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Technical specifications of the ZAM A.70 reader

- General Information -

- Dimensions of the upright housing: height: 1020 mm, diameter: 220 mm.
- Housing for bolting to the floor, walls, freestanding or terminal (separate terminal – keyboard/display/head).
- Display size: 70 x 40 mm.
- Reach of effect of contactless cards (8 cm MIFARE, 12 cm UNIQUE).
- Very high number of cards authorized for making entries – 10,000.
- Very high number of memorized records - 100,000 or 200,000.
- Multi-color light optical element (pictogram) signaling events in blue, red or pink color.
- Function for assisting blind or hearing-impaired people - signaling events (audio, optical element).
- Ability to work in the Polish version (with “tails”).
- Ability to work outside buildings and in places of high humidity or dust.
- Metal keypad, waterproof, with increased resistance.
- Aesthetic metal housing / casing with very high resistance, made of stainless steel.
- Working with contactless cards having relevant certificates authorizing operation underground (e.g. in areas with potentially explosive atmospheres) - “ATEX” DIK-01.
- Operating temperature -15 to +40°C.
- Continuous development of FIRMWARE (software for reader).

Reader in reinforced upright body

- Electrical/electronic part -

- Electronic control units machine-mounted in SMD technology.
- Electronics made on the basis of 32-bit ARM processor and two ATMEGA processors.
- Internal voltage regulators based on modern and efficient pulsed power supplies.
- LCD dot display (graphic) 128 x 64 pix (can be connected outside reader including keyboard using RS232 or RS485 – in case of large distances).
- 230 V AC grid supply (17 V secondary). Direct low voltage supply possible from common external power supply. The reader has an internal voltage regulator and accepts external input voltages from 12 V to 48 V, AC or DC.
- Emergency maintenance work – 12 V battery, minimum working time 4.5 hours – working without the battery is also possible.
- Working with an informatics system is possible using these standards:
  - RS232 (optionally with optical isolation)
  - RS485 (optionally with optical isolation)
  - Ethernet 10/100 MBit
- Working with equipment such as barriers, gates, turnstiles, etc. via:
  - 4 + 2 + 1 input/output RS232 or RS485

- 3 relay outputs (load 5 A at 230 V)
- 8 digital inputs/outputs
- 8 inputs with optical isolation
- 4 inputs for voltage measurement

• Maintaining endurance with additional battery (independent of the battery).
• In case the electronic reader fails, the processor board can be moved to a different reader to read entries.
• Controlling the internal heater increases the scope of work in sub-zero temperatures.

- Functionality of recording device -

• Working with two displays and keyboards or two heads simultaneously is possible.
• Automatic display brightness control changes depending on ambient lighting.
• Automatic display contrast control takes ambient temperature into account.
• Reading contactless cards (UNIQUE or programmable MIFARE) depends on the choice of reader head.
• Reader event notification (for example, record) by using an audio and dual-color pictogram integrated with the antenna. It is possible to configure audio and visual effects and also connect an external (louder) annunciator.
• Recording information on contactless cards (exclusively).
• Allows a second reader (working in parallel or as one head as the input, the second one as the output), also in a different standard powered directly from the reader.
• Remote testing of the battery (with an additional load) – the reader enters the value of the battery voltage and battery.
• The reader can be used in the “Dynamic mode – ZAM”. While working in ONLINE mode, the reader automatically switches (in case of a lack of communication) to OFFLINE. The entries are then stored in the reader memory with the built-in logic of the reader deciding how they are received. After transmission is restored, the reader independently returns to the ONLINE mode (pending reading confirmation) and waits to read the entries stored in the memory during OFFLINE moments.
• In the “ZAM” mode, entries are stored (except when they are read by a computer) in the memory card (marked as read) using FIFO sequences/lines. This increases the safety of the records, because there is the possibility of re-reading them.
• Possible to return the reader virtual card number (applies only for MIFARE cards) so as to retain conformity with previously used card numbers.
This option is good in the event of RCP system migration and also during normal operation.
• Card password enables additional verification of the person using the card in the OFFLINE and forces the person to enter an individual code containing up to 8 characters on the keyboard.
• Depiction of any text/graphics in the ONLINE mode through a computer system, e.g. personnel, RCP, payroll, etc.
• Dispatching data from the information system directly to the COM port of the recording equipment (RS232 interface in the reader) is possible. This allows, for example, connecting a printer to the reader and printing information on it (such as printed receipts).
• Direct operation of the keyboard in the ONLINE mode (detection of every keypress).
• Ability to re-read all records (100,000 or 200,000) or from the entered data.
• Very accurate internal clock with program adjustments for the accuracy of time, taking into account time zones (summer/winter time changes).
• Response time of the reader to a card under 1 second (scanning 10,000 authorized cards).
• Any modification or authorization for the card is possible without disrupting all cards.
• Modern ZAM transfer protocol (compatible with readers RCP2000 and RCP7000 HSK Data).
• Detailed documentation for the transfer protocol available.
• Depiction on the display of any text/graphics for employees in the OFFLINE mode is possible, e.g. company logo, name and surname, station/workplace, balance of hours, application of regular revisions, number of vacation days to use, or any other communication.
• Other options of the reader in the OFFLINE mode:
  - random choice of people for personal check at the gate,
  - random choice of people for checking for the presence of alcohol,
  - anti-sabotage protection indicating the opening of the reader,
  - preventing employee access after a certain date

- permitting employee access only on certain days and specified times,
- siren indicating the beginning and end of snack breaks can be turned on
- settling contracts is possible (e.g. mechanic shows how long it took to repair the car)
- managing the turnstile, vendor machines, etc. (computer units for card) possible
- blocking multiple registration of the same card between read registration/records (release of materials)
- showing the number of unread registrations/records on the screen possible
- use of identification cards as passes (determining the validity of the data on the card). The reader will not accept registration after the “termination” of the card.
- referenda are possible (a choice of one of many).