



# SMART - SAFE - INNOVATIVE

2N ELEVATOR SYSTEMS - Emergency communication devices for any lift.





An Axis company



*“For 28 years 2N has been on the forefront of access control and telecommunications. We take care to stay on the leading edge with our products, the R&D behind them, and the way we service our customers. We are proud of our growth on global markets and growing number of key players in elevator market becoming our customers.”*



**MICHAL KRATOCHVÍL**










CEO, 2N Telekomunikace a.s.

*„AXIS Group including 2N have a common goal to contribute to a smarter and safer world. There is an increased customer demand for integrated solutions with open standards that deliver enhanced security. Together with 2N we can meet that demand.“*



**PETER LINDSTRÖM**

Vice President New Business, Axis Communications

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# 2N® LIFTIP

*The 2N® LiftIP is a unique product on the lift communication systems market. It is using VoIP technology for transmitting call from a lift cabin. Therefore, you can install it anywhere where an IP infrastructure is available. What's more, installation requires no additional converters or other hardware. The 2N® LiftIP provides high quality transmission of sound and continuous online monitoring.*

Quick installation

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Full duplex audio

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Future proof solution



2N® LiftIP  
CABIN UNIT COP

COP version - fixed  
**ord. 920640E**  
COP version - wired  
**ord. 920640XE**



2N® LiftIP  
CABIN UNIT  
FLUSH MOUNT

With button  
**ord. 920618BE**  
Without button  
**ord. 920618E**



2N® LiftIP  
CABIN UNIT TOC

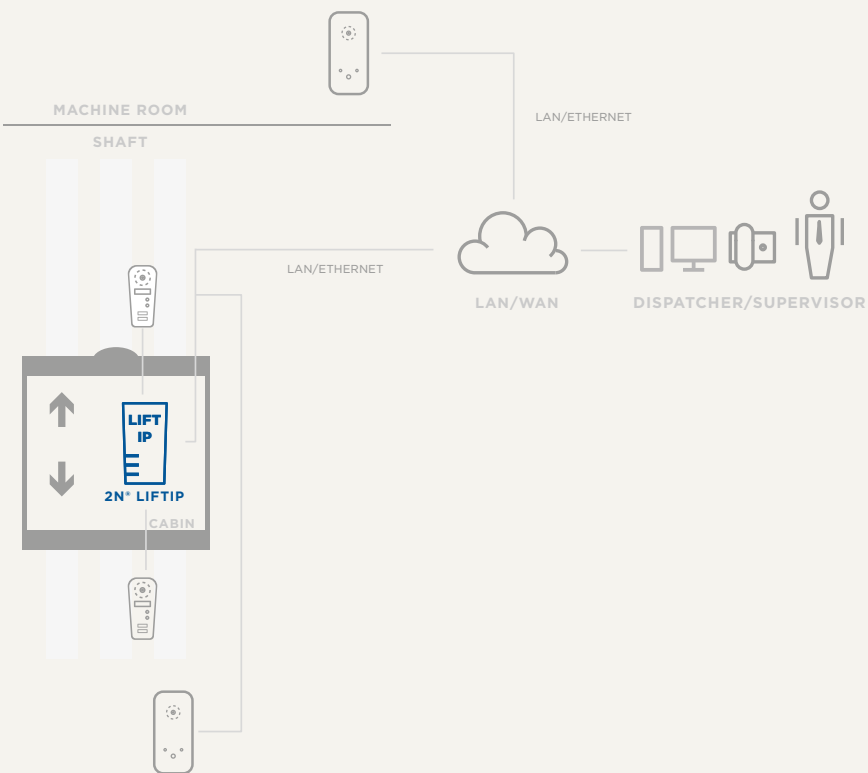
With Voice alarm station switch  
**ord. 920631E**  
Without Voice alarm station switch  
**ord. 920630E**



