Industrial communication systems

Product catalogue 2021

ARMTEL
Industrial communication systems

ABOUT COMPANY

Armtel performs engineering, design and production of industrial communication systems.

Thanks to combining innovative approach and Russian engineering traditions Armtel proudly develops equipment and solutions that provide high-quality communication and ensure safety in harsh industrial conditions.

For its customers worldwide Armtel provides customized and scalable solutions. Their high quality is ensured by high-professional team of employees, usage of advanced technologies and permanent development of product lines.

RU
Russian equipment manufacturer

ISO
9001—2015

20
years

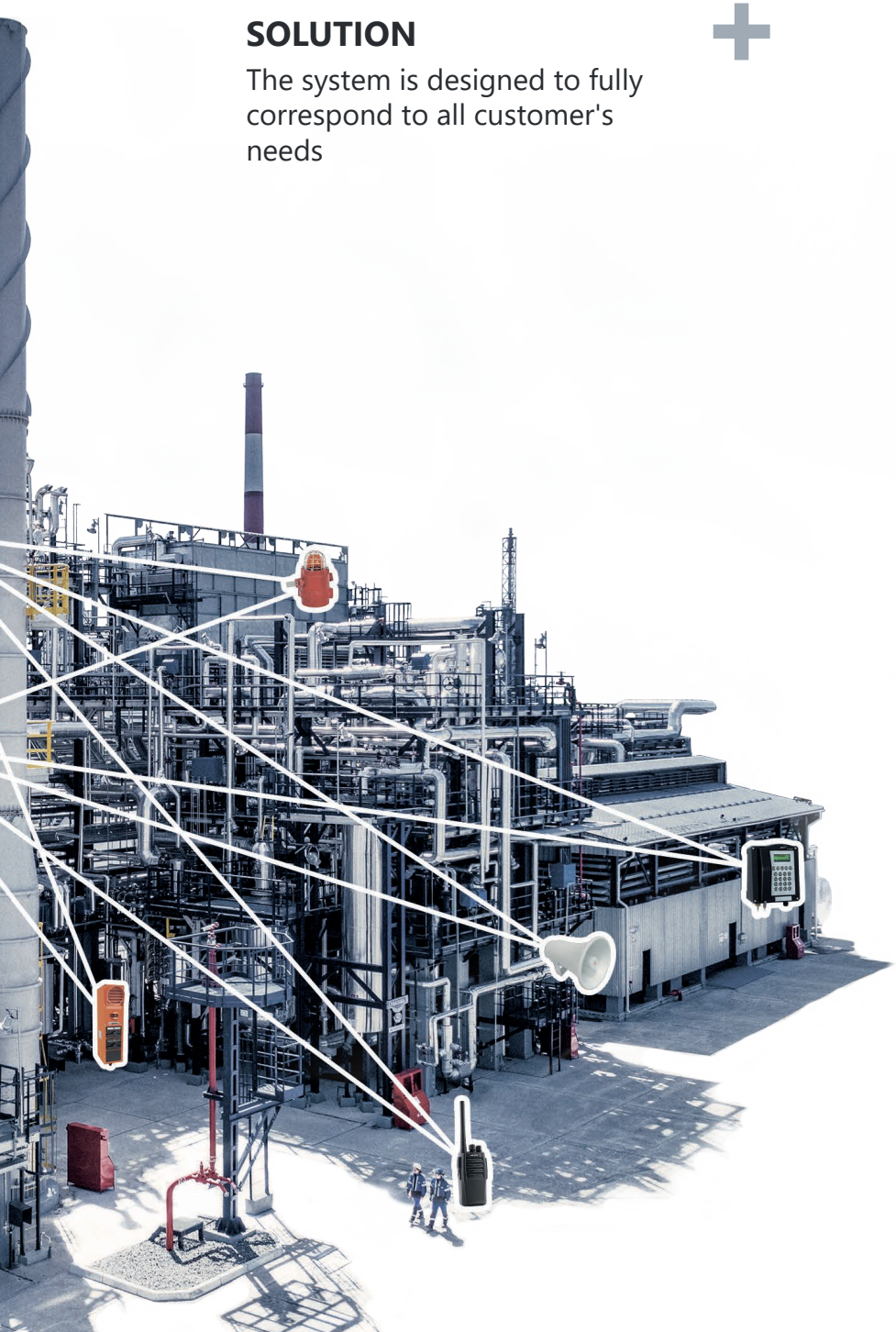
ARMTEL PRODUCT

EQUIPMENT

Armtel provides full product life cycle management, from research and design to delivery and support

SOLUTION

The system is designed to fully correspond to all customer's needs



SERVICE

A collection of unique proposals that increase value of the product

- Extended warranty
- Training and consulting
- Commissioning and maintenance
- Technical support
- Engineering support
- Spare parts sale
- Online support

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DCN distributed communication system

DCN Intercom and PA System is voice communication system based on ISDN technology the main functional parts of which are made as separate units for installation into a 19" rack. It is specially designed to meet the high requirements for reliability and safety of equipment when working in hazardous industries.

A special module of analog subsystems (ACM) allows you to connect analog devices to the digital subscriber interface: amplifiers, including load switching relays, radio transmission lines and MOES, fire and security alarm systems, analogue intercoms, radio stations, outdated PA/GA systems and much more.

Up to 6,8 kHz bandwidth for DCN

Up to 6 km distance


Ability to connect analog devices to the digital interface

DCN industrial communication system is used for:


Organization of the PA/GA


Organization of operational dispatch communication


Organization of group communication, conferencing


Communication in explosive and harsh conditions

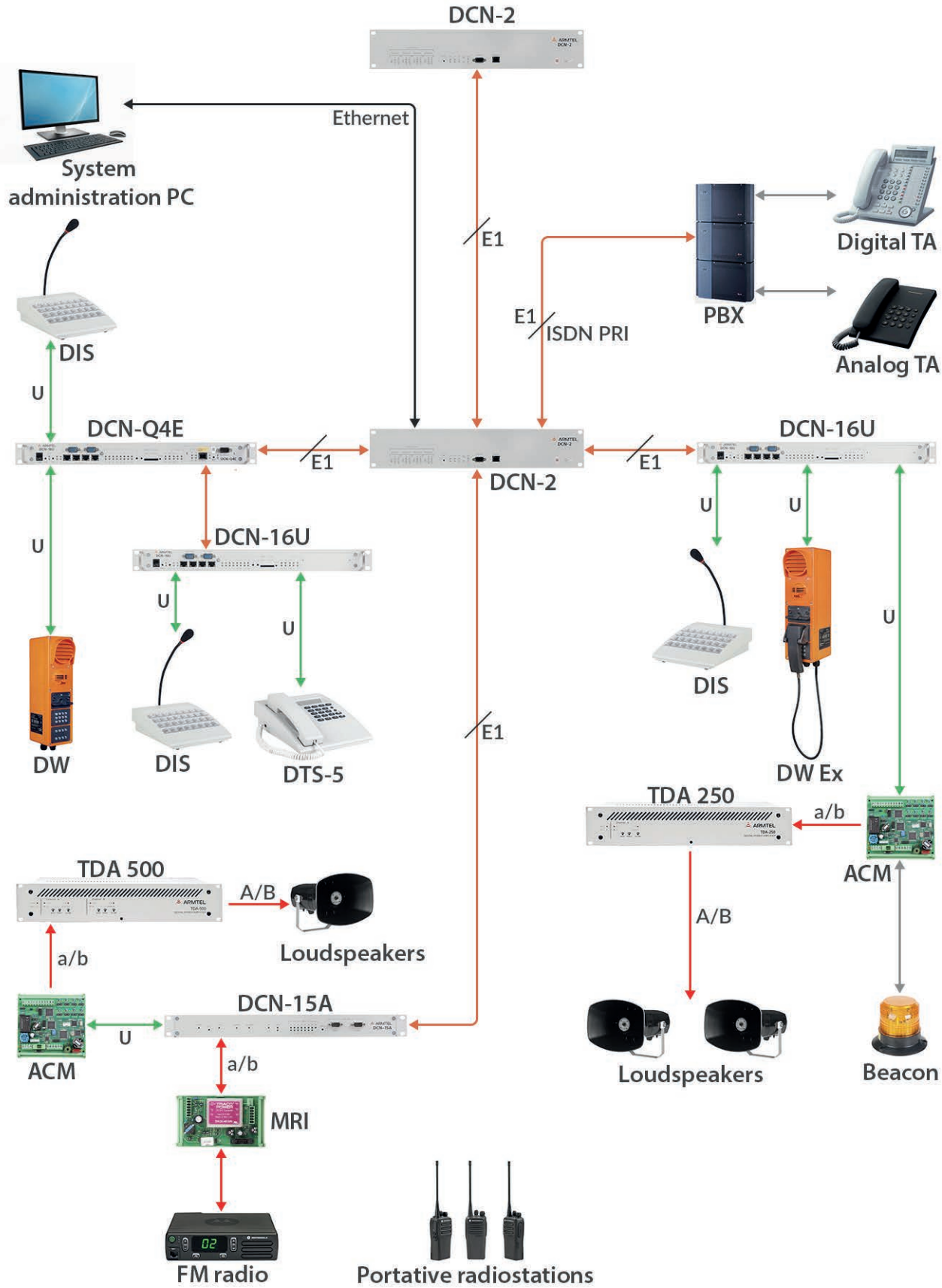

Communication with industrial cranes and stackers


Communication with radio subscribers

Key features:

- Intercom and public address in simplex mode;
- Duplex communication between subscribers with appropriate equipment;
- Interconnection between duplex and simplex call stations in "half-duplex" mode;
- Possibility of individual calling to any station or station group (for devices equipped with a dial pad);
- Individual announcements to subscribers by PA/GA system;
- Zonal (group) announcements to subscribers by PA/GA system;
- Free numbering of subscribers;
- Prioritized order of subscribers communication;
- Playback of pre-recorded audio announcements;
- Manual or automatic broadcasting of pre-recorded alarms and alerts messages;
- Local and remote monitoring, diagnostics and configuration of the device and subscribers
- Connection with external PBX and other equipment via E1 trunks;
- Full-functional DCN internetworking via E1 trunks with free topology
- Connection to IP-PABX through DCN-IP gateway.

Example of a solution of industrial communication system based on Armtel **DCN**



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DCN-2 Central exchange unit

ARMT.665200.003

III EAC IP 30 ISDN

The DCN-2 is a compact central exchange unit of the Armtel digital Intercom and PA/GA communication systems DCN. The DCN-2 central exchange unit is equipped with 1 to 4 of 4E1 interface boards, each provides the four E1 line interfaces. For each E1 line of the DCN-2 exchange, you can connect a subscribers unit for 15 digital or analogue interfaces, another DCN exchange, or use it as an ISDN PRI line to communicate with an external PBX. Thus, the maximum capacity of the DCN-2 exchange is determined by the number of 4E1 modules installed and can be up to 240 subscribers.

6,8 kHz Up to 6,8 kHz bandwidth

Up to 240 subscribers

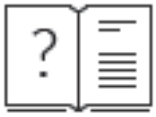
Key features:

- Direct simplex and duplex communication with extended voice signal bandwidth up to 6,8 kHz;
- Free calls to any subscriber or group of subscribers (for devices with a dialer);
- Provision of a group call and multilateral group communication (selector, circular, conference);
- Individual and zone (group) notification of subscribers by loud-speaker communication;
- Free numbering and 255 level of priority for calls between subscribers;
- Manual or automatic broadcasting of audio fragments, alarms, alerts and messages from voice memory;
- Interconnecting of two or more DCN central exchanges into a common communication system;
- Local and remote (via IP-network) monitoring, diagnostics and configuration of the central exchange unit, lines and subscribers.

