

CABLE TELEPHONE MINING RESCUE COMMUNICATION



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Company **RAT-TEL** Ltd. produces and provides an entire service for rescue cable communication systems and used by all industrial rescue services. Professional knowledge and professionalism owes its highly skilled specialists with many years of experience in the rescue industry. The company's products include:

- Base telephones.
- Rescueman telephones.
- Cable boxes and cable reels.
- Multichargers.
- Cable sets for rescue communication.

The market success of the **RAT-TEL** system (confirmed by numerous references) has been achieved thanks to the reliability of the equipment, line validation, optimum communication and measurement of temperature and humidity at a distance of 5000 m.

All **RAT-TEL** products have explosion-proof IM1 features and meet the requirements of the ATEX directive.

RAT-TEL is also the exclusive distributor for the mining industry, hydrogel first aid kits for burns and abrasions, approved for use in potentially explosive atmospheres of coal dust and methane.

OUR PRODUCTS

Our products:

- Emergency communication device UŁR-20, including:
 - Staff telephone UŁR-20 SZTAB
 - Base telephone UŁR-20 STAR-3
- Base telephones STAR-1
- Base telephones STAR-1T
- Rescueman telephones QUAK-2/2T
- Rescueman telephones QUAK-5/5T
- Multicharger ZQ-5
- Cable sets ZR-15 for rescue communication
- Hydrogel dressings ZOH-16
- Telephone clips WT-20
- Multicharger ZW-1/1T





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TRUST THE SPECIALISTS

Our many years of experience in selecting the appropriate equipment as well as in production allows us to offer expert advice, top-quality products and professional service, as confirmed by a great number of satisfied customers.



THEY ALREADY TRUSTED



POLSKA GRUPA
GÓRNICZA



PG SILESIA

UŁR-20 EMERGENCY COMMUNICATION DEVICE

UŁR-20 Emergency Communication Device is a set used to organize wired communication during a rescue operation. The UŁR-20 set meets the requirements and regulations regarding mine rescue in the field of communications.

The whole UŁR-20 set consists of: UŁR-20 SZTAB staff telephone and the UŁR-20 STAR-3 base telephone. The necessary elements for the proper functioning of the entire UŁR-20 set are also rescuer devices such as: rescueman telephone QUAK and 300-meter sections of the conversation line wound on reusable cable reels - 300M - or in disposable Cable boxes - 300M.

The UŁR-20 STAR-3 base telephone and the UŁR-20 SZTAB staff telephone must be connected to each other during the work by a separate telephone line. The UŁR-20 STAR-3 base telephone is the main element of the set. It has an intrinsically safe construction and meets the requirements for protection level „ia” of group I. The UŁR-20 STAR-3 base telephone can be installed in an explosion hazard zone. The UŁR - 20 SZTAB staff telephone is an accompanying device for the base telephone. Its construction allows placing it in an explosion-free zone.



BASE TELEPHONE UŁR-20 STAR-3

The UŁR-20 STAR-3 base telephone is the central and basic element of the UŁR-20 set. The UŁR-20 STAR-3 base telephone provides wired communication with three QUAK rescueman telephones. The rescueman telephones are connected to the base telephone by conversation lines, in particular 300M boxes and 300M reels.

After switching on all tracks, the UŁR-20 STAR-3 base telephone allows to hear simultaneously from three rescueman telephones. All signals are transmitted via a telephone line to the UŁR-20 SZTAB staff telephone. In addition, the UŁR-20 STAR-3 base telephone has the function of selective communication with the staff telephone, with the audio signal directed only to the staff telephone, bypassing the rescueman telephones. In addition, the UŁR-20 STAR-3 base telephone has been equipped with the control system for all conversation lines.

The power source for the UŁR-20 STAR-3 base telephone is an easily replaceable Li-Ion battery. The battery supplying power for the UŁR-20 STAR-3 base telephone can be charged only outside of potentially explosive areas. The standard equipment includes: a controller with a built-in speaker and microphone, a spare battery block, a charger for the battery and a connector for connecting the transmission line.