2N® Lift1/IP VOICE ALARM  
STATION SET

For top and under cabin  
**ord. 913661ESET**

## Installation



## Technical Specifications

Voltage	10 - 30V DC, PoE (48V)
Consumption	Maximum 6 W
Alarm/Cancel input	5-48 V DC
Speaker	Integrated 16Ω / 0.25W
Microphone	Integrated
Audio	Full duplex
Induction loop output	0,5V RMS / 75 Ω
Pictograms	12 - 24 V DC / 200mA
Dimensions	65x130x24 mm
Operating temperature	- 20 °C - +50°C

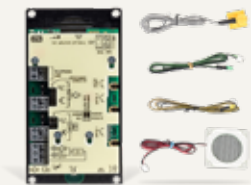
# 2N® LIFT1

The 2N® Lift1 communication solution is designed for two-way emergency communication in the lift. Its typical use is in elevators where communication is required between the cabin and the control centre or machine room.

A comprehensive solution  
for single lift

Fully powered over phone line

Supports CPC and P100 protocols



2N® Lift1  
CABIN UNIT COP

COP version - fixed  
**ord. 919640E**  
COP version - wired  
**ord. 919640XE**



2N® Lift1  
CABIN UNIT  
SURFACE MOUNT

With button  
**ord. 919645E**  
Without button  
**ord. 919645WBE**



2N® Lift1  
CABIN UNIT  
FLUSH MOUNT

With button  
**ord. 919618BE**  
Without button  
**ord. 919618E**



2N® Lift1  
CABIN UNIT TOC

With Voice alarm station switch  
**ord. 919631E**  
Without Voice alarm station switch  
**ord. 919630E**



2N® Lift1 VOICE ALARM  
STATION SET

For top and under cabin  
**ord. 913661ESET**



2N® Lift1 MACHINE ROOM  
STATION SET

Machine room unit  
**ord. 919654ESET**



2N® Lift1 USB  
PROGRAMMING TOOL

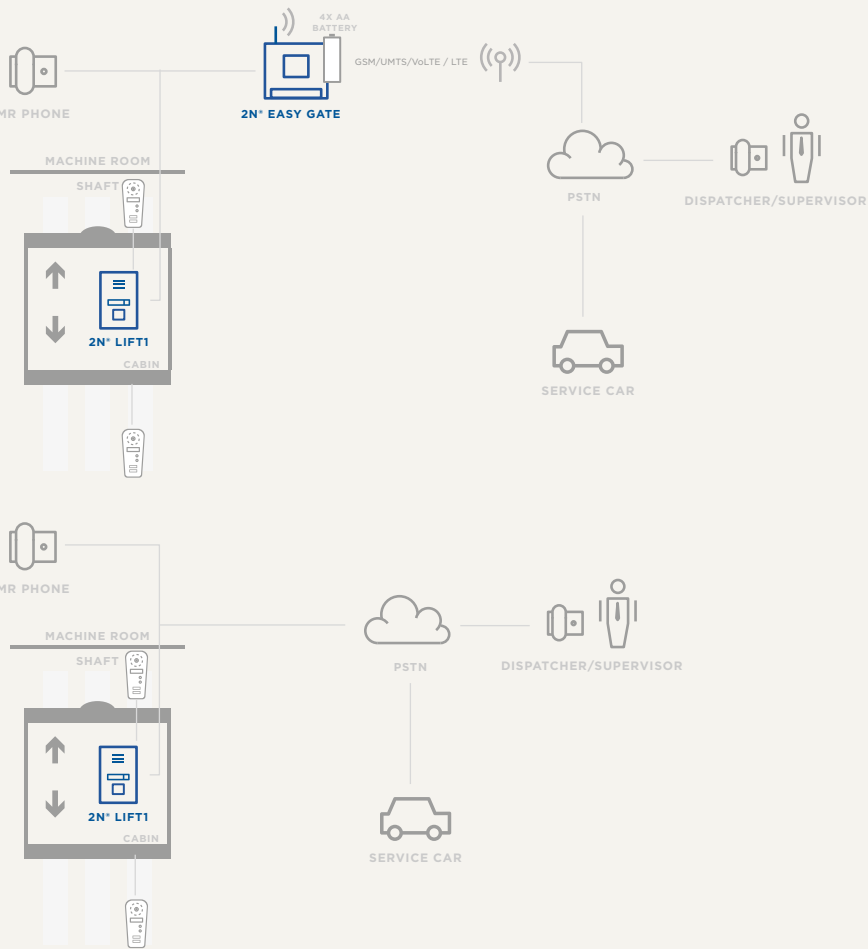
For easy PC programming  
**ord. 919680E**