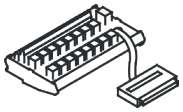
Technical specifications

Operating voltage	from -36 V to -60 V
Maximum power consumption	20 W
Number of E1 ports	from 4 to 16
Communication interface for the subscriber devices	E1 (G.703/G.704)
Communication protocol on the network level	Q.921, Q.931
Operating temperature	from -5˚C to +55˚C
Air humidity	Up to 80 % at +25˚C
Degree of protection	IP20
Enclosure dimensions	483×315×89 mm
Maximum weight	4,4 kg
Redundancy	Dual Hot
LED Indication	Active, Faulty

Delivery includes



Set of operational documents



DCN-2 connecting cable

ARMT.665200.124

4E1 DCN-2 module

ARMT.665200.125

DCN-16U Digital subscribers exchange unit

ARMT.665200.001

DCN-Q4E switching processor module

DCN-16U digital subscribers exchange unit is designed for operation as a part of DCN digital Intercom and PA/GA system on the basis of DCN-2 or DCN-Q4E switching processor module and provides for interfacing with digital subscriber equipment by Uk_0-interface. DCN-16U transmits digital data between 15 subscriber Uk_0-interfaces and E1 line of a central exchange unit. In addition, there is a version of DCN-16U with built-in DCN-Q4E switching processor module.

"Phantom" power supply by Uk_0-interface line

6 km Up to 6 km distance

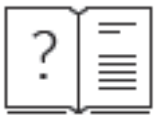
Key features:

- Connection of up to 15 digital subscriber devices to DCN system by the digital double-wire subscriber interfaces Uk_0 at a distance of max. 6 km;
- Local control and diagnostics using two-colour LED indication on the front panel of subscriber interface and E1 line status;
- Creation of low capacity DCN system (up to 15 digital subscribers, expandable up to 60 subscribers when connecting additional DCN-16U), for a version with DCN-Q4E module;
- "Phantom" power supply of subscriber units by Uk_0-interface line;
- DIN41612C socket for connection of digital subscribers, a group of phantom power fuses, strip of jumpers for power supply to subscriber units;
- DRB-25FA socket for 4 E1 lines connection cable of DCN-Q4E module, if installed, on the back panel;
- The connection cable is equipped with screw terminals for connecting lines of subscriber Uk_0-interfaces that are located on a DIN-rack mountable board. There are failure signal relays on the cable board.

Technical specifications

Supply voltage range	from - 36 V to - 60 V
Max. power	20 W
Number of subscriber unit connected	max 15
Communication interface for the subscriber devices	Uk_0
Communication interface for connection to central exchange unit	E1 (G.703/G.704)
Subscriber signalling protocol	Armtel
Operating temperature	from -5 °C to +55 °C
Relative humidity	Up to 80 % @ +25 °C
Degree of protection	IP40
Dimensions	483×227×44 mm
Maximum weight (without connection cable weight)	2.5 kg
LED Indication	Active, Faulty, Communication

Delivery includes



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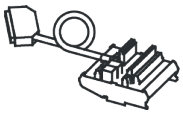
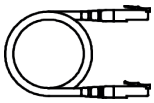


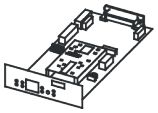
Connecting cable for digital DCN-16U subscribers

ARMT.665200.102



E1 Connectiion cable for DCN-Q4E (for versions with DCN-Q4E)
ARMT.665200.139

Socket RS 4/3-STF-7,62



DCN-Q4E (4xE1) switching processor module (**only** built-in in -01 version)
ARMT.665200.010

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DCN IP-Gateway

ARMT.665230.137

DCN IP-gateway is a commutation device, performing the conversion and matching of digital data flows and voice connection protocols between the subscribers of DCN digital communication system or the subscribers of third party automatic branch exchange (ABX) connected via E1 line and IP-devices of digital dispatch system IPN produced by Armtel, or between SIP-devices and IP-ABX.

Key features:

Functional options of DCN IP-gateway module are determined by the version of installed software:

- **E1/IPN**
  Module of DCN IP-gateway with software E1/IPN is for integration of the digital operative-technological PA/GA communication systems DCN and IPN produced by Armtel

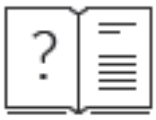
- **E1/SIP**
  Module of DCN IP-gateway with software E1/SIP is for communication of the subscribers of the digital operative-technological PA/GA communication system DCN with the devices of SIP telephony, such as SIP-telephones and IP-ABX, as well as for arrangement of communication between DCN central exchanges via IP-network

- **E1/FTP**
  Module of DCN IP-gateway with software E1/FTP is for arrangement at external FTP-server of the storage of audio information, transmitted via E1 stream from the digital operative-technological PA/GA communication system DCN. This storage is used for realization of special communication functions, performing record and playback of speech fragments.

Technical specifications

Operating voltage	from -36 V to -60 V
Maximum power consumption	12 W
Capacity	15 or 30 channels
Communication interface	E1,100BaseT Ethernet
Communication protocol	Armtel, EDSS1, SIP, HTTP
Codec for transmission of audio data	G.711u, G.711a
Operating temperature	from -5˚C to +55˚C
Air humidity	Up to 80 % at +25˚C
Degree of protection	IP20
Enclosure dimensions	482×212×42 mm
Maximum weight	2 kg

Delivery includes



Set of operational documents

Socket for connection PC 4/3-STF-7,62

DCN-15A Analogue interface module

RMLT.465275.001

The DCN-15A Analogue Interface Module is a compact 15-channel converter of the digital interface E1 into analog low-frequency communication lines and discrete I/O lines to provide communication with analoge quipment and receive signals from other systems.

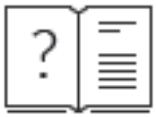
Key features:

- Connection to the system via E1 interface for simplex communication with fifteen subscribers with analogue interface (connected subscriber may have up to eight call keys);
- Construction of multi-channel system of zonal PA/GA (up to 15 channels, maximum eight zones per channel) using power amplifiers and a relays for switching loudspeakers lines;
- Connection up to 60 discrete control lines for each analogue interface for controlling alarm systems and automation, as well as for indicating various statuses and connection modes (busy, incoming and out-going calls, etc.) on the subscriber unit keys;
- Indication of CPU, E1 stream lines, subscriber unit connection ports failures;
- DCN-15A is equipped with polarity protection of power supply connection, overcurrent and overvoltage protection for discrete lines and surge voltage protection for analogue lines.

Technical specifications

Supply voltage range	from - 36 V to - 60 V
Maximum power	20 W
Communication interface	E1 (G.703/G.704)
Operating temperature	from – 5 °C to + 55 °C
Relative humidity	up to 80 % at + 25 °C
Degree of protection	IP20
Dimensions	482×268×43 mm
Maximum weight (without connection cable weight)	2.2 kg
Analogue lines	
Number analogue interface lines	15
Rated input and output level of signal	775 mV
Number of lines	60
Input current	max 5 mA
Maximum output current	min 50 mA

Delivery includes



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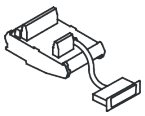


DCN-15A connecting cable

RMLT.469413.001

Socket RS 4/3-STF-7,62

DW Weatherproof call station

RMLT.465311.002

DW Weatherproof call station is the subscriber equipment to use at industrial sites within digital Intercom and PA/GA communication systems DCN and IPN manufactured by Armtel.

DW is designed for outdoor use in environments with the high levels of humidity, noise, dust and smoke content, including the environments with chemically aggressive gases and vapors, within the wide range of operation temperatures.

IP 66 — Protection against temporary immersion in water

6,8 kHz — Up to 6,8 kHz bandwidth

ISDN — Digital protocol

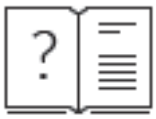
Key features:

- Two-way loudspeaking simplex communication, using built-in speakers, microphone or external microphone with push-to-talk button;
- Two-way duplex communication with using handset;
- Broadcasting of incoming audio messages through the integrated higher-power amplifier and optional 25/50W auxiliary amplifier;
- Group call and PA facility, including PA for multiple zones;
- Extended voice signal bandwidth to 6,8 kHz;
- Broadcasting of alarms pre-recorded messaged from central exchange;
- Indication of call, busy signaling, unanswered call and other modes on LED indicators of programmed keys / pushbuttons;
- Control of external signaling device, using built-in relay;
- Reliable communication via digital two-wire line of Uk_0 interface over the distance up to 6 km.

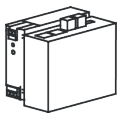
Technical specifications

Supply voltage range, V	from -36 V to -60 V
Maximum operating current:	
- With main amplifier 0,85 W - With higher-power main amplifier 11 W - With auxiliary amplifier 25 W - With auxiliary amplifier 25/50 W	100 mA 650 mA 1,1 A 2,2 A
Power consumption: - With main amplifier 0,85 W - With higher-power main amplifier 11 W - With auxiliary amplifier 25 W - With auxiliary amplifier 25/50 W	 3,6 W 24 W 40 W 80 W
Bandwidth	from 300 Hz to 6800 Hz
Communication interface	Uk_0
Number of programmable direct connections / functions	up to 24
Communication protocol	Armtel
Main amplifier, W	0,85 or 11
Auxiliary amplifier, W	25 or 25/50
Max. sound pressure level of built-in speaker at 30 cm, dB	105/115
Ambient temperature range, ºC	From -55 to +55
Air humidity, %	Up to 100 % at +25˚C
Protection class as per GOST 14254-2015	IP66
Electrical safety class as per GOST IEC 61140-2012	III
Overall dimensions (version without handset), mm	515×130×205
Overall dimensions (for versions completed with handset), mm	540×130×225
Maximum weight, kg	6,9
Material	GRP
Color	Orange
Cable glands	2 nos M25×1,5 1 nos M20×1,5

Delivery includes



Set of operational documents



Mounting kit (bracket x2, bolt M6×16 DIN 933 x4, washer 6 DIN 127A x4, washer 6 DIN 9021 x4)

Optional modules

Module	Description
Two-way toggle switch (up to 3)	The module is designed for 2 connections or programmable functions with built-in LED indications of dedicated subscriber status and communication lines
Direct call pushbutton module for 8 connections	
Dial pad module with 12 pushbuttons	10 for dialing and 2 for communication control
Handset module	
Information phonebook plate	
Emergency module «INFO» with visual button and inscription	
Foot paddle	

DWEx[d] Explosion proof call station

ARMT.665230.006

DWEx Explosion Proof Call Station is a subscriber equipment to use at industrial and transportation enterprises within the digital Intercom and Public Address / General Alarm system Armtel DCN.

DWEx is designed for use in potentially explosive gas environment, except for mines and their ground structures that are mine gas hazardous according to explosion proof marking:

- **II 2 G Ex db eb ib IIC T6 Gb (EN 60079-0:2012)**

With markings for explosive dust environments:

- **II 2 D Ex tb IIIC T85 °C Db IP66**

Explosion proof is achieved by insulation of electrical circuits from interaction with dangerous environment by placing them in explosion proof box and providing electrical connections through “ib” spark-safe circuits.

Explosion proof

IP 66 Protection against temporary immersion in water

6,8 kHz Up to 6,8 kHz bandwidth

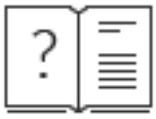
Key features:

- Two-way loud-speaking simplex communication with the help of integrated speaker and microphone;
- Loud-speaking voice communication in “half-duplex” mode with duplex devices like telephone sets;
- Group calls and Public Address, including zonal one;
- Extended voice signal bandwidth up to 6,8 kHz;
- Broadcasting of alarm signals and other pre-recorded messages from central exchange for single subscribers and group of subscribers;
- Indication of calls, busy subscriber, unanswered call and other modes on LED indicators of programmable keys;
- Translation of incoming sound messages via integrated loudspeaker and optional 25 W amplifier;
- Control of external signal device via built-in relay;
- Reliable communication via digital two-wire Uk_0-interface line to a distance of up to 6 km.

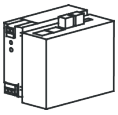
Technical specifications

Supply voltage range, V	from -36 V to -60 V
Maximum operating current:	
- With main amplifier	95 mA
- With auxiliary amplifier 25 W	1,1 A
Power consumption:	
- With main amplifier	3,5 W
- With auxiliary amplifier 25 W	40 W
Bandwidth	from 300 Hz to 6800 Hz
Communication interface	Uk_0
Number of programmable direct connections / functions	up to 24
Communication protocol	Armtel
Auxiliary amplifier	25 W
Max. sound pressure level of built-in speaker (at 1 m.)	95 dB
Ambient temperature range	from -40˚C to +70˚C
Air humidity	Up to 100 % at +25˚C
Protection class as per GOST 14254-2015	IP66
Electrical safety class according to GOST 12.2.007.0-75, IEC 61140-2012	III
Dimensions without handset	515×130×205 mm
Dimensions with handset	540×130×225 mm
Maximum weight	9,1 kg
Material	GRP
Color	Orange
Cable glands	2 nos M25×1,5 1 nos M20×1,5

Delivery includes



Set of operational documents



Mounting kit (bracket x2, bolt M6×16 DIN 933 x4, washer 6 DIN 127A x4, washer 6 DIN 9021 x4)

Optional modules

Module	Description
Two-way toggle module (from 1 to 3)	The module is designed for 2 connections or programmable functions with built-in LED indications of dedicated subscriber status and communication line
Direct call pushbutton module for 8 connections	
Dial pad module with 12 pushbuttons	10 for dialing and 2 for communication control
Handset module	
Foot paddle	

DIS-TOP Digital desktop call station

RLMT.465311.004

DIS-TOP Digital desktop call station is designated for use as a subscriber device or operator console at industrial and transportation enterprises within Armtel DCN intercom and PA/GA systems. DIS-TOP call station is installed at offices and control rooms.

