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PANACEA
Meter Collector



Product Overview

The FC-777 PANACEA Collector is a modular IoT data acquisition terminal designed for non-invasive retrofitting of traditional mechanical water/gas meters. It features replaceable communication modules and batteries, addressing challenges such as difficult retrofitting and high maintenance costs, while providing a future-proof data collection solution for water and gas industries.

Key Features

- **Modular Design, Future-Proof**
  Hot-pluggable communication modules (NB-IoT / LoRaWan / WMbus / Wi-SUN / 4G Cat.1) adapt to network evolution, extending product lifecycle and protecting customer investments.

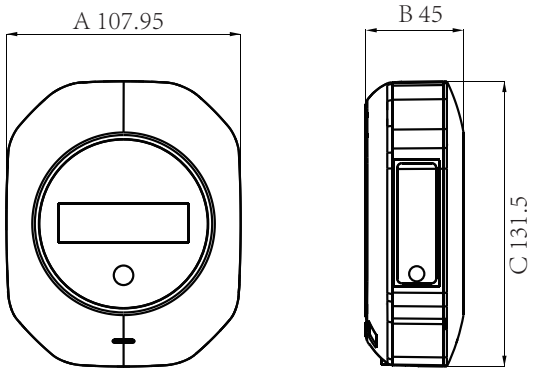
- **Long Battery Life, Easy Maintenance**
  User-replaceable lithium-thionyl chloride battery supports external battery expansion packs, reducing maintenance costs while ensuring ultra-long operation.

- **Versatile Compatibility**
  Compatible with various sensor heads (image recognition/magnetoresistive pulse/IR/ultrasonic) to cover mechanical, pulse, and ultrasonic meters.

- **Industrial-Grade Reliability**
  IP68 rating and-40℃ to +85℃ operating range ensure stable performance in harsh environments.

Physical Dimensions

Dimensions(mm)		
A	B	C
107.95	45	131.5



Technical Specifications

Category	Item	Details
Mechanical & Environmental	Protection Rating	IP68 (submersible up to 1.5m depth)
	Operating Temperature	-40℃ ~ +85℃
	Storage Temperature	-45℃ ~ +90℃
	Housing Material	(UV)Flame-retardant ABS+PC, UV-resistant
Electrical	Power Supply	User-replaceable ER18505 Li-$SOCl_2$ battery
	Battery Life	≥6 years (1 report/day; varies with frequency and network conditions)
	Standby Current	≤ 10 μA (MCU deep sleep)
	Peak Current	≤ 500 mA (during transmission)
Data Acquisition	Methods	Magnetoresistive/reed pulse, IR (ultrasonic meters)
	Reporting Interval	Remotely configurable (1 min ~ 24 hours, default: 24 hours)
	Data Storage	Local storage ≥366 days of daily data, supports offline transmission
Communication	Module Interface	Standard hot-pluggable port with anti-tamper design
	Supported Protocols	NB-IoT (B3/B5/B8...)
		4G Cat.1
		LoRaWAN
		WMbus
		Wi-SUN
		via module replacement
	RX Sensitivity	NB-IoT: ≤ -129 dBm
		4G Cat.1: ≤ -100 dBm
		LoRaWan: -138dBm@SF=12
		WMbus: -104dBm@100kbps
		Wi-SUN: -110 dBm @ 50 kbps
	TX Power	23 dBm ±2dB
	Data Success Rate	≥ 99.9% (in stable network conditions)
Reliability & Lifespan	MTBF	≥ 100,000 hours
	Mechanical Life	Battery compartment and latches withstand ≥500 insertions/cycles
	Module Plug Life	≥ 100 cycles

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