2N® Lift1 Switch module  
**ord. 913648E**

2N® Lift1 Blocking module  
**ord. 913649E**

2N® Lift1 Ampfier module  
**ord. 913650E**

# Installation



# Technical Specifications

## Electrical parameters

Minimum line current	15 mA, off the hook
Minimum line voltage	22 V, on the hook
DC voltage drop in the off the hook state	< 9 V, I = 20 mA, < 12 V, I = 50 mA
Resistance on the hook	1 MΩ >, U = 25..100 V
Impedance off the hook	220 Ω + 820 Ω paral. 115 nF, 15 to 60 mA
Attenuation	> 14 dB, 15 to 60 mA
Bandwidth	300 to 3500 Hz, 15 to 60 mA
Impedance while ringing	> 2 kΩC = 0.47 μF, 25 to 50 Hz
Ringtone detection sensitivity	10 to 20 V, 25 to 50 Hz
Pulse dialling	40 / 60 ms
Tone-dial levels	-9.0 +2.0/-2.5 dB and -11.0 dB +2.5/-2.0 dB, 15 to 60 mA
Power surge protection - differential between A, B leads	1000 V (8 / 20 μs)

Note Any ringing sequence is acceptable

## Switch parameters

Minimum voltage	9 V AC or DC
Minimum voltage	24 V AC or DC
Maximum current	1 A AC or DC
Resistance - open	min 400 kΩ
Resistance - closed	approx. 0.5 Ω
Fuse	resettable
Connection of external indicator elements	
Power supply voltage	12-24 V DC, external source
Maximum switching current	200 mA
Other parameters	
Dimensions of the Universal implementation	65×130×24 mm
Dimensions of the Compact implementation	100×185×16 mm
Operating temperature range	-20°C - 70°C





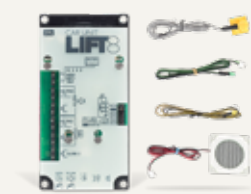
# 2N® LIFT8

A highly modular lift communication system, where the two-wire bus makes the 2N® Lift8 readily installable in any lift context. This means that when it comes to providing for emergency lift communications you won't have to trouble with putting in new cabling. 2N® Lift8 meets all the applicable EU standards.