6,8 kHz — Up to 6,8 kHz bandwidth

"Phantom" power supply by Uk_0-interface line

IP 42 — Protection against temporary immersion in water

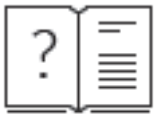
Key features:

- Installation: table, wall-mounted, embedded into a work surface (table top);
- 42 keys and graphical 4.3" TFT display with LED backlight;
- Connection of up to 3 additional EC-TOP expansion units, up to 42 keys each (see page 26);
- Two-way loud-speaking simplex communication by integrated loudspeaker, microphone and direct call keys with LED indication;
- Connection by pre-programmed direct call keys, memorizing and repeating of last call;
- Gooseneck microphone with wide frequency range and LED indication for incoming or outgoing call;
- Display of DIS-TOP provides information about number, date, time and type of communication, as well as numbers of calling and called subscribers;
- Four-color backlight of the direct call keys for indication of incoming and outgoing calls, type of communication, busy subscriber, unanswered and last calls;
- Speakerphone for loud-speaking communication with duplex subscribers;
- Volume control of integrated loudspeaker, headset loudspeaker and call signal with the help of pre-programmed keys;
- Reliable communication via two-wire digital Uk_0-interface line to distance of 6 km.

Technical specifications

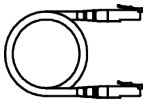
Operating voltage	from -36 V to -60 V
Operating / maximum consumption current	100 mA / 280 mA
Power consumption	10 W
Sound signal bandwidth	from 300 Hz to 6800 Hz
Communication interface	Uk_0
Communication protocol	Armtel
Power amplifier	1,0 W
Operating temperature	from -20˚C to +50˚C
Air humidity	Up to 80 % at +25˚C
Protection level as per GOST 14254-2015	IP42
Electrical safety class as per IEC 61140-2012	III
Dimensions on a stand and with raised microphone	245×275×406 mm
Maximum weight	1,35 kg
Material	Plastic
Color	Black or dark gray
Number of programmable direct connections / functions	42, up to 168 with expansion units

Delivery includes



Set of operational documents

Gooseneck microphone G14-2



F / UTP Patch Cord Shielded category 5e LSZH blue

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DTS-TOP Multifunctional desktop digital phone

RMLT.465484.002

DTS-TOP multifunctional desktop digital phone is designed for two-way voice communication under control of Armtel DCN Intercom and PA/GA system at industrial and transport enterprises. DTS-TOP, connected to the central exchange of the DCN system, provides all types of telephone and intercom communication.

6,8 kHz — Up to 6,8 kHz bandwidth

"Phantom" power supply by Uk_0-interface line

IP 42 — Protection against temporary immersion in water

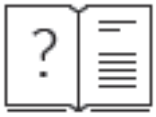
Key features:

- Use as a stand-alone phone (all functions of digital telephony) or simplex / duplex multifunction subscriber unit;
- Installation: table, wall-mounted, embedded into work surface (table top);
- 30 keys and graphical 4.3" TFT display with LED backlight;
- Connection of up to 3 additional EC-TOP expansion units, up to 42 keys each (see page 26);
- Simplex and duplex communication using handset or headset;
- Two-way loud-speaking simplex and duplex communication using integrated speakerphone;
- Connection by pre-programmed direct call keys, storing and redialing of last number;
- Display of DTS-TOP number, date, time and type of communication for incoming and outgoing calls, numbers of calling and called subscribers;
- Configuration of operation parameters using a display and functional keys with LED backlight of different colors;
- Four-color backlight of the direct call keys for indication of incoming and outgoing calls, type of communication, busy subscriber, unanswered and last calls;
- Additional LED indication on the front panel for incoming and outgoing calls;
- Volume control, call signal and display brightness by pre-programmed keys;
- Bilingual display menu.

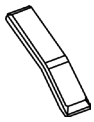
Technical specifications

Operating voltage	from -36 V to -60 V
Operating / maximum consumption current	110 mA / 220 mA
Power consumption	8 W
Sound signal bandwidth	from 300 Hz to 6800 Hz
Communication interface	Uk_0
Communication protocol	Armtel
Power amplifier	1.0 W
Operating temperature	from -20˚C to +50˚C
Air humidity	Up to 80 % at +25˚C
Protection level as per GOST 14254-2015	IP42
Electrical safety class as per GOST IEC 61140-2012	III
Dimensions with a stand	245×275×142 mm
Maximum weight	1,35 kg
Material	Plastic
Color	Black or dark gray
Number of programmable direct connections / functions	10, up to 136 with expansion units

Delivery includes

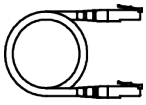


Set of operational documents



DTS-TOP handset

RMLT.469363.001



F / UTP Patch Cord Shielded category 5e LSZH blue

EC-TOP Expansion unit

RMLT.468366.001

EC-TOP expansion unit is an optional equipment and is designed to increase number of programmable keys of desktop digital call station DIS-TOP and DTS-TOP. It is used within Armtel DCN Intercom and PA/GA system at industrial and transportation sites. EC-TOP expansion unit is installed at offices and control rooms.

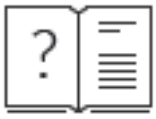
Key features:

- Installation: desktop, wall, flush mounted;
- Connection to DIS-TOP and DTS-TOP devices;
- 42 four-colour backlight keys of increased mechanical strength and durability;
- Simultaneous connection of up to 3 modules (expansion of DIS-TOP up to168 keys);
- 4-color keys for indication of incoming and outgoing calls, busy subscriber, unanswered call, last call;
- Power supply from DIS-TOP or DTS-TOP.

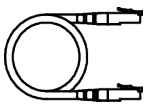
Technical specifications

Operating voltage	5,0 V
Operating / maximum consumption current	100 mA / 220 mA
Operating temperature	from -20˚C to +50˚C
Air humidity	Up to 80 % at +25˚C
Protection level as per GOST 14254-2015	IP42
Electrical safety class as per IEC 61140-2012	III
Dimensions on a stand	245×275×140 мм
Maximum weight	1,1 kg
Material	Plastic
Color	Black or dark gray

Delivery includes



Set of operational documents



Connecting cable

RMLT.469119.001

DIS Digital desktop call station

ARMT.665230.202

DIS digital desktop call station is designed for use as the subscriber equipment of Armtel DCN Intercom and PA/GA systems, at industrial and transportation sites.

DIS is installed in control rooms and offices.

6,8 kHz Up to 6,8 kHz bandwidth

IP 40 Protection against temporary immersion in water

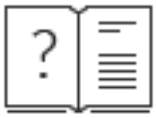
Key features:

- 8, 16, 24 and 32 keys;
- Connection of up to 4 additional DIS key expansion units, up to 48 keys each (see page 60);
- Two-way loud-speaking simplex communication with the help of integrated loudspeaker, microphone and direct call keys with LED indication;
- Two-way communication with subscribers with the help of a headset or external microphone with push-to-talk button; Connection with subscribers by preprogrammed direct call keys, memorizing and repeating of the last call;
- Extended voice signal bandwidth up to 6.8 kHz;
- High-sensitive gooseneck microphone. Red LED signaling ring on the microphone indicates the incoming or outgoing call;
- Call indication, subscriber busy signaling, unanswered call and other modes indicated on LEDs of the programmed keys;
- Speakerphone for loud-speaking communication with duplex subscribers;
- Volume control of built-in loudspeaker via the programmed keys;
- Reliable communication via two-wire digital Uk_0-interface line to a distance of 6 km;
- Option of “phantom” power supply by Uk_0-interface line.

Technical specifications

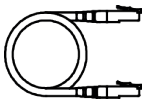
Supply voltage range	from -36 V to -60 V
Operating / maximum consumption current	35 mA / 100 mA
Power consumption	3,6 W
Bandwidth	from 300 Hz to 6800 Hz
Communication interface	Uk_0
Communication protocol	Armtel
Power amplifier	1 W
Operating temperature range	from -5˚C to +55˚C
Air humidity	up to 80 % at +25˚C
Protection degree	IP40
Electrical safety class as per IEC 61140-2012	III
Overall dimensions with maximum upright microphone	260×200×416 mm
Maximum weight	1,1 kg
Material	Plastic
Color	Gray
Number of programmable direct connections / functions	8, 16, 24, 32, up to 224 with expansion units

Delivery includes



Set of operational documents

1x8P8C socket for connection



Patch cord

Details of DIS Expansion unit see on page 60

DTS5 Multifunctional desktop digital phone

ARMT.665230.403

DTS5 multifunctional desktop digital phone is designed for use as a subscriber device at industrial and transportation sites within Armtel DCN Intercom and PA/GA system. DTS5, connected to the central exchange of the DCN system, provides all types of telephone communication.

6,8 kHz Up to 6,8 kHz bandwidth

"Phantom" power supply by Uk_0-interface line

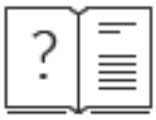
Key features:

- Use as a stand-alone phone or simplex / duplex multifunction subscriber unit;
- 20 keys dial pad;
- Connection of up to 4 additional DIS key expansion units, up to 48 keys each (see page 60);
- Simplex and duplex communication using handset or headset;
- Two-way loud-speaking simplex and duplex communication with the help of integrated speakerphone;
- Extended voice signal bandwidth up to 6.8 kHz;
- Display of DTS5 number, date, time and infirmation about incoming and outgoing calls;
- Configuration of operation parameters using a display and functional keys;
- Volume control of integrated loudspeaker and a handset speaker;
- Possibility of "phantom" power supply by Uk_0-interface line.

Technical specifications

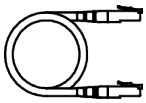
Operating voltage	from -36 V to -60 V
Operating / maximum consumption current	45 mA / 110 mA
Power consumption	4 W
Sound signal bandwidth	from 300 Hz to 6800 Hz
Communication interface	Uk_o
Communication protocol	Armtel
Power amplifier	1 W
Operating temperature	from -5˚C to +55˚C
Air humidity	Up to 80 % at +25˚C
Protection level as per GOST 14254-2015	IP40
Electrical safety class as per IEC 61140-2012	III
Dimensions	247×200×101 mm
Maximum weight	1,1 kg
Material	Plastic
Color	Gray

Delivery includes

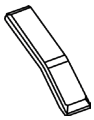


Set of operational documents

1x8P8C socket for connection



Patch cord

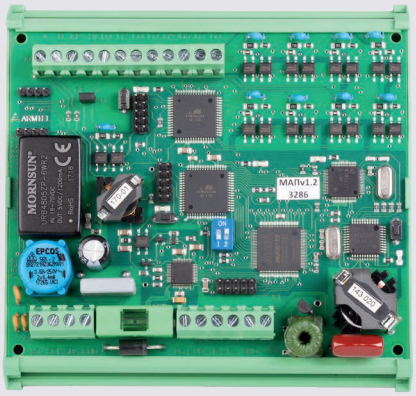


DTS5 handset

ARMT.665230.403.003

ACM Analogue subsystems module

ARMT.665230.002



Analogue subsystems module is a converter of digital communication interface Uk_0 into analogue. ACM allows to connect analog low-frequency lines and discrete control lines, alert and call signaling with DCN, IPN systems produced by Armtel.