The UŁR-20 STAR-3 base telephone provides:

- Constant line monitoring of each of the three connected rescueman telephones.
- Transmission of verbal messages and call signal to the selected rescueman telephone.
- Transmission of all conversations with rescue teams (in both directions) to the UŁR-20 SZTAB staff telephone. (
- Possibility of sending a call signal and verbal messages to the UŁR-20 PCS staff telephone.
- Reception of audio signal from the UŁR-20 SZTAB staff telephone with line control.
- Reception and display of data values from temperature and relative humidity sensors
- installed in QUAK-2T/5T rescueman telephones.
- Battery discharge level control and the possibility of quick battery replacement in areas at a risk of explosion.



TECHNICAL DATA

POWER SUPPLY:	Replaceable battery block Li-Ion 1900mAh
POWER CONSUMPTION:	50 - 85mA
WORKING TIME CALCULATED AFTER CHARGING:	min. 12 godz.
COMPATIBLE DEVICES:	Rescueman telephone QUAK-5(T) or QUAK-2(T), Staff telephone UŁR-20 SZTAB, boxes B300M or reels P300M
MAXIMUM LINE LENGTH FOR AUDIO CONNECTION:	5000 m
MAXIMUM LINE LENGTH FOR DIGITAL CONNECTION:	5000 m
BANDWIDTH:	300 ÷ 4000Hz
CHARGING CURRENT SOURCE:	Stabilized PSU 18V/1A
OPERATING TEMPERATURE:	0 ÷ 50 °C
DIMENSIONS:	120 x 200 x 90 mm
WEIGHT:	1,5 kg
EXPLOSION-PROOF CONSTRUCTION:	I M1Ex ia I Ma
EC TEST CERTIFICATE:	TEST 17 ATEX 0035X
PROTECTION DEGREE:	IP54

STAFF TELEPHONE

UŁR-20

The UŁR-20 SZTAB staff telephone is one of the components of the UŁR-20 Emergency Communication Device. It provides continuous wire communication with the UŁR-20 STAR-3 base telephone. It is intended for use only in explosion-free areas.

The UŁR-20 SZTAB staff telephone is device compatible with the UŁR-20 STAR-3 base telephone and maintains communication with it using a two-wire intrinsically safe telephone line. The line used must be a separate line, and cannot be connected to any other equipment along its entire length.

The UŁR-20 SZTAB staff telephone provides:

- Constant monitoring and recording all conversations between the base telephone and the rescueman telephones, as well as the base telephone and the staff telephone.
- Transmission of verbal messages and call signal to the UŁR-20 STAR-3 base telephone and control of the connection line continuity.

The standard equipment includes: a microphone, a PSU, 2 memory cards and a connector for connecting the transmission line.




TECHNICAL DATA

POWER SUPPLY:	external 12 VDC, internal battery
POWER CONSUMPTION FROM EXTERNAL POWER SOURCE:	80 – 300 mA
COMPATIBLE DEVICES:	Base telephone UłR-20 STAR-3
MAXIMUM TELEPHONE LINE LENGTH:	5000 m
BANDWIDTH:	300 ÷ 4000Hz
OPERATING TEMPERATURE:	10 ÷ 50°C
DIMENSIONS:	290 x 180 x 70/45 mm
WEIGHT:	Approx. 1,3 kg
EXPLOSION-PROOF CONSTRUCTION:	I (M1) [Ex ia Ma] I
EC TEST CERTIFICATE:	TEST 17 ATEX 0034X
PROTECTION DEGREE:	IP44
BUILT-IN AUDIO RECORDING SYSTEM:	SD card





CABLE REEL 300M

Cable reel provides continuous communication between rescue base telephone and rescue team in action. Each reel is equipped with carrying handle for easy reeling and unreeling, while rescue team in motion. Cable line may be prolonged by connecting cable boxes in one line, in series. Cable reel is certified by B and  IM 1.






