NRC

Namdal Ressurs

Connect

WASTE CONTAINER ACCESS CONTROLLER

ABOUT US

NAMDAL RESSURS AS

Namdal Ressurs AS was established in 1991, and has since then supplied equipment and other consumables to the waste industry in Norway. We are certified according to the NS-EN ISO 9001 and 14001 standards.

We have worked with sensory technology and electronic control of our solutions since 2014.

In 2019 we established a subsidiary in Sweden, Namdal AB. In 2021 we established our own service company named Eco Service, and in 2021 we strenghtened our position in the technology developement and bought Fieldata AS, a tech-sompany based in Trondheim.

CPS Consulting

CPS Consulting is an embedded technology company that combine the latest hardware and software technologies to create advanced connected products for its customers.

Focused on understanding the customers needs they propose and define solutions. They are embedded experts with deep knowledge of modern web technologies, and develop both hardware an software, and help manage both teams and projects.

NORBIT

NORBIT is a global provider of tailored technology to carefully selected niches. The business is organised in three business segments. The Oceans segment, The Intelligent Traffic Systems (ITS) and The Product Innovation & Realization (PIR) segment.

All companies and employees in NORBIT share the same vision: To be recognized as world-class, enabling people to explore more.

NORBIT is headquartered in Trondheim, Norway, with manufacturing facilities in Selbu and Røros, Norway and 12 offices and subsidiaries around the world.

TARGETED DEPOT CONTAINERS
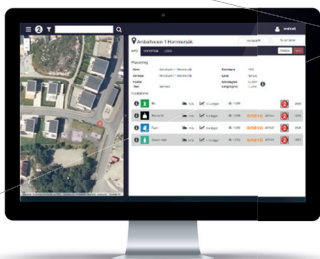
- **IMPROVE RECYCLING**
  - Incentivise users
  - Improve administration monitoring
  - Enable "Pay as you throw"
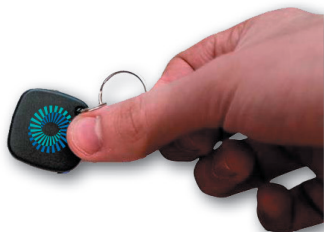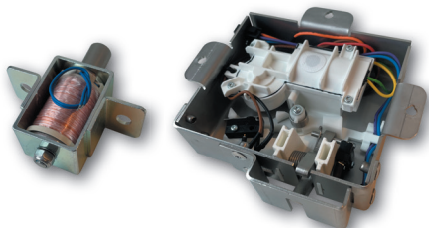
- **OPEN INFRASTRUCTURE**
  - Integrates with admin systems of choice
  - Integrates with 3rd party BLE enabled sensors

- **RESTRICTS UNAUTHORIZED ACCESS**
  - Public waste containers
  - Private, industrial waste containers
  - Protects all waste fractions

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SUPPORTS
MANAGEMENT PORTALS

SUPPORTS
NFC KEYS

SUPPORTS
DIGITAL KEYS

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ABOUT

- **5G CLOUD CONNECTED**
  - Access Control Management
  - Open web API
    - REST for config. MQTT for events

- **KEYS**
- Smartphone
- NFC tags
- Cloud

- **CONFIGURABLE LOCK INTERFACE**
  - Solenoids
  - Latch solenoids
  - DC motors
  - 3x position switches

- **LARGE COLOR DISPLAY**
  - Remote configurable

- **SENSOR GATEWAY**
  - Open Bluetooth protocol

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SPECIFICATIONS

SIZE and WEIGHT
Height: 135 mm
Width: 70 mm
Depth: 20 mm
Weight: 300g

DISPLAY
2,8"
240 x 230 px
262K colors
High brightness
LED backligh

CELLULAR and WIRELESS
NB-IoT NB2, B3,5,8,20
Bluetooth 5,2
NFC ISO18092, ISO14443A,
ISO14443B, ISO15693 and FeliCa™

EXTERNAL CONNECTORS
VCC (02T-JWPF-VSLE-S9 and
Motor/Switches (08T-JWPF-VSLE-S

MOTOR INTERFACE (Lock)
DC and PWM 3,3 V - 15 V VCC (Max 1,5 A)

POWER
3,3 V - 15 V VCC (Minimum 0,5 A)

SENSORS
Temperature, Ambient light,
Three-axis Accelerometer and gyroscope

SIM CARD
Chip SIM (MFF" UICC)