Technical specifications

Operating voltage	from -36 V to -60 V
Operating current consumption	25 mA
Power consumption	1 W
Nominal output level	775 mV (0 db)
Analog line rated load resistance	600 Ohm
Speech bandwidth	from 300 to 6800 Hz
Signal / noise ratio	> 60 db
Control line input current	< 1 mA
Control line output current	> 50 mA
Communication interface	Uk_0
Communication protocol	Armtel
Operating temperature	from -5˚C to +55˚C
Air humidity	up to 80 % at +25˚C
Dimensions	130×125×50 mm
Weight	0,25 kg
Dimensions, max	125×90×60 mm
Mounting	Din rail mount included

Delivery includes

Set of operational documents

Radio connection gateway

ARMT.665200.121

The gateway for connecting of base radio station provides interfacing between a base radio station and digital Armtel DCN and IPN systems. The gateway enables to connect base radio stations such as MOTOROLA GM340 and GM360 or similar to analogue interfaces of the above mentioned systems for communicating with radio network subscribers. The gateway is located near a base FM-radio station or mounted in telecom cabinets or racks, control rooms or office premises.

Technical specifications

Operating voltage	from - 36 V to - 60 V
Operating current	50 mA
Max. operating current with radio station connected	750 mA
Power consumption	27 W
Operating temperature	from - 5 ˚C to + 55 ˚C
Air humidity	up to 80 % at 25 ˚C
Electrical safety class as per GOST IEC 61140-2012	III
Dimensions	125×72×66 mm
Maximum weight	0.16 kg
Mounting	Din rail mount included
Radio base station line parameters	
Rated analogue sound level at radio station input	0.15 V
Transmission signal voltage	from 3 to 12 V
Receive signal voltage	(0 ± 2) V
Max output current	20 mA
Signals for analogue circuit control	
Rated analogue sound level	0.78 V
Voltage across AB line mid-point in standby mode	U power ± 5 V
Voltage across AB line mid-point in active status	(0 ± 2) V

Delivery includes

Set of operational documents

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4x Relay module

ARMT.665200.117

4x relay module is used as a part of digital Armtel DCN and IPN Intercom and Public Address / General Alarm systems in industrial areas and transport facilities for switching the loudspeakers lines, signal devices and other external circuits. 4x relay module is installed in conjunction with switching equipment of DCN and IPN communication systems in 19'' racks or cabinets on a DIN-rail.

Technical specifications

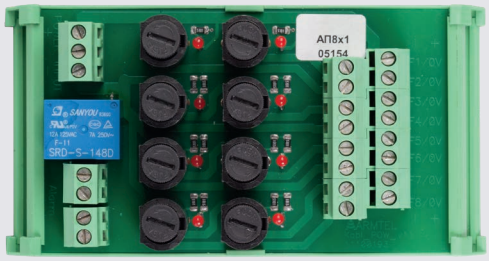
Supply voltage range	from - 36 V to - 60 V
Rated trip current	10 mA
Maximum switching power of load	336 W
Maximum switching DC voltage	110 V
Maximum switching AC voltage	250 V
Maximum switching DC Current	12 A
Maximum switching AC Current	10 A
Operating temperature	from - 5 ˚C to + 55 ˚C
Relative humidity	up to 80 % at + 25 ˚C
Electrical safety class as per GOST IEC 61140-2012	III
Dimensions	125×64×50 mm
Maximum weight	0.13 kg
Mounting	Din rail mount included

Delivery includes

Set of operational documents

8 fuse module

ARMT.665200.104



8 fuse module provides short-circuit protection of power supply outputs of exchange and subscriber units of digital Armtel DCN and IPN communication systems, that can occur in both communication line and inside the communication system device.

Technical specifications

Supply voltage range	from -36 V to -60 V
Power line fuse capacity*	2 A
Number of power lines connected	8
Clamped cable core section	from 0.2 to 2 mm^2
Operating temperature	from -5 ˚C to +55 ˚C
Relative humidity	up to 80 % at +25 ˚C
Electrical safety class as per GOST IEC 61140-2012	III
Dimensions	125×65×66 mm
Maximum weight	0.25 kg
Mounting	Din rail mount included

** Power line fuses with capacity up to 3A are allowed to use*

Delivery includes

Set of operational documents

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ArmtelICS hybrid communication system

ArmtelICS system is voice communication system based on IP technologies and is designed to provide intercom, public address and general alarm services for different industries (Oil and Gas, Energy and Transportation) with harsh environment, explosive zones and high noise level.

ArmtelICS hybrid communication system is the development of the IPN decentralized communication system by Armtel.

ArmtelICS system components: ArmtelICS Intercom Server (optionally), DSLAM16-IP2 multiplexer that provides access to subscribers equipment through ADSL line. ArmtelICS system allows to implement different solution topology: centralized and distributed using SIP (RFC 3261) protocol, decentralized using Armtel-IP protocol based on IP Multicast technology. Subscribers equipment supports different physical interface for network connection: 2x100BaseT Ethernet (network bonding), ADSL (IEEE802.3), WiFi (IEEE 802.11a/b/g/n), Uk_0 interface through Armtel IPN-8U Network switching module.

Seamless integration with 3rd party system and application by standard protocols and API

System reliability due to network link redundancy and data replication

Possibility to use different architecture: centralized, distributed and hybrid

ArmtelICS industrial communication system is used for:

Organization of the PA/GA

Organization of operational dispatch communication

Organization of group communication, conferencing

Communication in explosive and harsh conditions

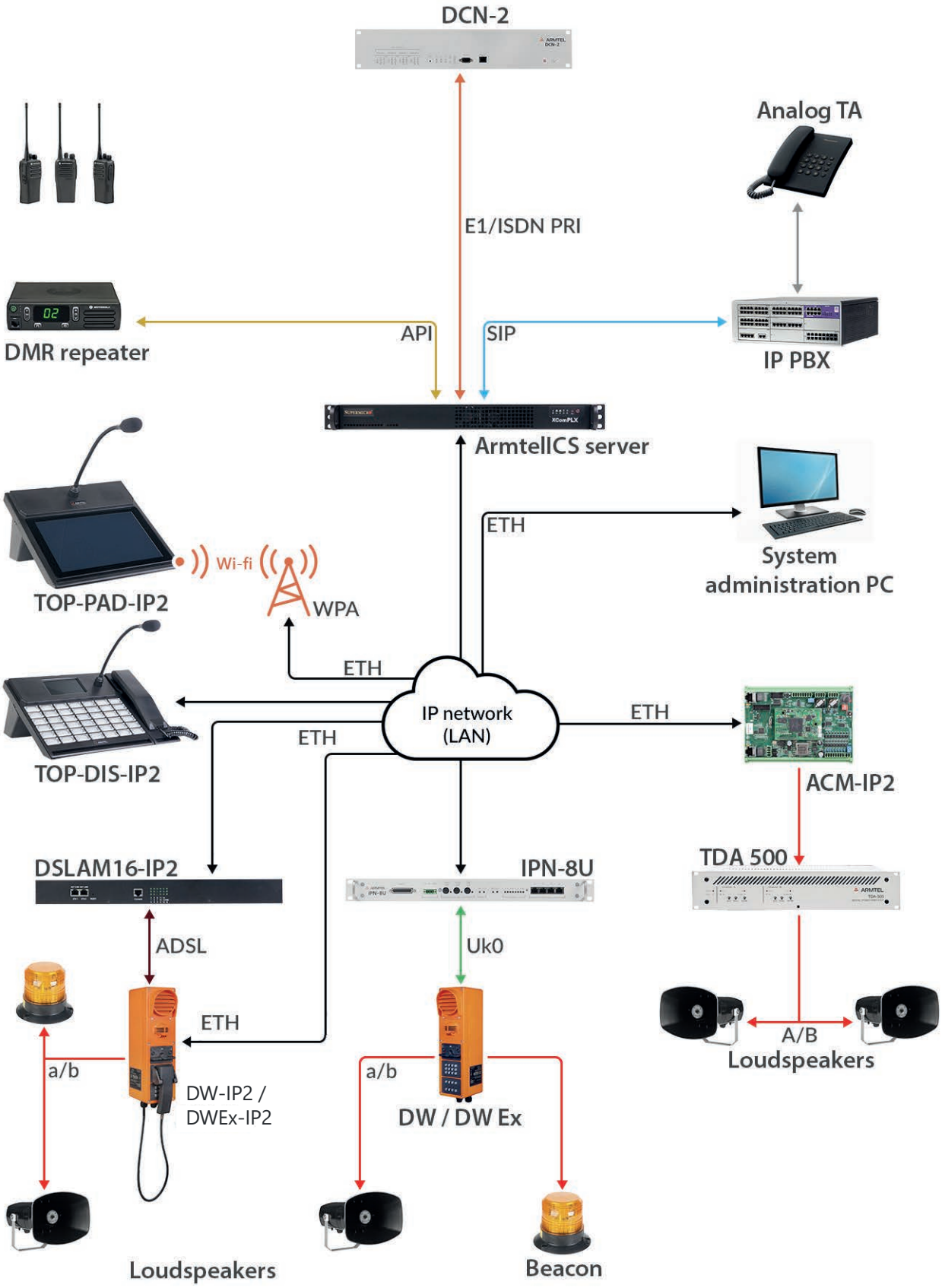
Communication with industrial cranes and stackers

Communication with radio subscribers

Key features:

- Direct simplex and duplex communications;
- Group simplex, half-duplex (selector and circular scenario) and duplex (conference) communications;
- Playback individual and group announcements to subscribers;
- Manual or automatic broadcasting of pre-recorded alarm tones and messages;
- Voice recording through WEB access to stored audio;
- Busy Line Field (BLF);
- Call prioritization;
- Full interoperability with Armtel DCN and Armtel IPN systems;
- Support industrial protocols, such as ModbusTCP;
- Integration with PBX through E1/ISDN PRI or SIP;
- API for seamless integration with 3rd party applications and systems (e.g., DMR-API for integration with DMR TierII digital mobile radio).

Example of industrial communication system based on **ArmtelICS**



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ArmtelICS Intercom Server

RMLT.465275.012

ISDN IP SIP

ArmtelICS Intercom Server is a core component of ArmtelICS hybrid communication system, which provides SIP registration for subscribers, call routing and transcoding of different codecs (include wideband codecs). ArmtelICS Intercom Server provides integration of different network technologies, packet-switched and circuit-switched networks within industrial communication system.

ArmtelICS Intercom Server hardware is based on x86 architecture. Hardware requirements depend on quantity of SIP subscribers. Therefore, maximum system capacity is unlimited and depends on hardware specification. For interoperability with Armtel DCN system and 3rd party PBX it is possible to add E1-PCIe extension boards. Fault tolerance is achieved by implementation of different replication and redundancy mechanism (1+1). SIP (RFC 3261) is main communication protocol for centralized ArmtelICS system.

14 kHz Up to 14 kHz bandwidth

Unlimited SIP subscribers number

Key features:

- Direct simplex and duplex communication with extended voice signal bandwidth up to 14kHz;
- Simplex and duplex multi-party call scenarios, including conference calls;
- Free numbering and 255 levels of priority;
- Supports API for seamless integration with 3rd party applications and systems (e.g., DMR-API for integration with DMR Tier II digital mobile radio);
- Voice recording with WEB access to stored audio;
- Remote configuration and monitoring (WEB GUI);
- Supported codecs: G.711A, G.711U, G.722.1(Siren7), G.722.1C (Siren14);
- Interconnecting of two or more ArmtelICS Intercom Servers into a single communication system;
- Integration with PBX through ISDN PRI or SIP;
- Support server redundancy.

Two order types are available for ArmtelICS Intercom Server:
• RMLT.465275.012 ArmtelICS Intercom Server, Hardware and Software package.
• RU.RMLT.00046-01 ArmtelICS Intercom Server SW, only Software package.

