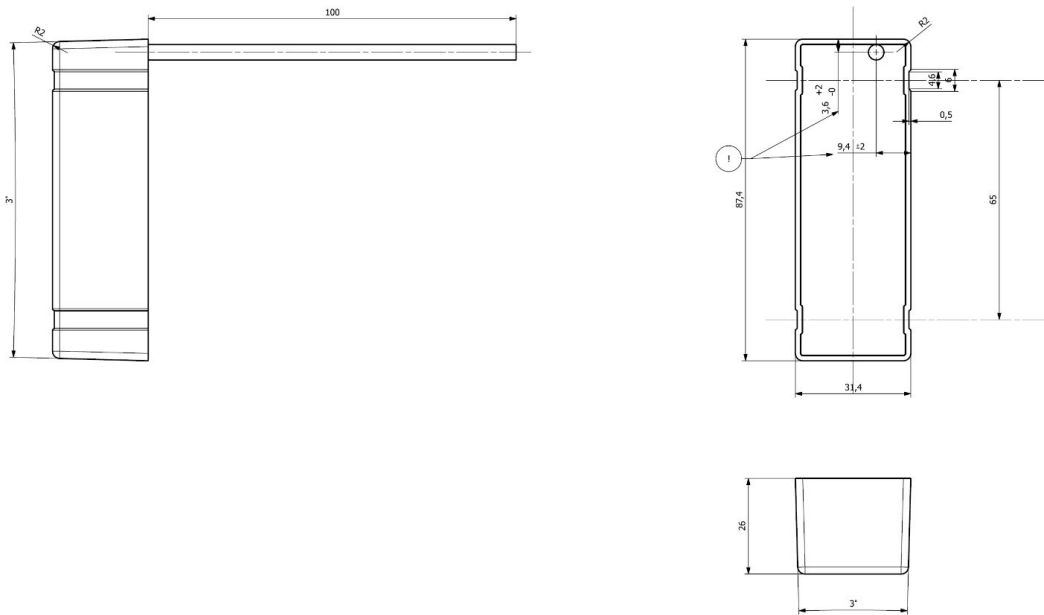


Master v10 - Technical Specifications

Power Management	- Wide main supply voltage range 9V-60VDC 500mA - Single-cell battery management ($\leq 4.2V$; charge $\leq 0.8A$; 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



Valid notes unless stated otherwise:

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

R02 01	2x	Cable location changed- Tolerances added				21.05.2021	MK	
R01 01	-	Initial issue				20.04.2021	MK	
Issue:	Qty:	Change Description:				Date:	Resp:	
COMODULE			SCALE:	SHEET:	FORMAT:	PROJECTION METHOD:		
			2 : 1	1 / 1	A1	*****		
			Issued by: MK	RELEASE DATE: 20.04.2021				
			Approved by: MK	RELEASE LEVEL: Released				
This drawing is a property of COMODULE OÜ			MODEL: RM_1012					
TITLE:		CLASS:	PART NUMBER:	VERSION: REVISION: ISSUE:				
R&M 1012 integration		0302	NA	V01			R02	01