TECHNICAL DATA

WEIGHT:	1,25 kgs
REEL TOTAL WEIGHT (INCLUDING CABLE AND CARRYING HANDLE):	4,9 kgs
CABLE LENGTH IN THE REEL:	300 m
TYPE OF CABLE:	RAT-TEL CuSn2x0,25 mm ²

CABLE BOX 300M

Cable box provides continuous communications between rescue base telephone and rescue team in action. Construction of the box provides optimal strength, while such important parameters, as weight and mobility are low. Cable box is equipped with a grip to be fixed with rescuer's belt, that allows free unreeling a cable during rescue team movement. Cable line may be prolonged, by connecting boxes in one line, in series. Cable box 300M is explosion proof and  IM1.





TECHNICAL DATA

TOTAL WEIGHT (INCL. CABLE):	3,2 kg
WORKING TEMPERATURE:	0°C - 40°C
CABLE LENGTH IN THE BOX:	300 m
TYPE OF CABLE:	RAT-TEL CuSn2x0,25 mm ²





RESCUEMAN TELEPHONE QUAK-2

Rescueman telephone QUAK-2 is designed to work with base telephone of cable communication for its prompt organization between rescue base and rescue team in action.





TECHNICAL DATA

MAXIMUM LENGTH OF CALLING LINE:	2000 m
WORKING TEMPERATURE:	10 ÷ 40°C
WORKING POSITION:	any position
PROTECTION DEGREE:	IP54
WEIGHT:	0,3 kg
MARK OF EXPLOSION PROOF:	⊕ IM1 Ex ia Ma
NUMBER OF TESTING CERTIFICATE:	TEST 14 ATEX 0018X
INTRINSIC SAFETY PARAMETERS:	U _i = 30V; P _i = 2W; C _i = 0,73 uF; L _i = 1,92 mH

RESCUEMAN TELEPHONE QUAK-2T

Rescueman telephone QUAK-2T is designed to work with base telephone of cable communication for its prompt organization between rescue base and rescue team in action. Additionally it is equipped with temperature and relative humidity measurement system. Provides also transmission of measurement data to rescue base station.





TECHNICAL DATA

MAXIMUM LENGTH OF CALLING LINE:	2000 m
WORKING TEMPERATURE:	10 ÷ 40°C
WORKING POSITION:	any position
SAFETY PROTECTION MARK:	IP54
WEIGHT:	0,45 kg
DIMENSIONS OF RESCUER UNIT	95 x 50 x 60 mm
DIMENSIONS OF MEASURING UNIT	Ø 28 x 95 mm
RANGE OF TEMPERATURE INDICATIONS	0 ÷ 80°C
ACCURACY OF TEMPERATURE INDICATIONS:	± 2,0°C
RANGE OF HUMIDITY INDICATIONS:	10 ÷ 95%
ACCURACY OF HUMIDITY INDICATIONS:	±10%
EXPLOSION-PROOF CONSTRUCTION	Ex IM1 Ex ia Ma
EC TEST CERTIFICATE	TEST 14 ATEX 0018X
INTRINSIC SAFETY PARAMETERS:	Ui = 30V; Pi = 2W; Ci = 0,73uF; Li = 1,92mH

RESCUEMAN TELEPHONE QUAK-5

Rescueman telephone QUAK - 5 is designed to work with base telephone of cable communication for its prompt organization between rescue base and rescue team in action. It is equipped in sound amplifier system and internal power supply source.