2 wire bus in shaft including power

Comprehensive, modular, expandable

Wide range of communication interfaces



2N® Lift8  
CABIN UNIT COP

COP version - fixed  
**ord. 918610E**  
COP version - wired  
**ord. 918610XE**



2N® Lift8  
CABIN UNIT  
SURFACE MOUNT

With button  
**ord. 918613E**  
Without button  
**ord. 918613WBE**



2N® Lift8  
CABIN UNIT  
FLUSH MOUNT

With button  
**ord. 918618BE**  
Without button  
**ord. 918618E**



2N® Lift8  
MACHINE ROOM PCB

For MRL elevators  
**ord. 918619E**



2N® Lift8  
MACHINE ROOM UNIT

MR unit + programming  
**ord. 918611E**



2N® Lift8  
SHAFT UNIT

Top, under cabin or pit  
**ord. 918612E**



2N® Lift8  
SHAFT UNIT  
ANTIVANDAL

For heavy duty environment  
**ord. 918617E**



2N® Lift8 SPLITTER

Shaft extender  
**ord. 918620E**



2N® Lift8 I/O MODUL

For easy lift monitoring  
**ord. 918621E**

# 2N® LIFT8



2N® Lift8  
CAMERA MODULE

For visual alarm confirmation  
**ord. 918622E**



2N® Lift8 FIREMAN

For fire fighter elevators  
**ord. 918615E**



2N® Lift8 PICTOGRAM  
CONTROLLER

External pictogram driver  
**ord. 918655E**



2N® Lift8 VOICE ALARM  
STATION SET

For top and under cabin  
**ord. 913662ESET**



2N® Lift8  
CENTRAL UNIT

ord. 918600E

Communication interface

Monitoring interface



2N® Lift8 PSTN

2N® Lift8 GSM/UMTS

2N® Lift8 LTE

2N® Lift8 VOIP

2N® Lift8 RS232

2N® Lift8 IP

ord. 918652E

ord. 918650E  
ord. 918651E

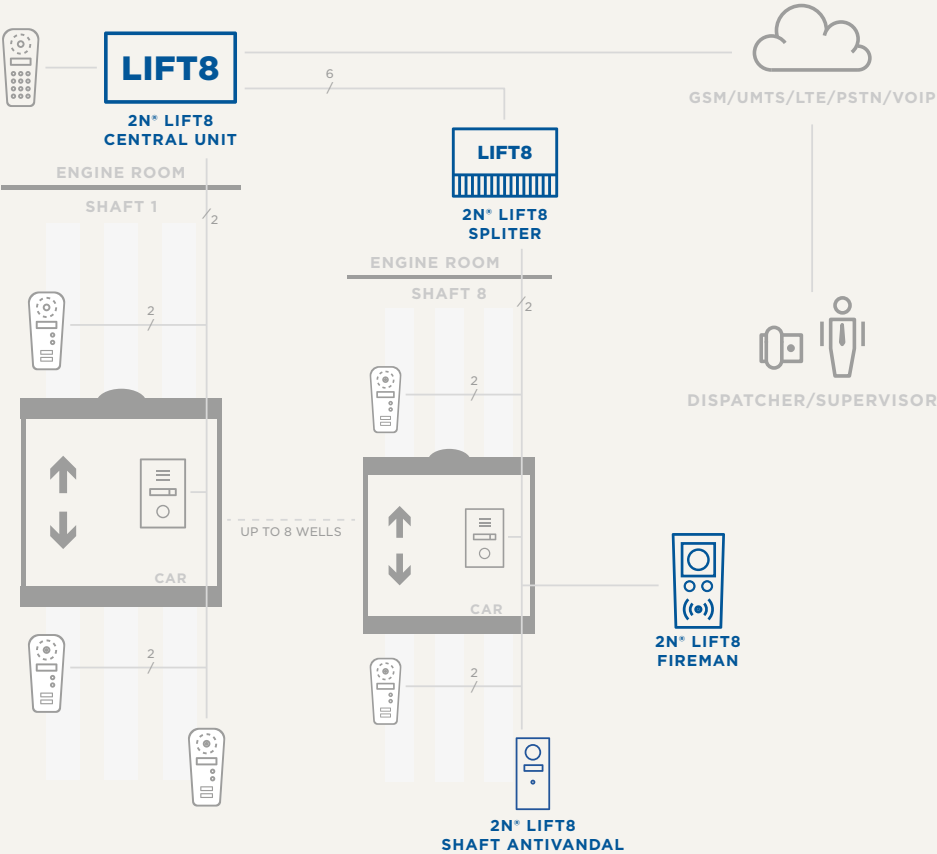
Available 2020

ord. 918653E

ord. 918654E

ord. 918655E

## Installation



## Technical Specifications

### Central unit

Power	100 - 240 V; 50/60 Hz; 0.75 A; 60 W max.
Backup power supply	Built-in lead acid battery
Connection options	4 reporting units + 7 splitters + 8 I/O modules
Maximum distance between the splitters	100 m
Control-room connection interface	Optional PSTN / GSM / UMTS / VoIP
Configuration and monitoring	Voice menu / USB / remote
Status indicators	5× LED, three-colour
Dimensions and weight	300×170×72 mm, 2.7 kg
Splitter	10 to 20 V, 25 to 50 Hz
Power	24 V from a central or local unit
Capacity	4 reporting units + camera module
Maximum total shaft cable length	600 m
Lift blocker output	Relay, NO and NC contacts
Dimensions	142×98×34 mm
Reporting units	9V AC or DC
Link to splitter	2 wires for power, voice and data
Inputs for buttons and signals	ALARM1, ALARM2, CANCEL
LED signalling	Connecting, Connection confirmed
Option to hook up an external microphone, speaker and LED	Yes, on the cabin reporting unit
Numeric keypad, system configuration option	Yes, on the machine room reporting unit
Option to connect an earpiece in noisy circumstances	Yes, in the machine room and shaft reporting units
In-shaft visibility	Yes, backlit buttons
I/O Module	200 mA
Power	24 V from a central or local unit
Capacity	4 inputs + 4 outputs
Inputs	Galvanically isolated, 12 - 24 V AC or DC
Outputs	Relay, contacts Normally-Open (NO), max. 250 V, 5 A
Dimensions	142×98×34 mm





