Hardware Specs

Master v10 - Technical Specifications

Power Management	• Wide main supply voltage range 9V-60VDC 500mA • Single-cell battery management (≤ 4.2V; charge ≤0.8A; discharge protection circuit)
Bluetooth / ANT+	• Bluetooth Low Energy 5.0 compatible • PCB antenna • Nordic NRF52840-QIAA-R chipset
Cellular connectivity (Compatible with Multiple mobile communication standards worldwide)	• LTE-M/NB-IoT communication for 4G networks • GSM/GPRS quad-band communication for 2.5G networks • U-blox SARA R422M8S chipset • Embedded SSL for secure & encrypted communication • MQTT communication protocol for lightweight and robust applications
Global Navigation Satellite System	• GPS, Beidou, GLONASS and Galileo are supported • External antenna designed to be positioned under the motor cover
Onboard flash memory	• 8MB
Accelerometer	• 3-axis digital accelerometer

Input/Output	• CANbus communication (collect, store and transmit data from an ebike and issue commands)
	• 3x general purpose GPIOs
	  ○ 3x 5VDC Or 3x 3.3VDC GPIO
	  ○ Or 1x 5V Or 3.3V UART TX/RX + 1x 5VDC Or 1x 3.3VDC GPIO
	• Digital configurable output for peripheral devices:(e.g. a ring lock, buzzer)
	  ○ 5VDC / 1A (5W)
	  ○ 8VDC / 0.62A (5W)
	  ○ 12VDC / 0.41A (5W)
	• HV output / 1A (input voltage to output) to provide main battery power to 3rd party devices
	• 5VDC / 1A (5W) output
	• 5VDC / 500mA (2.5W) output
	• Wakeup line (open drain output)

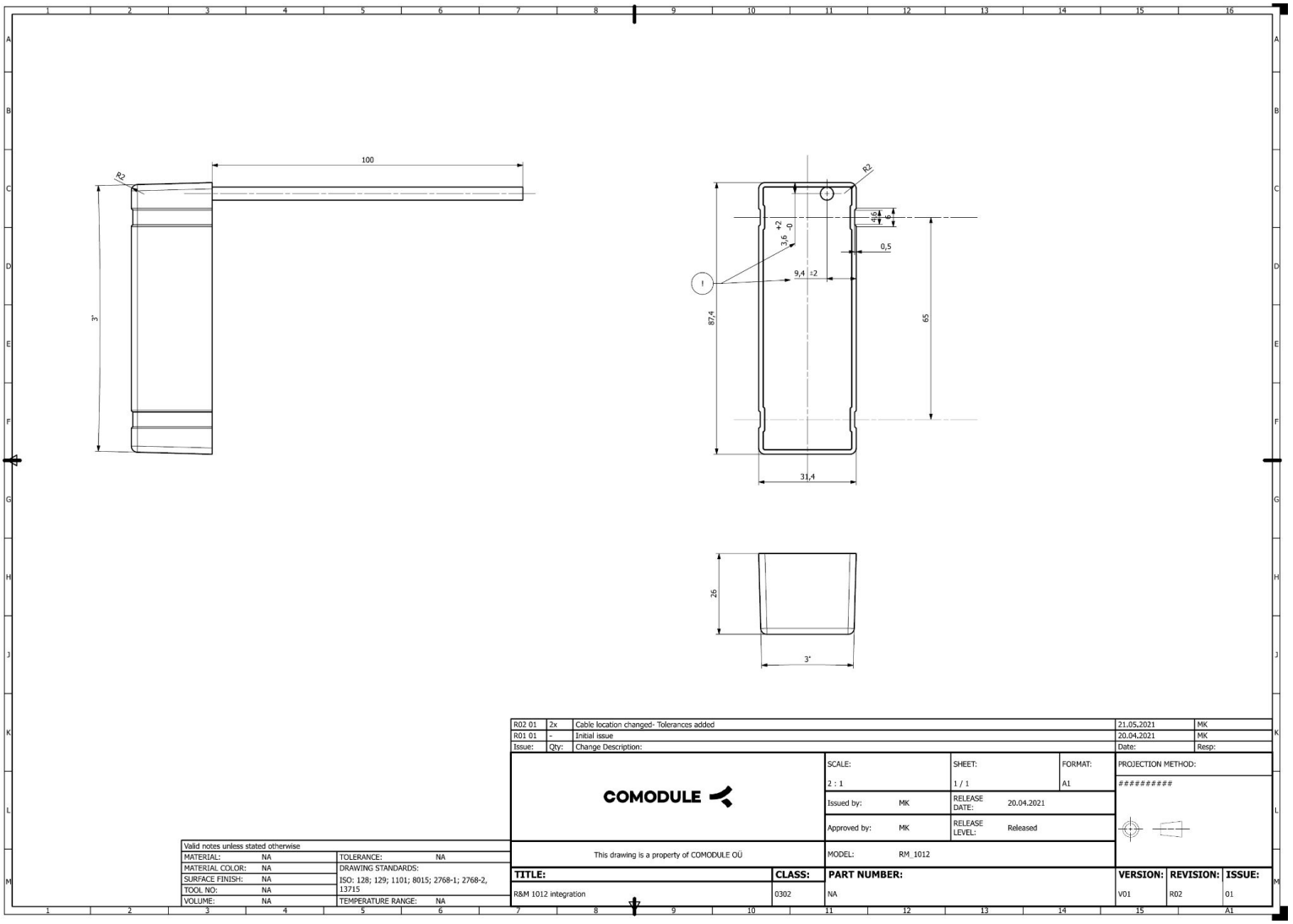
Connector types	• Z809FG Higo Mini F 8-pole male
Size	• 87X31x26mm (1012 casing w/o fixation points)
IP Class	• IP66

Environmental restrictions	• Storage temperature -20 to 45°C (90 days)
	• Operating temperatures:
	  ○ charge 0 to +45°C
	  ○ discharge -20 to 60°C

Backup Battery	• Rated capacity 2500 mAh • Nominal voltage 3.6 V
Certifications (Further certifications available upon request)	• CE • ECE R10

Master v.10 - 1012 casing

Main unit profile dimensions and length



Issue:	Qty:	Change Description:	Date:	Resp:
R02 01	2x	Cable location changed- Tolerances added	21.05.2021	MK
R01 01	-	Initial issue	20.04.2021	MK

COMODULE

SCALE: 2 : 1	SHEET: 1 / 1	FORMAT: A1	PROJECTION METHOD: ##########
Issued by: MK	RELEASE DATE: 20.04.2021		
Approved by: MK	RELEASE LEVEL: Released		

Valid notes unless stated otherwise

MATERIAL:	NA	TOLERANCE:	NA
MATERIAL COLOR:	NA	DRAWING STANDARDS:	
SURFACE FINISH:	NA	ISO: 128; 129; 1101; 8015; 2768-1; 2768-2,	
TOOL NO:	NA	13715	
VOLUME:	NA	TEMPERATURE RANGE:	NA

MODEL: RM_1012

TITLE:	CLASS:	PART NUMBER:	VERSION:	REVISION:	ISSUE:
R&M 1012 integration	0302	NA	V01	R02	01