TECHNICAL DATA

MAXIMUM LENGTH OF CALLING LINE:	5000 m
WORKING TEMPERATURE:	10 ÷ 40°C
CONTINUOUS WORKING TIME (ESTIMATED):	14 hours
WORKING POSITION:	any position
BATTERY CHARGE LEVEL:	three stages
SAFETY PROTECTION LEVEL	IP54
WEIGHT:	0,45 kg
DIMENSIONS:	110 x 50 x 70 mm
EXPLOSION PROOF CONSTRUCTION:	⊕ IM1 Ex ia Ma
EC TEST CERTIFICATE:	TEST 14 ATEX 0018X
INTRINSIC SAFETY PARAMETERS:	U _i = 30V; P _i = 2W; C _i = 2,3uF; L _i = 1, 92mH; U _o = 4,5V, I _o = 68mA, L _o = 50mH; C _o = 500mF; U _m = 12V

RECUEMAN TELEPHONE QUAK-5T

Rescueman telephone QUAK-5T is designed to work with base telephone of cable communication for its prompt organization between rescue base and rescue team in action. It is equipped in temperature and relative humidity measurement systems, data transmission system to the rescue base, sound amplifier and internal power supply source.





TECHNICAL DATA

MAXIMUM LENGTH:	5000 m
WORKING TEMPERATURE:	10 ÷ 40°C
CONTINUOUS WORKING TIME (ESTIMATED):	14 hours
WORKING POSITION:	any position
BATTERY CHARGE INDICATOR:	three levels
SAFETY PROTECTION LEVEL:	IP54
TOTAL WEIGHT:	0,5 kg
DIMENSIONS OF RESCUEMAN UNIT:	110 x 50 x 70 mm
DIMENSIONS OF MEASURING UNIT:	Ø 28 x 95 mm
RANGE OF TEMPERATURE INDICATIONS:	0 ÷ 80°C
ACCURACY OF TEMPERATURE INDICATIONS:	± 2,0°C
RANGE OF HUMIDITY INDICATIONS:	10 ÷ 95%
ACCURACY OF HUMIDITY INDICATIONS:	±10%
EXPLOSION PROOF CONSTRUCTION:	⊕ IM1 Ex ia Ma
EC TEST TESTING:	TEST 14 ATEX 0018X
INTRINSIC SAFETY PARAMETERS:	U _i = 30V; P _i = 2W; C _i = 2,3uF; L _i = 1, 92mH; U _o = 4,5V, I _o = 68mA, L _o = 50mH; C _o = 500mF; U _m = 12V

HYDROGEL DRESSINGS KIT ZOH-16

The hydrogel dressings kit ZOH-16 contains a set of dressings adapted for the purposes of mining rescue operations in terms of their quantity and size. The bag has a strap and a handle for easy carrying and clear information about its contents. It is made of materials approved for use in mining and has been equipped with a closing system that allows to seal its contents. The hydrogel dressings included in the set are elastic and flexible. They adhere well to the body, and the addition of nonwoven fabric makes them tear-resistant and comfortable in application. The hydrogel structure of the dressings allows to maintain an optimal moisture level, which accelerates the epithelization (epidermis restoration) processes. For superficial burns, the dressings moisturize well the irritated epidermis, while in the case of wounds oozing exudates and toxins, these are absorbed and retained within the hydrogel structure. In addition, the dressings are breathable, while providing a barrier to bacteria from the outside and protecting the wound from contamination.



TECHNICAL DATA

WEIGHT:	0,9 kg
STORAGE TEMPERATURE:	10÷40°C
DURABILITY:	up to 5 years
DIMENSIONS:	220 x 450 x 80 mm
DIMENSIONS OF DRESSINGS INCLUDED IN THE SET:	Face: 30x40 cm – 2 pcs. General: 20x40 cm – pcs. Basic: 20x20 cm – pcs. Basic: 10x10 cm – pcs. Liquid: 100 ml – 1 pcs.





BASE TELEPHONE STAR-1

Base telephone STAR-1 is the main part of cable telephone rescue communication system. The system consists of base telephone with operating manipulator that is connected to rescueman telephone by communication cable, reeled from cable box. Base telephone is connected by spiral cable to operating manipulator with built in loudspeaker, microphone and control buttons. Ergonomical shape of manipulator casing, allows in easy manner, holding it in the hand to keep communication with rescueman. Extra grip of the manipulator casing, allows easy fixing to carrying belt of base apparatus or to the pocket of working suit. Base apparatus measures continuously atmospheric pressure by special, internal module. Unit of base telephone is placed into solid leather cover, protecting against mechanical damages. Base apparatus STAR-1 is provided to work with rescueman telephones: QUAK-2 with verbal communication up to distance 2000 meters, and QUAK-5 with verbal communication up to 5000 meters.