Technical specifications*

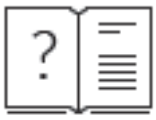
Operating voltage	from 100V to 240V, 60 Hz
Maximum power consumption	200, 350VA
Network interface	10Base-T, 100Base-TX, 1000Base-T
E1 (G.703/G.704) – optional	300 mA
Interface for peripheral devices	USB, COM, VGA
RJ-45 Ethernet connection	from 2 to 4
RJ-45 E1 connection (optional)	up to 4
Dimensions	437x43x503 мм
Max weight	8,5 kg
Signaling protocols	Armtel-IP, Armtel DCN, SIP, DSS/EDSS, Modbus TCP
Network protocols	RTP, RTCP, SNMP, HTTP, NTP
Hardware architecture	x86
Operating system	CentOS v7
Electrical safety class IEC 61140-2012	I
Air humidity	up to 90%
Operating temperature	from +10°C to +35°C

** for typical hardware configuration*

Hardware requirements

Hardware recommendation for RU.RMLT.00046-01 ArmtelICS Intercom Server SW order type.	
Up to 100 subscribers	CPU 2 core / 4Gb RAM
Up to 200 subscribers	CPU 4 core / 8Gb RAM
Up to 500 subscribers	CPU 8 core / 16Gb RAM

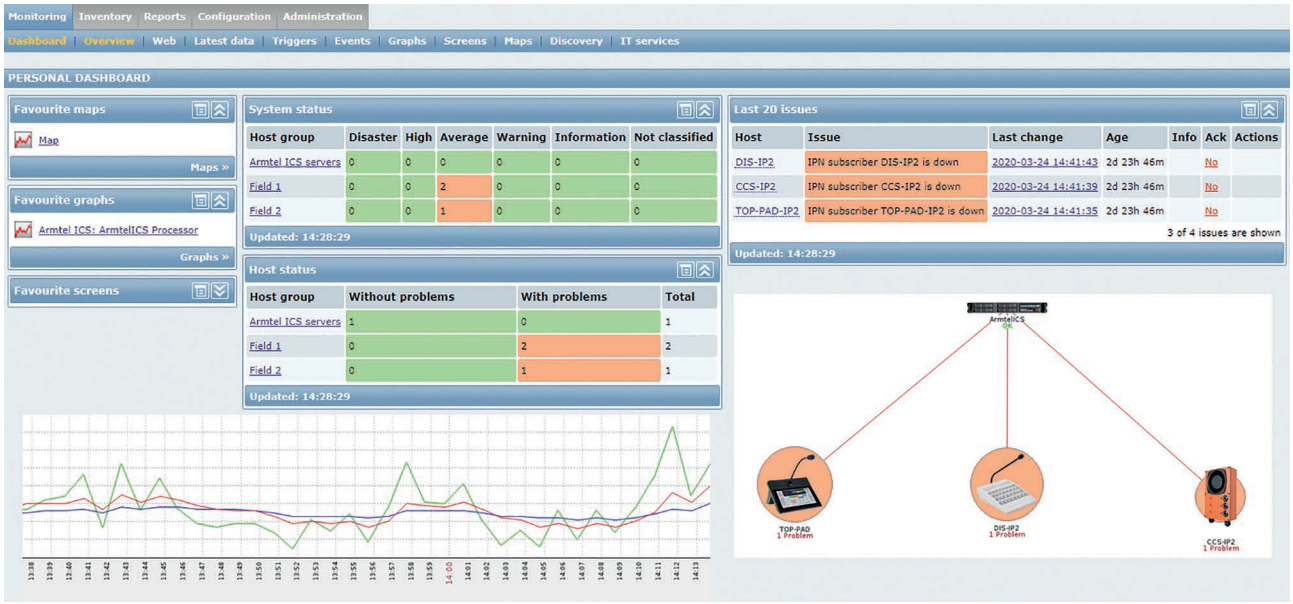
Delivery includes



Set of operational documents

Unified monitoring and configuration system Software tool

RU.RMLT.00042-01



Unified monitoring and configuration system software tool is intended for use in the system of technological communication of the enterprise and allows to create a unified system of monitoring and management for various segments of Armtel technological communication and all modifications of equipment and software. Unified monitoring and configuration system software tool is designed to configure, monitor the status and configuration management of nodes in communication system of the enterprise.

Software is built on the basis of software Zabbix, released under the license for free software (GNU General Public License, developer site: http://www.zabbix.com/).

Key features:

- Provides monitoring and management of Armtel communication system components;
- SNMP monitoring of 3rd party devices;
- Access via the web interface;
- Creating a network map with node status indication;
- Logging events in lists and graphs;
- Web interface and email notifications;
- Personal dashboard for system status overview;
- Separation of access rights for different users.

ArmtelICS Intercom Server Software

RU.RMLT.00046-01

ArmtelICS Intercom Server Software performs the tasks of managing, routing and switching calls of subscribers of the technological and dispatching communication system of the enterprise.

As the main telecommunication protocol, software uses the SIP signaling protocol (RFC 3261). For the transmission of voice information, the Real-Time Transport Protocol (RTP) (RFC 3550) is used.

The list of functions available to the subscriber is determined by the type of subscriber equipment. All voice connections of the ArmtelICS Server are in a single priority field, possible values from 0 (minimum priority) to 255 (highest priority).

Key features:

- Direct simplex and duplex communication with extended voice signal bandwidth up to 14 kHz;
- Simplex and duplex multi-party call scenarios, including conference calls;
- Free numbering and 255 levels of priority;
- Supports API for seamless integration with 3rd party applications and systems (e.g., DMR-API for integration with DMR Tier II digital mobile radio);
- Voice recording with WEB access to stored audio;
- Remote configuration and monitoring (WEB GUI);
- Supported codecs: G.711A, G.711U, G.722.1(Siren7), G.722.1C (Siren14);
- Interconnecting of two or more ArmtelICS Intercom Servers into a single communication system;
- Integration with PBX through ISDN PRI or SIP;
- Support server redundancy.

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DSLAM16-IP2 Multiplexer

RMLT.465275.010

DSLAM16-IP2 Multiplexer is the ADSL-router which provides access to equipment within the ArmtelICS hybrid communication system. DSLAM16-IP2 provides connection of user equipment via ADSL at downstream rate up to 24 Mbit/s and distance up to 6.5 km. DSLAM16-IP2 has 100BaseTX Ethernet uplink port.

6,5 km Up to 6,5 km distance to user equipment

16 ADSL subscribers

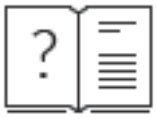
Key features:

- Simultaneous access for 16 ADSL subscribers;
- Up to 6.5 km distance to user equipment;
- Connection with the network via the 100BaseTX Ethernet interface;
- Controlled by the HTTP, TELNET and CLI protocols;
- SNMP support.

Technical specifications

Power supply	from 100 to 265 VAC 50/60Hz
Maximum power consumption	20 W
Communication interfaces	ADSL and 100BaseTX Ethernet
Number of ADSL subscribers	16
ADSL cable type	Twisted pair
Communication protocols	ANSI T1.413, ITU-T G.992.1, ITU-T G.992.2, ITU-T G.992.3, ITU-T G.992.5
Operating temperature	from 0˚C to +50˚C
Air humidity	Up to 95 %
Dimensions	481x250x45 mm
Max weight	4,5 kg

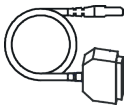
Delivery includes



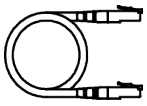
Set of operational documents

Network filter

RMLT.468822.001



Power cable PC-186



Patch cord SC03-8P8C3

IPN-8U Network switching module

ARMT.665200.006

Network switching module IPN-8U is designed for use in decentralized Intercom and PA/GA system. IPN-8U is a compact switching unit for 8 subscribers with Uk_0-interface and 4 FastEthernet ports for connection to IP-network. All Uk_0-interfaces are equipped with Powerover-U function – "phantom" power supply of subscribers with automatic protection against over-load. Ports of the built-in FastEthernet switch support PoE according to IEEE 802.3af Class 0, and can be used to connect and feed IP-subscriber devices.

6,8 kHz Up to 6,8 kHz bandwidth

6 km Up to 6 km distance

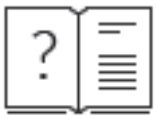
Key features:

- Connection of up to 8 ARMTEL subscriber with Uk_0-interface at a distance up to 6 km (only DIS, DW, DWEx and ACM devices);
- Provision of power supply for subscriber devices via the Uk_0-interface;
- Connection of up to 4 IP-devices or network equipment with Ethernet 100BaseT interfaces and switching of IP connections between them;
- Providing power supply to IP devices using PoE;
- Programming keys with indication on all devices connected to Uk_0-interfaces and storing settings and configuration data;
- Ability to register negotiations using certified equipment and software;
- Indication of connection status on keys of digital devices with Uk_0-interface;
- Switching of the connected digital subscriber devices with the Uk_0-interface to each other and to other subscribers of the IPN communication system according to the configuration data;
- Activation of the built-in relay of DW / DWEx call stations and ACM control lines (except for a group call);
- LED indication of the status of subscriber Uk_0-interfaces and Ethernet ports;
- Easy maintenance, built-in self-diagnosis and remote administration.

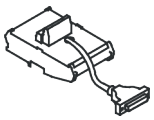
Technical specifications

Rated power supply voltage	-48 V
Operating voltage	from -36 V to -60 V
Maximum power consumption of IPN-8U (without PoU, PoE), max	9,1 W
Maximum load current of each Uk_0 port	300 mA
Maximum distance to a Uk_0 subscriber unit	6,0 km
Number of Uk_0 interfaces	8 ports with PoU
Inbuilt FastEthernet switch (10/100 Mb/s)	4 ports with PoE
Power Source unit class acc. to standard PoE IEEE 802.3af-2003	Class 0
Nominal output voltage of PoE	-48 V
Maximum output power of PoE source, per port	15,4 W
Protection rate	IP20
Operating temperature	from -5˚C to +55˚C
Air humidity	up to 80 % at +25˚C
Atmospheric pressure	from 84 to106,7 kPa
Electrical safety class	III
Dimensions, max	482,6×232×43,6 (19" 1U) mm
Maximum weight (without connection cable weight)	2,5 kg

Delivery includes



Set of operational documents

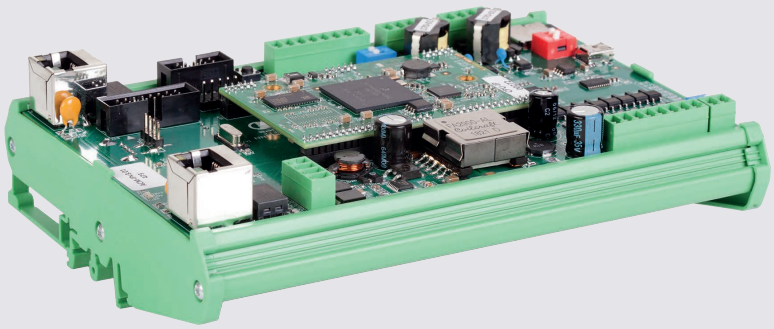


Connecting cable for IPN-8U subscribers

ARMT.665200.006.005

ACM-IP2 Analogue subsystems module

RMLT.465275.006



Analogue subsystems module ACM-IP2 is designated to be used at industrial and transportation sites in Armtel decentralized and centralized Intercom and PA/GA communication systems. ACM-IP2 allows to connect to a system various analogue equipment, amplifiers, analogue low-frequency lines and discrete control lines, signaling devices. ACM-IP2 provides interaction with automation and alarm devices. ACM-IP2 module has 1 A/F channel for connecting analogue devices and 8 I\O digital bi-directional control lines.

14 kHz — Up to 14 kHz bandwidth

Connection to analog communication systems

2xEth — 2xEthernet ports

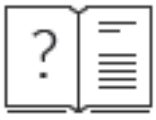
Key features:

- Connection of amplifiers in ARMTEL PA/GA system. Switching of loudspeaker lines (up to 8 zones);
- Communication between analogue and digital subscriber devices via the protocols Armtel-IP and SIP;
- Bi-directional conversion of IP interface into analog one to provide communication with analogue subscribers;
- Communication with analogue units using Ethernet;
- Recording of voice messages to the device memory in WAV format with linear encoding 16 bit 16 kHz;
- Playback of pre-recorded voice messages;
- Total duration of messages is up to 1500 minutes;
- Remote administration using the WEB interface or IPN system administration software.