LANGUAGES
Norwegian, English, on request

ENVIRONMENTAL REQUIREMENTS
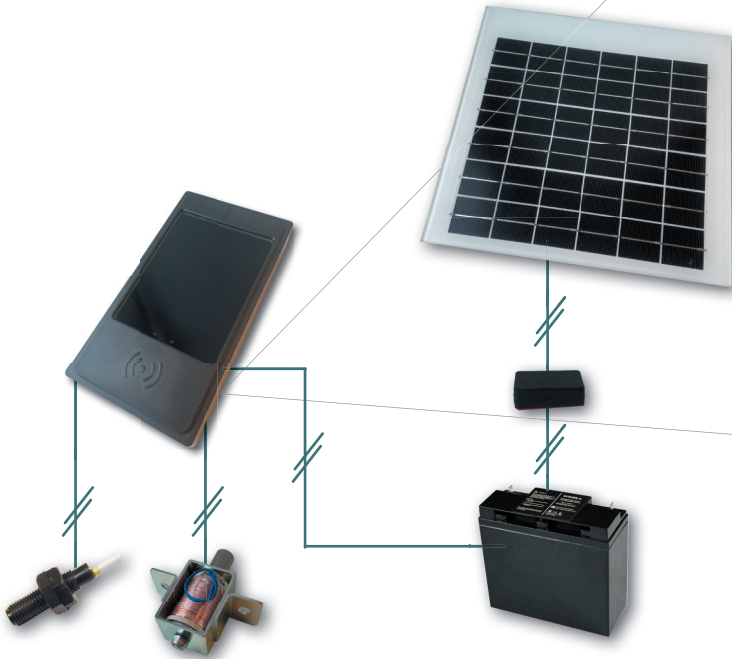Operating ambient temperature: -30 °C to 70 °C
Ingress protection IP67
EN 62262 (kinetic energy) IK08

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SUB-VIL CONFIGURATION

SOLENOID & SECONDARY CELL/SOLAR PANEL CONFIG
- Scenario: 1LTE Synk and 15 Unlocks per day
- Estimated lifetime: Over 10 years*
- Solarpanel*: Average production >1,2 mA)
- Battery bank: 12 V e.g. 20 Ah LiFePO or LedAcid

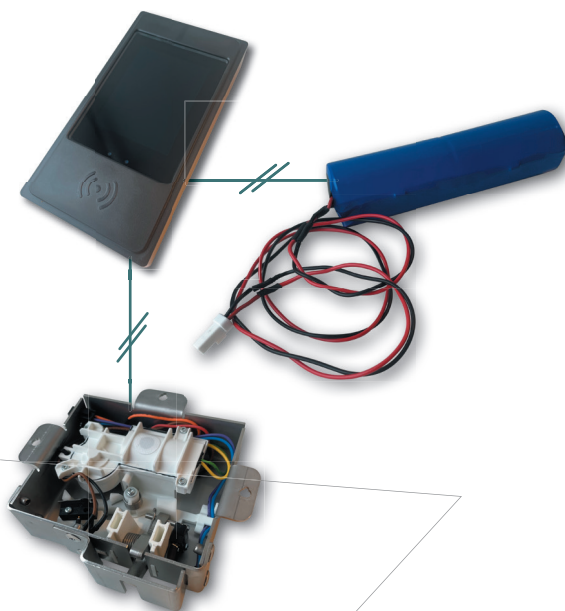|	
• Solenoid power usage	58,8 %
• Base power usage	19,5 %
• Display power usage	17,6 %
• NFC power usage	2,9 %
• LTE power usage	1,2 %

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C-MODEL CONFIGURATION

LOW POWER DC MOTOR & PRIMARY CELL CONFIG
- Scenario: 1LTE Synk and 15 Unlocks per day
- Estimated lifetime: 4,5 years at average 2 °C
- Battery pack: 2x ER34615M (LiSOCl2)

- Base power usage   41,3 %
- Display power usage   42,9 %
- NFC power usage   7,2 %
- DB-Motor power usage   5,7 %
- LTE power usage   2,9 %

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EU Declaration of Conformity

To whom it may concern:

Herby, Namdal Ressurs AS declares under its sole responsibility that NRC Access [NRC1] is in compliance with the essential requirements relevant provisions of Radio Equipment Directive (RED) 2014/53/EU and Restriction of use of certain hazardous substances (RoHS) Directive. The conformity has been reviewed by Notified Body Nemko AS, Philip Pedersens vei 11, 1366 Lysaker, Norway

Technology	Product name	Hardware release
LTE Cat NB1/NB2	NR Access (NRC1)	V 1.0.3 B2 or later
Bluetooth low energy		
NFC		

Essential Rewuirements

Radio Equipment Directive 2014/53/EU	Standards
EMC	EN 301 489-01:V2.2.3
(Nemko Report No. E21138)	EN 301 489-17:V3.2.4
	Draft EN 301 489-52:V2.1.1.2
	ETSI EN 300 330 V2.1.1(2017-02)
13.56 MHz RFID	ETSI EN 300 328 V2.2.2(2019-07)
(Nemko Report No. 431360-01-R00)	ETSI EN 301 908-1 V13.1.1 (2019-11)

Radiated spurious Emissions
(Nemko Report No. 431360-02-R00)

Name: Rolf Ovesen
Position: CEO
Date of issue: 01/10/21

Signature:

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NRC1-TL
20210923

CE

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