TECHNICAL DATA

WORKING OPERATING TIME:	min. 14 hours
DIMENSIONS (WITHOUT MANIPULATOR):	162 x 82 x 60 mm
WEIGHT:	0,8 kgs
BATTERY CHARGING TIME:	max. 4,5 hours
RANGE OF A.P. MEASUREMENTS	800 ÷ 1260 hPa
MARK OF EXPLOSION PROOF:	IM1 Ex ia Ma
NUMBER OF TESTING CERTIFICATE:	TEST 14 ATEX 0082X
AMBIENT WORKING TEMPERATURE:	10 ÷ 40°C
RELATIVE HUMIDITY:	0 ÷ 100%RH
PROTECTION DEGREE:	IP54

BASE TELEPHONE STAR-1T

Base telephone STAR-1T is the main part of cable telephone rescue communication system. The system consists of base telephone with operating manipulator that is connected to rescueman telephone by communication cable, reeled from cable box. Base telephone is connected by spiral cable to operating manipulator with built in loudspeaker, microphone and control buttons. Ergonomical shape of manipulator casing, allows, in easy manner, holding it in the hand to keep communication with rescueman. Extra grip of the manipulator casing, gives easy fixing to carrying belt of base apparatus or to the pocket of working suit. Base apparatus is equipped with very readable display OLED, informing about battery charge status, status of communication line, etc. Pending measurements of atmospheric pressure are displayed. Additional module cooperates with temperature and relative humidity measure system of rescueman apparatus. Unit of base telephone is placed into solid leather cover, protecting against mechanical damages. Base apparatus STAR-1T is provided to work with rescueman telephones: QUAK-2T with verbal communication and temperature, humidity readings up to distance 2000 meters, and QUAK- 5T with verbal communication and temperature, humidity readings, up to distance 5000 meters.



TECHNICAL DATA

WORKING OPERATING TIME:	min. 14 hours
DIMENSIONS (WITHOUT MANIPULATOR):	162 x 82 x 60 mm
WEIGHT:	0,8 kgs
BATTERY CHARGING TIME:	max. 4,5 hours
RANGE OF A.P. MEASUREMENTS:	800 ÷ 1260 hPa ± 1hPa
MARK OF EXPLOSION PROOF:	IM1 Ex ia Ma
NUMBER OF TESTING CERTIFICATE:	TEST 14 ATEX 0082X
AMBIENT WORKING TEMPERATURE:	10 ÷ 40°C
RELATIVE HUMIDITY:	0 ÷ 100%RH
PROTECTION DEGREE:	IP54

CABLE SET ZR-15 FOR RESCUE COMMUNICATION

The cable set ZR-15 for rescue communication contains all the equipment necessary for the first stage of rescue operations. The set has been designed to provide maximum comfort and mobility.

The basic set includes:

- Cable reels 300M - 2 pcs.
- Rescueman telephone QUAK-5 or QUAK-5T - 1 pc.
- Base telephone STAR-1 or STAR-1T - 1 pc.

The whole set comes in a dedicated reinforced leather bag, tested for its applicability in areas at risk of methane and coal dust explosion.