Technical specifications

ACM-IP2	
Rated power supply voltage	-48 V
Power supply by PoE plus (IEEE 802.3at)	-48 V
Operating voltage	from -36 V to -60 V
Maximum current consumption	510 mA
Power consumption	18,4 W
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Communication interface (two Ethernet ports, one being stand-by, also for power supply by PoE)	100BaseT Ethernet
Communication protocol	Armtel-IP, SIP, SNMP
Total duration of sound fragments stored in the device memory, no less than	1500 min
Overall dimensions, max	174×125×55 mm
Maximum weight	0,3 kg
Number of analogue lines	1
Nominal input / output signal level	775 (0) mB (db)
Signal / noise ratio, min	75 db
Internal resistance of the line, max	1,0 kOhm
Electrical safety class	III
Air humidity	Up to 80 % at+25˚C
Operating temperature	from -5˚C to +55˚C
Mounting	Din rail mount included
Parameters of control lines	
Number of control lines (programmable)	8
Input current, max	5,0 mA
Output current, max	35 mA

Delivery includes



Set of operational documents

ACM-IP2.1 Analogue subsystems module

RMLT.465275.015

Analogue subsystems module ACM-IP2.1 is designated to be used within decentralized and centralized intercom and PA/GA systems Armtel IPN and ArmtelICS at industrial and transportation enterprises to connect analog equipment or interact with automation and signaling devices.

ACM-IP2.1 converts the digital communication interface to analog and vice versa. This allows you to connect analog subscribers, including simplex intercoms, amplifiers, analog low-frequency lines, discrete lines for control of terminal devices of simplex communication, warning and call signaling, analog communication systems, incl. legacy or receive commands from automation and alarm systems to trigger a PA announcement.

14 kHz Up to 14 kHz bandwidth

Connection to analog communication systems

Compact design

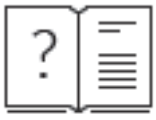
Key features:

- Simplex communication between analogue and digital subscriber devices via «Armtel-IP» and SIP protocols;
- Construction of loud-speaking zonal PA/GA system (up to eight zones);
- Handle priority connections via «Armtel-IP» and SIP protocols;
- Recording voice messages to the device memory (WAV format, linear encoding 16 bit 16 kHz);
- Storing messages with a total duration of up to 1500 minutes;
- Playback of pre-recorded voice messages;
- Connection of alarm and automation systems through «dry contact»
- Automatic playback of pre-recorded voice messages by commands from alarm systems;
- Broadcasting of individual and group announcements;
- Enabling control lines on command from other subscriber devices of the system;
- Control of external 48VDC relay;
- Remote administration and upload of voice messages.

Technical specifications

ACM-IP2.1	
Rated supply voltage	48 V
Supply voltage range	from 36 V to 60 V
Conformity with the PoE class	IEEE 802.3af Class 0
Revers polarity protection	available
Maximum current consumption (IEEE 802.3af Class 0), no more than	0,35 A
Maximum power consumption, no more than	3,5 W
Communication interfaces	100BaseT Ethernet
Communication protocols	Armtel-IP, SIP, SNMP
Total duration of sound fragments stored in the device memory, no less than	1500 min
Operating temperature	from -5˚C to +55˚C
Air humidity	Up to 80% at +25˚C
Overall dimensions	23×115×100 mm
Weight	0,2 kg
Mounting	Din rail mount included
Parameters of analogue lines	
Number of analogue lines	1
Nominal input / output signal level	775 (0) mB (db)
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Internal resistance of the line, max, kOhm	1,0
Parameters of control lines	
Number of control lines (programmable)	8
Input current, max	5,0 mA
Maximum output current per control line (at rated supply voltage 48 V), at least	40 mA

Delivery includes



Set of operational documents

DW-IP2 Weatherproof IP call station

RMLT.465311.006

SIP

ADSL

Armtel IP

DW-IP2 weatherproof loud-speaking call station is used at industrial and transportation sites in hybrid communication system ArmtelICS.

DW-IP2 is designed for outdoor use and harsh environments with high humidity, noise, dust and smoke levels including environments with aggressive chemical vapors, within the broad temperature range. DW-IP2 includes built-in software and configuration data for direct communication with other subscribers of the communication system, processing of calls priority, control of communication and indication modes.

2xEth — 2xEthernet ports

IP 66 — Protection against temporary immersion in water

14 kHz — Up to 14 kHz bandwidth

Key features:

- Wide range of optional modules;
- Group simplex calls;
- Duplex (with handset) and half-duplex communication via SIP protocol;
- Use of toggle switches / pushbuttons and dial pad for communication;
- Two ways of connection: Ethernet port or ADSL port via twisted pair cable;
- Communication via SIP or Armtel-IP protocols;
- Volume control of integrated loudspeaker and a handset speaker;
- One-way control mode and «End call» function;
- Recording and playback of voice messages;
- Indication of faults on call pushbuttons of associated device;
- Control of external signalimg device with the help of built-in relay.

Deliver includes

Set of operational documents

Mounting kit (bracket x2, bolt M6×16 DIN 933 x4, washer 6 DIN 127A x4, washer 6 DIN 9021 x4)

Technical specifications

Rated power supply voltage	-48 V
Operating voltage	from -37 V to -57 V
Conformity with the PoE class	IEEE 802.3af Class 0
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Maximum consumption current - versions without auxiliary amplifier 25W - versions with auxiliary amplifier 25W	 0,28 A 1,28 A
Sound pressure level of the integrated loudspeaker at maximum volume at a distance of 30 cm, min	114 db
Maximum electric power of the amplifier: - main amplifier - auxiliary amplifier	 2 W 25 W
Power consumption: - versions without auxiliary amplifier 25W - versions with auxiliary amplifier 25W	 10,4 W 47,4 W
Total duration of sound fragments stored in the device memory, no less than	1500 min
Communication interfaces	100BaseT Ethernet, ADSL, ADSL2, ADSL2+
Communication protocols	Armtel-IP, SIP, SNMP
Number of programmable direct connections / functions	up to 24
Audio data format (codec): - via SIP protocol	 G.711A (A-Law), G.711U (μ-Law), G.722.1
- via Armtel-IP protocol	Armtel-IP
Operating temperature	from -55˚C to +55˚C
Air humidity	up to 100 % at +25 °C
Protection level	IP66
Electrical safety class	II
Maximum dimensions: - versions without handset - versions with handset	 515×130×205 mm 540×130×225 mm
Maximum weight depending on versions	from 5,25 to 6,75 kg
Material	GRP
Color	Orange
Cable glands	2 nos M25×1,5 1 nos M20×1,5

Optional modules

Identification	Description
Two-way toggle module (from 1 to 3)	The module is designed for 2 connections or programmable functions with built-in LED indications of dedicated subscriber status and communication line
Direct call pushbutton module for 8 connections	
Dial pad module with 12 pushbuttons	10 for dialing and 2 for communication control
Handset with special bracket	
Information module for recording of required information	
Emergency module «SOS» with visual button and inscription	
Emergency module «INFO» with visual button and inscription	
ADSL-module	Integrated module for communication via twisted pair of ADSL line

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DWEx-IP2 Explosion proof IP call station

RMLT.465311.007

DWEx-IP2 Explosion Proof Call Station is a subscriber's equipment to use at industrial and transportation enterprises in hybrid communication system ArmtelICS.

DWEx-IP2 is designed for use in potentially explosive gas and dust environments, except for mines and their ground structures that are mine gas hazardous according to explosion proof marking:

- **II 2 G Ex db eb Ib IIC T4 Gb (EN 60079-0:2012)**
- **II 2 D Ex tb IIIC T135°C Db IP66 (EN 60079-0:2012)**

Explosion proof in is achieved due to the insulation of its electrical circuits from interaction with potentially dangerous gas or dust environment, by placing them in flame proof casing – explosion proof box, as well as providing the electrical connections of speaker, microphone and pushbutton switches through "ib" spark-safe circuits.

ADSL Connection up to 6,5 km

IP 66 Protection against temporary immersion in water

14 kHz Up to 14 kHz bandwidth

Key features:

- Used in IP-network, built on standard equipment;
- Different set of modules and optional equipment;
- Individual simplex communication via SIP and Armtel-IP protocols;
- Duplex (with handset) and half-duplex communication via SIP protocol;
- Programming of direct keys / pushbuttons and free dial of subscribers;
- Recording and playback of voice messages;
- Control of analogue subsystems modules with "Relay" function;
- Connection of subscribers via twisted pair through spare Ethernet port or by ADSL communication line;
- VoIP communication with real redundant dual Ethernet ports;
- Volume control of integrated loudspeaker and a handset speaker;
- Indication of faults on call pushbuttons of associated device.

Deliver includes

Set of operational documents

Mounting kit (bracket x2, bolt M6×16 DIN 933 x4, washer 6 DIN 127A x4, washer 6 DIN 9021 x4)

Technical specifications

Rated voltage	-48 V
Supply voltage range	from -37 V to -57 V
Conformity with the PoE class	IEEE 802.3af Class 0
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Maximum consumption current - versions without auxiliary amplifier 25W - versions with auxiliary amplifier 25W	 0,35 A 1,35 A
Power consumption: - versions without auxiliary amplifier 25W - versions with auxiliary amplifier 25W	 12,95 W 49,95 W
Sound pressure level of the integrated loudspeaker at maximum volume at a distance of 30 cm, min	104 db
Maximum electric power of the amplifier: - main amplifier - auxiliary amplifier	 1 W 25 W
Total duration of sound fragments stored in the device memory, no less than	1500 min
Communication interfaces	100BaseT Ethernet, ADSL, ADSL2, ADSL2+
Communication protocols	Armtel-IP, SIP, SNMP
Number of programmable direct connections / functions	up to 24
Audio data format (codec): - via SIP protocol	 G.711A (A-Law), G.711U (μ-Law), G.722.1
- via Armtel-IP protocol	Armtel-IP
Operating temperature	from -40˚C to +55˚C
Air humidity	up to 100 % at +25 ºC
Protection level	IP66
Electrical safety class	II
Maximum dimensions: - versions without handset - versions with handset	 515×130×205 mm 540×130×225 mm
Maximum weight depending on versions	from 8 to 9,55 kg
Material	GRP
Color	Orange
Cable glands	2 nos M25×1,5 1 nos M20×1,5

Optional modules

Identification	Description
Two-way toggle module (from 1 to 3)	The module is designed for 2 connections or programmable functions with built-in LED indications of dedicated subscriber status and communication line
Direct call pushbutton module for 8 connections	
Dial pad module with 12 pushbuttons	10 for dialing and 2 for communication control
Handset with special bracket	
ADSL-module	Integrated module for communication via twisted pair of ADSL line

TOP-PAD-IP2 Dispatcher console

RMLT.465329.001

TOP-PAD-IP2 is used in decentralized and centralized (on the basis of Armtel ICS intercom server) intercom and PA/GA systems at industrial and transportation sites.

TOP-PAD-IP2 is available in two versions: with and without the Wi-Fi module.

TOP-PAD-IP2 can be individually equipped with a handset (TOP-HS-IP2).

14 kHz — Up to 14 kHz bandwidth

Wi-Fi — Wi-Fi connection

IP 42 — Protection against temporary immersion in water

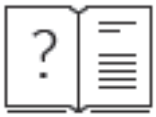
Key features:

- Color touch screen with a diagonal of 10.1 (1280x800 pixels);
- Communication interface: 2xEthernet 10BASE-T / 100BASE-X, WiFi;
- Redundancy of the network interfaces;
- Support for SIP and Armtel-IP protocols;
- Simplex and duplex communication modes;
- Support for broadband codecs (HD Voice, 14kHz);
- Desktop, wall and flush mounted versions;
- Support for noise and echo cancellation algorithms;
- PoE power supply or external power supply 12V;
- Ability to connect expansion units with mechanical buttons;
- Built-in Push-to-Talk and a removable microphone.

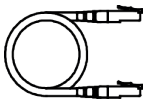
Technical specifications

Power supply by line PoE (IEEE 802.3at)	-48 V
External DC power supply	12 V
Maximum current consumption by line PoE	0,35 A
Maximum current consumption with 12 V power supply	1,23 A
Power consumption	16,7 W
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Built-in amplifier power at nominal signal level	1 W
Touch screen display	10,1 inch
Communication interfaces	2x100BaseT Ethernet, WI-FI 2.4/5GHz (IEEE 802.11a/b/g/n)
Communication protocols	Armtel-IP, SIP, SNMP
Total duration of sound fragments stored in the device memory, no less than	1500 min
Operating temperature	from -20˚C to +40˚C
Air humidity	Up to 80 % at +25˚C
Protection level	IP42
Electrical safety class IEC 61140-2012	III
Dimensions	246,5x275x141 mm
Weigh, kg	1,65
Max number TOP-EC-IP2 extension unit	2
Max number TOP-HS-IP2 handset module	1

Delivery includes



Set of operational documents



Patch cord

TOP-DIS-IP2 Intercom call station

RMLT.465311.009

TOP-DIS-IP2 intercom call station is used together with dedicated Armtel SIP server (Armtel ICS Server) or it can be used in serverless Armtel IPN intercom and public address system. Operator intercom stations can be placed on a table, built into a control desk, or mounted on a wall. Operator intercom stations can be individually equipped with a handset (TOP-HS-IP2).