# 2N® EASYGATE PRO

*2N® EasyGate PRO is a full featured land-line replacement. An analogue GSM/UMTS/VoLTE gateway suited for a lift environment. Connect to it any lift emergency communication system, or use it as an instant replacement of fixed lines via mobile (cellular) solution. In addition, the gateway can make a call for transferring data and SMS messages. Also available as dual SIM.*

Land-line replacement

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Trouble-free installation

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Lift monitoring by SMS report



2N® Lift GATEWAY  
GSM

ord. 5013331LE



2N® Lift GATEWAY  
UMTS

ord. 5013381LE

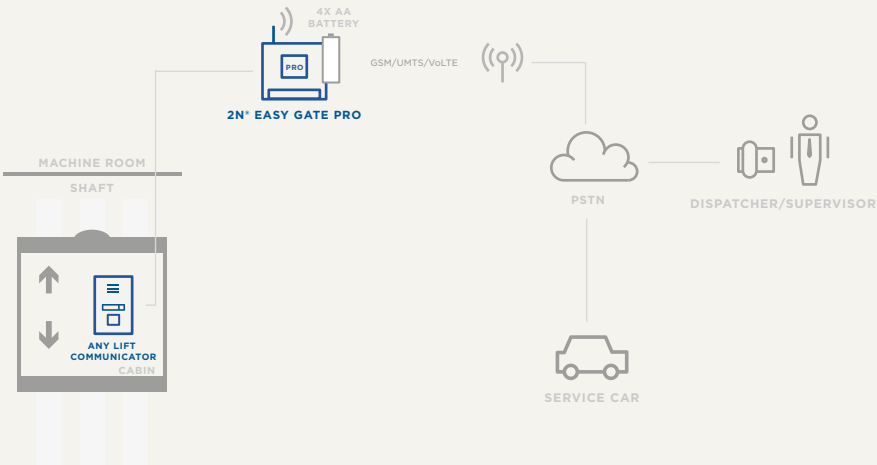


2N® Lift GATEWAY  
VoLTE

ord. 5013391LE



# Installation



# Technical Specifications

## GSM model

GSM networks	850/900/1800/1900 Mhz
GSM modules	Cinterion MC55i-w
Data	CSD (up to 14.4 kbit/s), GPRS Class 10
SIM card	3 V and 1.8 V

## GSM/UMTS model

GSM networks	850/900/1800/1900 Mhz
UMTS networks	900/2100 MHz (EU version), 850/1900 MHz (US version), 850/2100 MHz (Japanese version)
Data	HSDPA 3.6 Mbps, WCDMA, EDGE, GPRS
SIM card	3 V and 1.8 V

## Antenna

Connector type	SMA
Impedance	50 Ohms

## Line interface

Interface type	Two-wire, FXS for phone or external PBX line
Connector type	RJ12, 6/2, or terminal
Supported modes	DTMF and pulse

## Power source

Power unit supplied with the gateway	(12 V/1 A)
Option to connect an external 10 to 16 V DC power source	DTMF and pulse
Backup power using 4×AA batteries	16/12 kHz

## USB Interface

Configuration and upgrade using 2N® PC Manager UNI	200 mA
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## Other

Dimensions	163×157×38 mm
Operating temperature	0°C – 45°C
Operational status signalling	4×LED (on, GSM network, line, data), LED indicator – signal strength/battery status
Operational status signalling	4×LED (on, GSM network, line, data)
LED indicator	signal strength/battery status