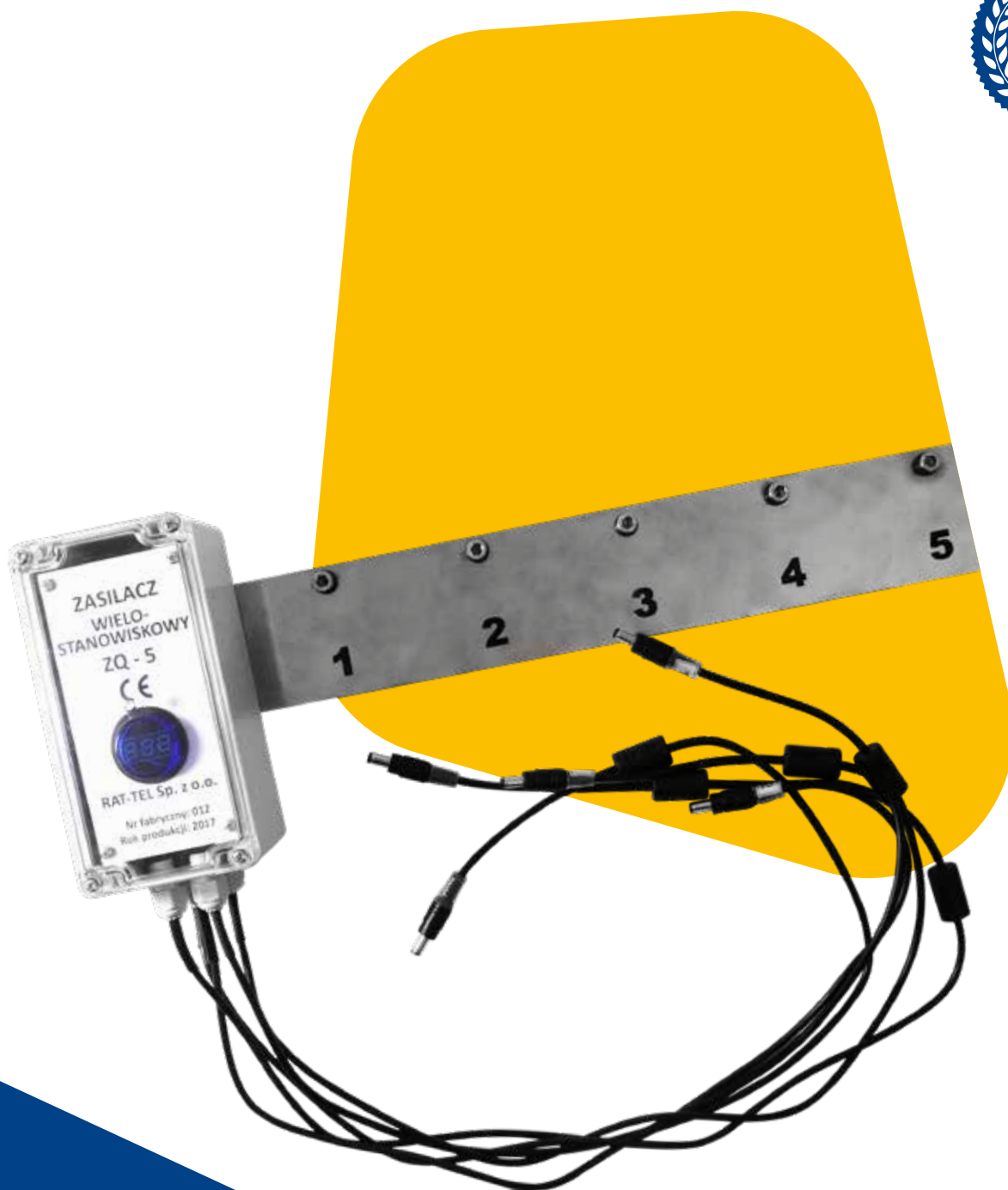




MULTICHARGER ZQ-5

Multicharger ZQ-5 is provided for simultaneous charging from one to five batteries of cable communication rescueman apparatuses QUAK-5T.





TECHNICAL DATA

SUPPLY VOLTAGE:	AC 230V
WEIGHT:	1,6 kg
CHARGER DIMENSIONS:	80 x 150 x 85 mm
HOLDER DIMENSIONS:	515 x 65 x 3 mm

CLIP WT-20

The WT-20 telephone clip is designed for connecting to a rescue telephone line using a 2x0.25mm² RAT-TEL or TLY type cable, e.g. 2x0.22mm², and enables to connect a rescuerman telephone via this telephone line with the base telephone in order to maintain constant communication between the base and the rescuermen during rescue (emergency or preventive) operations, in particular when the rescue team is retreating to the base without the need to wind up the line.