Color 4.3 TFT display shows different types of information, e.g. name of subscriber, connection type (simplex or duplex), call history.

14 kHz Up to 14 kHz bandwidth

Wi-Fi Wi-Fi connection

IP 42 Protection against temporary immersion in water

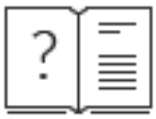
Key features:

- IP desktop intercom station for use in control rooms or control centers;
- Color TFT display 4.3 inch;
- 42 mechanical keys with multi-color status indications (e.g. call signaling);
- Network connection via dual Ethernet interface (10/100 Base-TX) ;
- Network connection via WiFi IEEE 802.11 (optional);
- PoE or external power supply;
- Audio bandwidth of up to 14 kHz;
- Degree of protection IP42;
- Simplex and duplex connections;
- All keys are freely programmable.

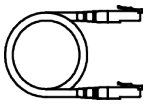
Technical specifications

Power supply	PoE (IEEE802.3at) or external power supply 12VDC
Maximum current consumption by line PoE	0,36 A
Maximum current consumption with 12 V power supply	1,31 A
Power consumption	19,1 W
Communication interfaces	2x100BaseT Ethernet
Wireless interface (optional)	WI-FI 2.4/5GHz (IEEE 802.11a/b/g/n)
Communication protocols	Armtel-IP, SIP, SNMP
Total duration of sound fragments stored in the device memory, no less than	1500 min
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Display	4,3 inch
Amplifier output	1 W
Temperature range	from -20˚C to +40˚C
Air humidity	Up to 80 % at +25˚C
Degree of protection	IP42
Depth x width x height	246,5x275x141 mm
Weight	1,56 kg
Max number TOP-EC-IP2 extension unit	2
Max number TOP-HS-IP2 handset module	1

Delivery includes



Set of operational documents



Patch cord

TOP-EC-IP2 Extension unit

RMLT.468366.009

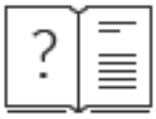
TOP-EC-IP2 extension unit is an optional equipment for increasing number of programmable keys of TOP-DIS-IP2 and TOP-PAD-IP2 operator call stations. It is used within ArmtelICS system at industrial and transportation sites. TOP-EC-IP2 expansion unit is installed in office and control rooms.

Key features:

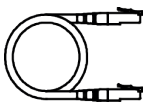
- Desktop, wall and flush mounted versions;
- Expansion of TOP-DIS-IP2 and TOP-PAD-IP2;
- 42 keys of increased mechanical strength and durability and four-colour backlight;
- Communication and control functions;
- Power supply from TOP-DIS-IP2 or TOP-PAD-IP2;
- Simultaneous connection of up to 2 modules (expansion of TOP-DIS-IP2 up to 126 keys);
- 4-colored LED direct keys for indication of incoming and outgoing calls, types of established communication, busy subscriber, unanswered call, last call.

Technical specifications	
Operating voltage	5,0 V
Maximum current consumption	1,3 A
Power consumption	6,1 W
Operating temperature	from -20˚C to +40˚C
Air humidity	Up to 80 % at +25˚C
Protection level as per GOST 14254-2015	IP42
Electrical safety class as per IEC 61140-2012	III
Dimensions on a stand	246,5×275×141 mm
Maximum weight	1,1 kg

Delivery includes



Set of operational documents



Connecting cable

RMLT.469119.001

DIS-IP2 Desktop call station

RMLT.465311.001

Desktop call station DIS-IP2 is a subscriber unit of Armtelics system, and designated to be used at industrial and transportation sites.

Each DIS-IP2 contains built-in software and configuration data, which allows it to communicate with other subscribers of the network directly, through wireless Wi-Fi data transmission channel or using ADSL, as well as to manage communication and indication modes.

14 kHz Up to 14 kHz bandwidth

Wi-Fi Wi-Fi connection

Key features:

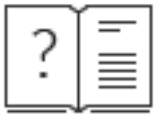
- 8, 16, 24 and 32 keys;
- Connection of up to 4 additional DIS key expansion units, up to 48 keys each (see page 60);
- Simplex communication with subscribers via protocols SIP, Armtel-IP;
- Duplex communication via SIP protocol;
- Communication between terminal devices via Wi-Fi, Ethernet LAN or using ADSL (for versions with ADSL module);
- Two Ethernet ports – main and a spare one, including power supply by PoE;
- Recording and playback of sound messages on DIS-IP2 with the help of programmed key with local function of fragment recording;
- Adjusting the volume of the built-in speakers and ringing tone with the programmed buttons.

The DIS-IP2 uses a highly sensitive microphone on a flexible «goose-neck» stand. The microphone has a red LED that indicates the type of incoming or outgoing communication with a constant glow or blinking.

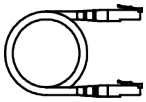
Technical specifications

Power supply by line PoE (IEEE 802.3af/ IEEE 802.3at)	48 V
External DC power supply	12 V or 48 V
Maximum current consumption by line PoE	0,3 A
Maximum current consumption with 48 V power supply	0,3 A
Maximum current consumption with 12 V power supply	1,2 A
Power consumption	14,4 W
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Maximum electric power of built-in two-channel amplifier, for each channel, min	1 W
Communication interfaces	2x100BaseT Ethernet, ADSL, WI-FI 2.4
Communication protocols	Armtel-IP, SIP, SNMP
Total duration of sound fragments stored in the device memory, no less than	1500 min
Operating temperature	from -5˚C to +55˚C
Air humidity	Up to 80 % at +25˚C
Protection level	IP40
Electrical safety class	III
Dimensions	285×200×416 mm
Maximum weight depending on versions	from 0,97 to 1,18 kg

Equipment



Set of operational documents



Patch cord

Optional equipment

DIS Expansion unit

ARMT.665230.207

DIS Expansion unit is the optional equipment and designed for increase number of programmable direct keys of the subscriber equipment DIS, DTS5 and DIS-IP2 of Armtel digital Intercom and PA/GA communication systems. DIS expansion unit can be connected to the main unit of subscriber equipment via flexible cable with IDC connector. The enclosure base of the expansion unit and subscriber equipment can be reinforced by steel bracket incorporating into the scope of supply.

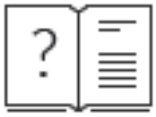
Key features:

- Connecting to DIS, DIS-IP2, DTS5;
- 8, 16, 24, 32, 40, 48 keys;
- Communication and control functions according to the configuration data of the subscriber unit as part of the communication system;
- Power supply is carried out from the subscriber equipment;
- Total number of programmable direct keys can be extended up to 224 when connecting to DIS, DIS-IP2 and up to 192 when connecting to DTS5;
- Call indication, subscriber busy signaling, unanswered call and other modes indicated on LEDs indication of the programmed keys.

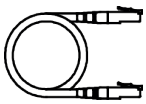
Technical specifications

Operating Voltage	3,3 V; 5,0 V
Operating / maximum consumption current	20 mA / 200 mA
Operating temperature range	from -5˚C to +55˚C
Air humidity	from 80 % at +25˚C
Protection degree	IP40
Electrical safety class as per IEC 61140-2012	III
Overall dimensions	247×200×76 mm
Maximum weight	0,9 kg

Delivery includes

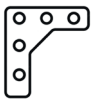


Set of operational documents



Connecting cable

ARMT.665230.207.002



Bracket

ARMT.665230.207.000.002

CCS-IP2 Compact IP Call Station

RMLT.465311.015

from RMLT.465311.015
to RMLT.465311.015-02

from RMLT.465311.015-06
to RMLT.465311.015-20

from RMLT.465311.015-21
to RMLT.465311.015-23

SIP IP Armtel IP

CCS-IP2 is a compact call station designed for indoor and outdoor use. CCS-IP2 is commonly used in distributed systems of loud-speaking operational and technological communication in electric power and transportation industries.

14 kHz Up to 14 kHz bandwidth

ADSL ADSL connection

IP 66 Protection against temporary immersion in water

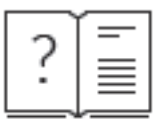
Key features:

- Metallic housing made of aluminum;
- IP66 protection rate;
- VoIP intercom communication with real redundant dual Ethernet ports;
- Customized set of modules;
- Connection of subscribers via Ethernet or by ADSL communication line;
- Optional in built 25W amplifier for direct connection to external loudspeaker for versions from RMLT.465311.015 to RMLT.465311.015-02 and from RMLT.465311.015-21 to RMLT.465311.015-23 (Amplifier 25W retrofit kit CCS RMLT.465937.001);
- Duplex and half-duplex communication via SIP protocol;
- Dial pad for free dial of subscribers or version with direct keys;
- LCD alphanumeric display;
- Volume control of integrated loudspeaker;
- Front panel visual indication;
- Built-in versions for flush mount installation.

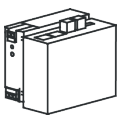
Technical specifications

Rated supply voltage	48 V
Supply voltage range	from 37 to 57
Conformity with the PoE class	IEEE 802.3af Class 0
Revers polarity protection	available
Maximum current consumption, no more than	0,28 A
Maximum power consumption, no more than	12 W
Bandwidth of low-frequency signal (by level -3 db)	от 300 до 14000 Hz
Maximum power of integral relay when external execution units (devices) are connected (in supply voltage range of CCS-IP2), no more than	60 W
Maximum electrical power of the amplifier of the integrated speaker, at least	2 W
Total duration of sound fragments stored in the device memory, no less than	1500 min
Sound pressure level of the integrated speaker at maximum volume, SPL at a distance of 1 m (0,5 m), at least: - versions from RMLT.465311.015 to RMLT.465311.015-02, from RMLT.465311.015-21 to RMLT.465311.015-23 - versions from RMLT.465311.015-06 to RMLT.465311.015-20	92 (98) dB 95 (100) dB
Communication interfaces	100BaseT Ethernet, ADSL, ADSL2, ADSL2+
Communication protocols	Armtel-IP, SIP, SNMP
Audio data format (coder/decoder): – over SIP protocol – over Armtel-IP protocol	 G.711A (A-Law) G.711U (μ-Law) G.722.1 Armtel-IP
Overall dimensions, no more than – for surface mount versions – for flush mount versions	 265×150×68 mm 240×150×64 mm
Ingress Protection	IP66
Impact Resistance (for versions from RMLT.465311.015-21 to RMLT.465311.015-23)	IK08
Material	Aluminum
Weight, max	1,4 kg
In-Built additional Amplifier (RMLT.465937.001) (Optional for versions from RMLT.465311.015 to RMLT.465311.015-02 and from RMLT.465311.015-21 to RMLT.465311.015-23)	25 W
Power consumption with additional amplifier	49 W
Operating temperature range: for versions from RMLT.465311.015 to RMLT.465311.015-02 for versions from RMLT.465311.015-06 to RMLT.465311.015-23	 from -20˚C to +60˚C from -40˚C to +60˚C
Air humidity	up to 100 % at +25˚C

Deliver includes



Set of operational documents



Mounting kit (bracket x2, bolt M6×16 DIN 933 x4, washer 6 DIN 127A x4, washer 6 DIN 9021 x4)

CCS-IP2-CR Crane Call Station

RMLT.465311.021

Crane Call Station CCS-IP2-CR is a subscriber crane equipment designed for use in decentralized and centralized intercom and PA/GA systems IPN and ArmtelICS at industrial and transportation enterprises. The device provides communication between the crane operator and other subscribers, incl. dispatcher and other workers.

CCS-IP2-CR Crane Call Station is designed for use in crane cabins (or similar facilities in terms of operating conditions) installed on industrial cranes operated in open space or industrial facilities.

