink	PTE6	DI_PD_CH3	-	UNUSED
4	A2	S1-IO4	Digital Input	Pull-down-12V/24V	Yellow	PTE2	DI_PD_CH4	-	UNUSED
5	C2	S1-IO5	Analog Input	Pull-down-0-10V 48K	White	PTD2	AI_PD_CH5	-	UNUSED
6	A3	S1-IO6	Analog Input	Pull-down-0-10V 48K	Purple	PTD4	AI_PD_CH6	-	UNUSED
7	B3	S1-IO7	Analog Input	Pull-down-0-10V 48K	Green	PTB13	AI_PD_CH7	-	UNUSED
8	A4	S1-IO8	Analog Input	Pull-down-0-10V 48K	Blue	PTB12	AI_PD_CH8	ROTARY_SWITCH	ROTARY_SWITCH

Stamp-2: DO - S2-E0 (E0)

Stamp Signal Conditioners: Designed for applications requiring low current protected high side output capable of 1A each over 10.8V to 33V.

- 4 independent channels capable of driving upto 1A each over entire VBAT input range of 10.8V to 33V
- Supports output PWM upto 10 KHz
- Input transient voltage protection with per channel onboard resettable fuse.
- Ability to sustain short to VBAT and short to ground
- Trip current per channel set to 1A with time to trip at 100mS

#	Conn Pin	Pin Label	IO Type	Signal Cond	Wire	MCU Pin	Ch ID	User Label	User Remarks
1	F2	S2-IO1	Digital Output	High Side-VBAT 1 Amp	Orange	PTE4	DO_HS_CH1	-	NC
2	F1	S2-IO2	Digital Output	High Side-VBAT 1 Amp	Grey	PTE5	DO_HS_CH2	-	NC
3	E1	S2-IO3	Digital Output	High Side-VBAT 1 Amp	Pink	PTE10	DO_HS_CH3	-	NC
4	D1	S2-IO4	Digital Output	High Side-VBAT 1 Amp	Yellow	PTE11	DO_HS_CH4	-	NC
5	C1	S2-IO5	Digital Input	VIN_2	White	-	VIN	-	-
6	E2	ISO2-GND	Digital Input	GND_2	Black	-	GND	-	-

Stamp-3: DO - S3-G1 (G1)

Stamp Signal Conditioners: Designed for applications requiring High current AEC-Q100 certified high side output capable of 4A each over 10.8V to 33V.

4 independent channels capable of driving up to 4A each over entire VBAT input range of 10.8V to 33V

- Supports output PWM upto 2 KHz (at reduced current)
- Input transient voltage protection with short circuit protection.
- Ability to sustain short to VBAT and short to ground
- Trip current - max 28A with thermal throttle.
- Onboard current measurement with diagnostic output.

Pin Info: Diagnostics Enable: PTC1 (Digital Output)

Diag Channel Select: PTC0 (Digital Output)

Isense CH1/CH2: PTC15 (Analog Input)

Isense CH3/CH4: PTC14 (Analog Input)

#	Conn Pin	Pin Label	IO Type	Signal Cond	Wire	MCU Pin	Ch ID	User Label	User Remarks
1	G4	S3-IO1	Digital Output	High Side-VBAT 4A (No Trip limit)	Orange/Blue	PTD15	DO_HS_CH1	-	MOTOR - HIGH SPEED (Wire-5)
2	G3	S3-IO2	Digital Output	High Side-VBAT 4A (No Trip limit)	Grey	PTD16	DO_HS_CH2	-	MOTOR - LOW SPEED (Wire-2)
3	H4	S3-IO3	Digital Output	High Side-VBAT 4A (No Trip limit)	Blue	PTD1	DO_HS_CH3	-	-
4	H3	S3-IO4	Digital Output	High Side-VBAT 4A (No Trip limit)	White/Grey	PTD0	DO_HS_CH4	-	-
5	H2	S3-IO5	Digital Input	VIN_2	Yellow	-	VIN	-	-
6	G2	ISO3-GND	Digital Input	GND_2	Black	-	GND	-	-

Communication Interfaces

#	Conn Pin	Pin Label	Protocol	Wire Color	MCU Pin	Channel ID	User Label	User Remarks
1	F3	CAN0-H	CAN	Orange	PTC2	CAN0_RX	-	-
2	F4	CAN0-L	CAN	Grey	PTC3	CAN0_TX	-	-
3	E3	CAN2-H	CAN	Orange	PTC16	CAN2_RX	-	-
4	E4	CAN2-L	CAN	Grey	PTC17	CAN2_TX	-	-
5	-	-	LIN	-	PTD6	LIN2_RX	-	-
6	-	-	LIN	-	PTD5	DO_LIN_SLP	-	-
7	D3	LIN2-OUT	LIN	Pink	PTD7	LIN2_TX	-	-
8	C4	I2C-SCL	I2C	Yellow	PTA3	I2C0	-	-
9	C3	I2C-SDA	I2C	Green	PTA2	I2C0	-	-

Power & Other Fixed Pins

#	Conn Pin	Pin Label	Wire Color	MCU Pin	User Label	User Remarks
1	B4	KL15-IN	White	PTC9	-	-
2	D2	5V-OUT	Purple	-	-	-
3	G1	GND	Black	-	-	-
4	H1	V_IN	Red	-	-	-
5	-	RGB_RED	On-Board	PTE8	-	-
6	-	RGB_GREEN	On-Board	PTB5	-	-
7	-	RGB-BLUE	On-Board	PTB4	-	-

Hardware Reference