DANE TECHNICZNE

WEIGHT:

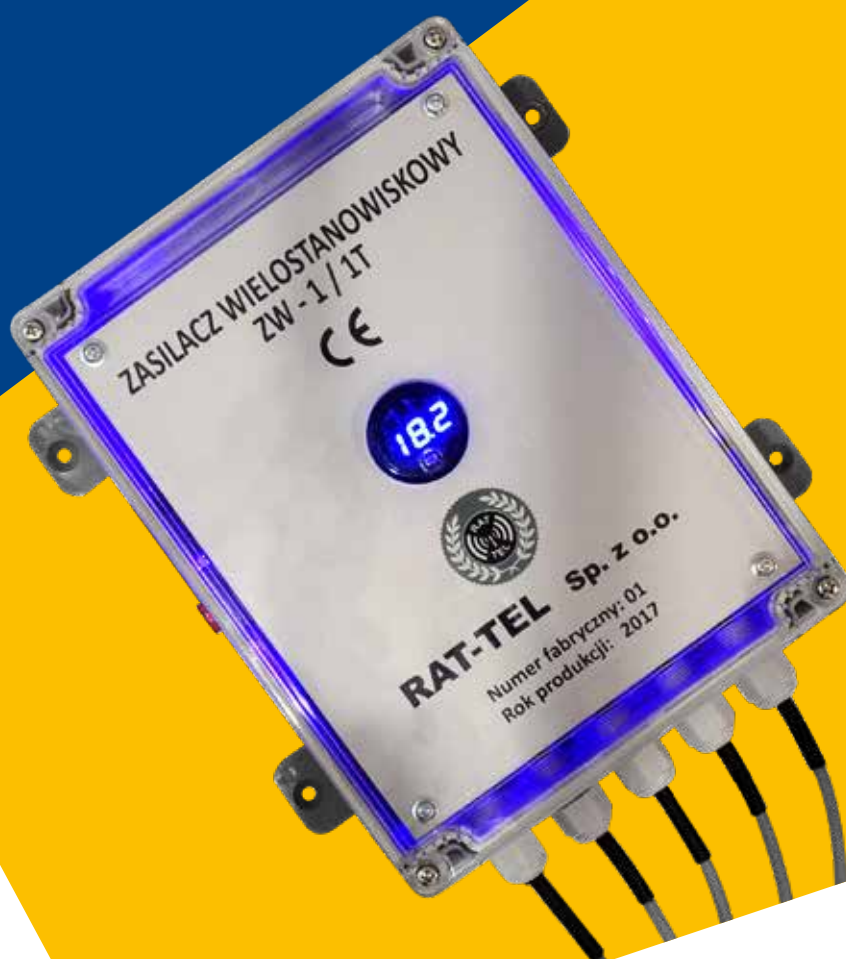
0,1 kg

DIMENSIONS:

120 x 35 x 35 mm

MULTICHARGER ZW-1/1T

The **ZW-1/1T multicharger** is designed for simultaneous charging of one to five batteries of STAR-1 and STAR-1T base telephones used in cable rescue communication. The ZW-1/1T device ensures order, safety and high efficiency when using the STAR-1 and STAR-1T base telephones.





ZASILACZ WIELOSTANOWISKOWY
ZW - 1 / 1T

CE



RAT-TEL Sp. z o.o.

Numer fabryczny: 01
Rok produkcji: 2017







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WWW.RAT-TEL.PL

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RAT-TEL sp. z o.o.

 ul. Wiosny Ludów 91, 40-373 Katowice, Poland

 phone/fax +48 32 155 50 50

 biuro@rat-tel.pl marketing@rat-tel.pl



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