SmartWheels Mini Configuration

SWM-2-1-1-A0-K0-G0

Configuration: ancit_headlight | Exported: 09/06/2026, 05:10 am | Prepared by buildurecu.com

Configuration Summary

Stamp Position	Variant	Stamp Signal Conditioners	Pins
Stamp-1	S1-A0	8 Channel Pull Down Digital Input	8
Stamp-2	S2-K0	4 Channel PWM to Analog Output (0-10V)	6
Stamp-3	S3-G0	4 Channel High Side Power Output (4 Amps)	10
Total			**24**

Stamp-1: DI - S1-A0 (A0)

Stamp Signal Conditioners: *8 independent channels of high-speed digital inputs with Pull down*

- Provides 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
- Supports inputs frequency upto 50 KHz
- Input transient voltage protection.
- Ability to sustain short to VBAT and short to ground
- Timer Input capture on 5 channels

#	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	INDI_LEFT_IN	Indicator Left Input
2	A1	S1-IO2	Digital Input	Pull-down-12V/24V	Grey	PTA1	DI_PD_CH2	INDI_RIGHT_IN	Indicator Right Input
3	B2	S1-IO3	Digital Input	Pull-down-12V/24V	Pink	PTE6	DI_PD_CH3	PARKING_IN	Parking Input
4	A2	S1-IO4	Digital Input	Pull-down-12V/24V	Yellow	PTE2	DI_PD_CH4	NC	NC
5	C2	S1-IO5	Digital Input	Pull-down-12V/24V	White	PTD2	DI_PD_CH5	LOW_BEAM_IN	Low Beam Input
6	A3	S1-IO6	Digital Input	Pull-down-12V/24V	Purple	PTD4	DI_PD_CH6	HIGH_BEAM_IN	High Beam Input
7	B3	S1-IO7	Digital Input	Pull-down-12V/24V	Green	PTB13	DI_PD_CH7	NC	NC
8	A4	S1-IO8	Digital Input	Pull-down-12V/24V	Blue	PTB12	DI_PD_CH8	LEVELLER_IN	Leveller Analog Input

Stamp-2: AO - S2-K0 (K0)

Stamp Signal Conditioners: *Designed for applications requiring 4 channel analog output 0-10V upto 60mA*
4 independent channel with 0-10V Output
- Supports output sinusoidal frequency upto 4 KHz
- 100KHz PWM signal with 0-100% Duty Cycle required at Input
- Analog feedback for precise analog output and detection of fault conditions
- Input transient voltage protection
- Ripple Voltage at 50% duty cycle independent of load current at ~30 mVpp
- Ability to sustain short to ground and short to VBAT

#	Conn Pin	Pin Label	IO Type	Signal Cond	Wire	MCU Pin	Ch ID	User Label	User Remarks
1	F2	S2-IO1	Analog Output	PWM to Analog Output-0-10V	Orange	PTE4	AO_PWM_CH1	MOTOR_OUT	Leveller Analog Ouput - FTM2 (CH-2)
2	F1	S2-IO2	Analog Output	PWM to Analog Output-0-10V	Grey	PTE5	AO_PWM_CH2	-	-
3	E1	S2-IO3	Analog Output	PWM to Analog Output-0-10V	Pink	PTE11	AO_PWM_CH3	-	-
4	D1	S2-IO4	Analog Output	PWM to Analog Output-0-10V	Yellow	PTE10	AO_PWM_CH4	-	-
5	C1	S2-IO5	Digital Input	VIN_2	White	-	VIN	-	-
6	E2	ISO2-GND	Digital Input	GND_2	Black	-	GND	-	-

Stamp-3: DO - S3-G0 (G0)

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 over current and short circuit protection.

- Ability to sustain short to VBAT and short to ground

- Trip current per channel set to 4A.

- Onboard current measurement with diagnostic output.

- Total current budget 20A (all 4 channels)

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	Orange/Blue	PTD15	DO_HS_CH1	LOW_BEAM_OUT	Low Beam Output (To Relay)
2	G3	S3-IO2	Digital Output	High Side-VBAT 4A	Grey	PTD16	DO_HS_CH2	HIGH_BEAM_OUT	High Beam Output (To Relay)
3	H4	S3-IO3	Digital Output	High Side-VBAT 4A	Blue	PTD1	DO_HS_CH3	INDICATOR_OUT	Indicator Output (To Relay)
4	H3	S3-IO4	Digital Output	High Side-VBAT 4A	White/Grey	PTD0	DO_HS_CH4	PARKING_OUT	Parking Light Output (Direct to Light)
5	H2	S3-IO5	Digital Input	VIN_2	Yellow	-	VIN	-	-
6	G2	ISO3-GND	Digital Input	GND_2	Black	-	GND	-	-
7	-	-	Digital Output	Stamp Specific - DO	-	PTC1	DO_DIAG_ENABLE	-	-
8	-	-	Digital Output	Stamp Specific - DO	-	PTC0	DO_DIAG_CH_SEL	-	-
9	-	-	Analog Input	Stamp Specific - AI	-	PTC15	AI_ISENSE_CH1_2	-	-
10	-	-	Analog Input	Stamp Specific - AI	-	PTC14	AI_ISENSE_CH3_4	-	-

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	-	-

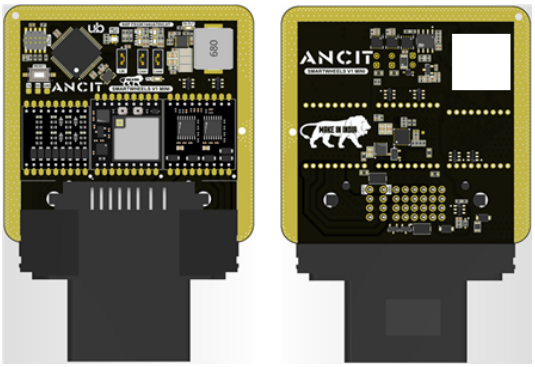
Power & Other Fixed Pins

#	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	-	-

Project Notes

#	Note
1	NOTE-1
2	NOTE-2

Hardware Reference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