14 kHz — Up to 14 kHz bandwidth

ADSL — ADSL connection

2xEth — 2xEthernet ports

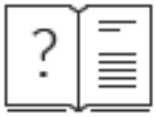
Key features:

- Two-way loud-speaking simplex communication via Armtel-IP and SIP protocols;
- Duplex and half-duplex communication via SIP protocol;
- Indication of busy call, incoming and outgoing calls, unanswered call notification on direct buttons;
- Free programming of the direct buttons (up to 4 pcs.);
- Connection to the IP network via Ethernet 100BaseT or ADSL;
- Network connection redundancy in versions with two Ethernet interfaces;
- Enabling organization of a group simplex call;
- Volume adjustment for the integrated loudspeaker;
- Call implementation on a priority basis (up to 255 priority levels);
- Control (commutation) of external actuating devices using an integrated electro-mechanical relay (lamp-type signaling device);
- Ability to connect a microphone with push-to-talk, a push-to-talk device or a foot paddle.

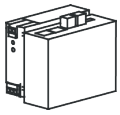
Technical specifications

Rated supply voltage	48 V
Supply voltage range, V	from 37 to 57
Conformity with the PoE class	IEEE 802.3af Class 0
Reverse polarity protection	available
Maximum current consumption	0,28 A
Maximum power consumption	12 W
Maximum switching power the integrated relay (in CCS-IP-CR supply voltage range)	60 W
Bandwidth of low-frequency signal (by level -3 db)	from 300 to 14000 Hz
Sound pressure level at maximum volume, SPL at a distance of 0,3 m, at least	97 dB
Maximum electric power of the integrated loudspeaker amplifier, no less than	2 W
Number of programmed direct connections/ functions	4
Total duration of sound fragments stored in the device memory, no less than	1500 min
Communication interfaces	100BaseT Ethernet, ADSL, ADSL2, ADSL2+
Communication protocols	Armtel-IP, SIP, SNMP
Audio data format (coder/decoder): - over SIP protocol - over Armtel-IP protocol	 G.711A (A-Law),G.711U (μ-Law), G.722.1 Armtel-IP
Ingress protection: Wall-mount Flush-mount	 IP65 IP1X
Material	Aluminum
Operating temperature range,	from -40°C to +50°C
Air humidity: Wall-mount Flush-mount	 up to 100 % at +25˚C up to 80 % at +25˚C
Optional In-Built additional Amplifier (RMLT.465937.001)	25 W
Power consumption with additional amplifier	49 W
Maximum dimensions: Wall-mount Flush-mount Gooseneck microphone	 245×146×58 mm 222×146×58 mm Ø27×375 mm
Maximum weight: Wall-mount Flush-mount	 1,7 kg 1,6 kg

Equipment



Set of operational documents



Mounting kit (bracket x2, bolt M6×16 DIN 933 x4, washer 6 DIN 127A x4, washer 6 DIN 9021 x4)

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TDA-250 Single-channel amplifier

ARMT.665230.140

TDA-250 digital amplifiers are used in the industrial public address systems DCN and IPN manufactured by Armtel for signal output to 100 V public address lines. The amplifiers are equipped with one channel, with class D output stage and transformer isolation, having the efficiency over 85%. The built-in protection against overvoltage, short-circuit, idle running and overheat, as well as the availability of stand-by supply input for the amplifiers improve reliability of the public address system based on these amplifiers

Key features:

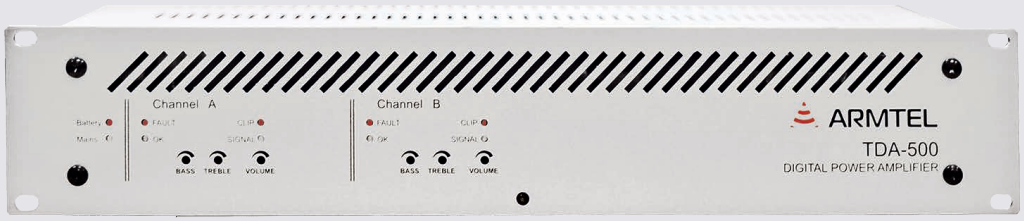
- Steel enclosure of 2U height for installation in 19" cabinet;
- Main supply 110/230 VAC, the standby supply input of 48 VDC;
- Automatic switch to the standby supply with the main supply power-off;
- Symmetrical LF-inputs with transformer galvanic isolation;
- lower heat emission, with the efficiency over 85%;
- LED indicators of signals and operation modes;
- Volume controls, high and low frequency tone controls;
- Built-in control circuit for soft line power-on;
- Built-in protection circuit against overload and overheat.

Technical specifications

Parameter	Measurement conditions for TDA-250	Value
Power (RMS – Rated Maximum Sinusoidal) (at 230V ~power supply)	40 Ohm/100 V	1x250 W
Output power	48 VDC	1x240 W
The coefficient of nonlinear distortions + noise	1 KHz 200 W	0,29 %
Frequency range	-3 dB	90 Hz-20 kHz
Input sensitivity	70 Hz-20 KHz	1V eff.
Input impedance	1 kHz	10 kOhm
Signal-noise ration	1 kHz, 250 W; volume 0,5	85
Electronic-balanced inputs	One input for channel	
Current consumption	Standby 48 VDC	0,08 A
	Standby 230 VAC	0,045 A
	Without signal 48 VDC	0,20 A
	Without signal 230 VAC	0,08 A
	Full load 48 VDC sine signal	6,3 A
	Full load 230 VAC sine signal 100 V, 40 Ohm	1,5 A
Operating temperature range	From -5˚C to +40˚C	
Relative air humidity	From 5 to 95 %	
Dimensions	19“ 2U (482x88x256 mm)	
Weight	12,5 kg	

TDA-500 Dual-channel amplifier TDA-500

ARMT.665230.139



TDA-500 digital amplifiers are used in the industrial public address systems DCN and IPN manufactured by Armtel for signal output to 100 V public address lines. The amplifiers are equipped with two amplifier channels, with class D output stage and transformer isolation, having the efficiency over 85%. The built-in protection against overvoltage, short-circuit, idle running and overheat, as well as the availability of stand-by supply input for the amplifiers improve reliability of the public address system based on these amplifiers

Key features:

- Steel enclosure of 2U height for installation in 19" cabinet;
- Main supply from 110/230 VAC, the standby supply input of 48 VDC;
- Automatic switch to the standby supply with the main supply power-off;
- Symmetrical LF-inputs with transformer galvanic isolation;
- lower heat emission, with the efficiency over 85%;
- LED indicators of signals and operation modes;
- Volume controls, high and low frequency tone controls;
- Built-in control circuit for soft line power-on;
- Built-in protection circuit against overload and overheat.

Technical specifications

Parameter	Measurement conditions for TDA-500	In dual-channel mode	In single-channel mode
Power (RMS – Rated Maximum Sinusoidal) (at 230V ~power supply)	40 Ohm/100 V	2x250 W	1x500 W 200 Ohm/100 V
Output power	48 VDC	2x240 W	1x480 W
The coefficient of nonlinear distortions + noise	1 KHz 200 W	0,29 %	
Frequency range	-3 dB	90 Hz-20 kHz	
Input sensitivity	70 Hz-20 KHz	1V eff.	
Input impedance	1 kHz	10 kOhm	
Signal-noise ration	1 kHz, 250 W; volume 0,5	85	
Electronic-balanced inputs	One input for each channel (it is possible to connect both inputs, if necessary)		
Current consumption	Standby 48 VDC	0,10 A	0,10 A
	Standby 230 VAC	0,058 A	0,058 A
	Without signal 48 VDC	0,25 A	0,25 A
	Without signal 230 VAC	0,14 A	0,14 A
	Full load 48 VDC sine signal	12,5 A	12,5 A
	Full load 230 VAC sine signal 100 V, 40 Ohm	3,1 A	3,1 A
Operating temperature range	From -5˚C to +40˚C		
Relative air humidity	From 5 to 95 %		
Dimensions	19" 2U (482x88x256 mm)		
Weight	16,5 kg		

25W DIN Rail Amplifier

RMLT.468731.011

25W DIN rail amplifier is designed for use in industrial communication and PA systems in industrial and transport enterprises. The device performs functions of amplifying an analog signal for its subsequent transmission to a loudspeaker.

25W DIN rail amplifier is mounted on a 35 mm DIN rail in telecommunication racks / cabinets located in control rooms, offices and other similar rooms.

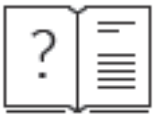
Key features:

- Connecting loudspeakers on 100 V line;
- Mounting on a 35 mm DIN rail;
- Power reverse polarity protection;
- Connecting speakers up to 25 W;
- Short circuit protection at amplifier output.

Technical specifications

Rated supply voltage of amplifier	48 VDC
Permissible supply voltage range	from 36 to 60 VDC
Nominal output voltage of amplifier	100 VAC
Rated voltage of input signal	1,2 VAC
Rated output power of amplifier	25 W
Maximum consumption current at supply voltage 36/48/60 VDC, no more	0,95/0,72/0,58 A
Bandwidth of LF signal (at -3 dB level)	from 300 to 6800 Hz
Ingress protection	IP40
Operating temperature range	from -20 to +55 °C
Air humidity	up to 80 % at +25 ˚C
Dimensions	121×80×84 mm
Maximum weight , kg	0,92 kg

Equipment



Set of operational documents

ARMTEL LCU Line Monitoring Module

ARMT.665230.327

The ARMTEL LCU Line Monitoring Module is a digital speaker line monitoring system to monitor ground faults and short circuits, impedance deviations and line breaks in 100 V loudspeaker lines.

Depending on the number of connected Relay Boards (ARMTEL LCU-REL) 8, 16, 24 or 32 loudspeaker lines can be monitored. The system can carry out measurements at adjustable intervals from 2 minutes to 24 hours. Up to 4 lines which were previously measured as defective (short-circuited) can be disconnected from the system to protect the connected power amplifier.

During these measurements any connected volume control systems can be bridged by means of dry relay contacts. In case of an incoming mandatory announcement (e.g. emergency announcement), active measurements are interrupted, so an emergency call can also be started during a measurement sequence.

Key features:

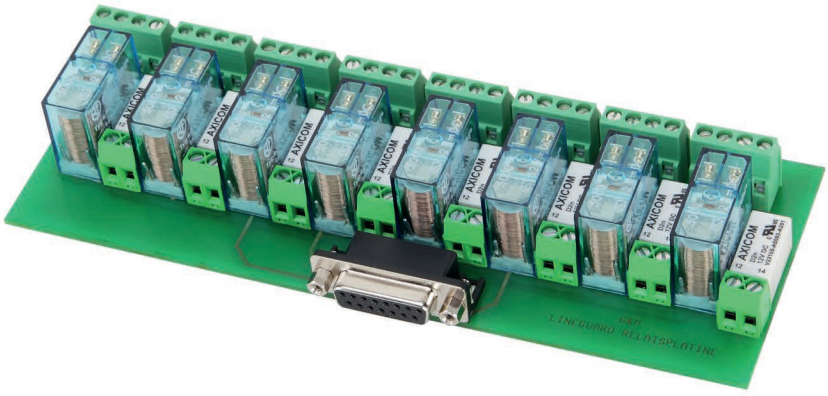
- Monitoring of 8, 16, 24 or 32 loudspeaker lines;
- Measurements at adjustable intervals from 2 minutes to 24 hours;
- LCD for displaying information;
- Sound and LED signal when a malfunction of loudspeakers lines is detected;
- Priority of emergency calls under measurements;
- Disconnection of up to 4 lines, which were measured as defective due to short circuit;
- Closing relay for fault signaling.

Technical specifications

Electrical data	
Operating voltage	230 VAC
Power consumption	20 W
Measurement range	from 25 to 1600 Ohm (256 levels)
Measurement frequency	10 kHz/16 kHz (selectable)
Measurement interval	from 2 min. to 24 h.
Environmental requirements and standards	
Operating temperature rate	-5˚ C to +50˚ C
Operating humidity rate	5 % to 80 %
Mechanical data	
Height x Width x Depth	45 x 483 x 240 mm
Weight	4 kg
Color	Black with light gray front panel

Line control Relay-board

ARMTEL LCU-REL Relay Board for 8 speaker lines, including a 15-pin D-SUB cable for connection to the ARMTEL LCU Line Monitoring Module. Up to 4 ARMTEL LCU-REL Relay Boards may be connected to one module.



Technical specifications

Connection cable	15-pin D-SUB cable
Inputs	8
Outputs	8
max. Relays Voltage	160 AC
max. Relays Current	5A AC
Relays Power	800 W
max. Signal relay Voltage	48 VDC
max. Signal relay Current	1A DC

Ver. 2.0
2021

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