# 2N® EASYGATE IP

*New generation of analogue GSM/UMTS/VoLTE/LTE gateway embodies our long term experience in the lift and telecommunication field. It supports SIP protocol to provide reliable transmission of DTMF codes to the dispatching centre. Device management can be done either locally, or via cloud which becomes handy in case of big number of monitored devices. Durable industrial mechanics is suitable for demanding and humid environment. Monitored in-built battery backup fully complies with the latest elevator norms for emergency communication.*

SIP over LTE

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Auto configuration

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Online monitoring



2N® EasyGate  
IP



2N® EasyGate  
IP+

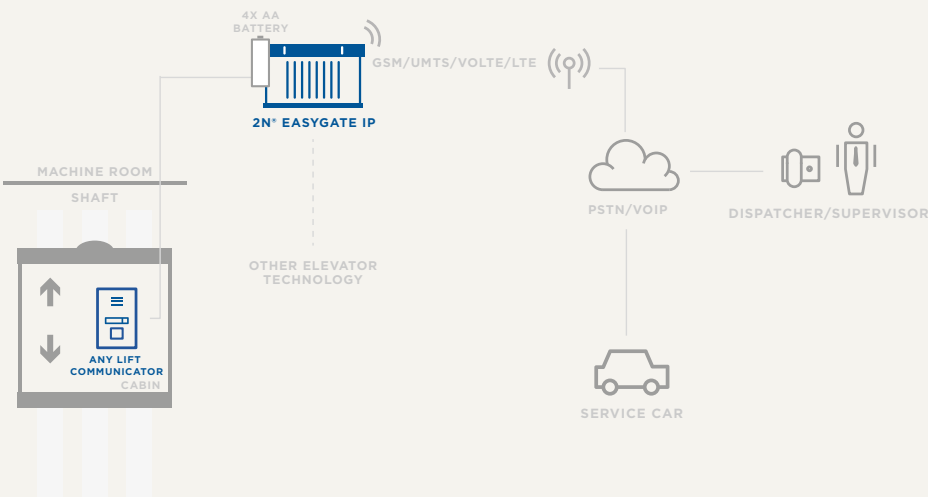
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With Modem  
**ord. 5023101E**  
Without Modem  
**ord. 5023001E**

**ord. 5023301E**

**Avialable in 2021**

# Installation



# Technical Specifications

## Voice

GSM networks  
UMTS networks

LTE networks (EU/NA/AU)

850/900/1800/1900 Mhz  
900/2100 MHz (EU)  
850/1900 MHz (US)  
850/2100 MHz (JPN)  
LTE FDD: B1/B3/B5/B7/B8/B20  
WCDMA: B1/B5/B8  
GSM: B3/B8  
LTE FDD: B2/B4/B12  
WCDMA: B2/B4/B5  
LTE FDD: B1/B2 /B3/B4/B5/B7/B8/B28  
LTE TDD: B40  
WCDMA: B1/B2/B5/B8  
GSM: B2/B3/B5/B8

## Data

LTE

UMTS

GSM

Serial Interface  
SIM cards

## Antenna

Connector type  
Impedance

## Line interface

Interface type  
Connector type  
Supported modes

## Power source

Power unit supplied with the gateway  
Backup power using 4xAA batteries

## USB Interface

Configuration and upgrade

## Other

Dimensions  
IP coverage  
Operating temperature  
Operational status signalling

LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL)  
LTE TDD: Max 8.96Mbps (DL)/Max 3.1Mbps (UL)  
DC-HSDPA: Max 42Mbps (DL)  
HSUPA: Max 5.76Mbps (UL)  
WCDMA: Max 384Kbps (DL)/Max 384Kbps (UL)  
EDGE: Max 296Kbps (DL)/Max 236.8Kbps (UL)  
GPRS: Max 107Kbps (DL)/Max 85.6Kbps (UL)  
RS232  
3 V and 1.8 V  
  
SMA  
50 Ohms  
  
Two-wire, FXS for phone or external PBX line  
Terminal  
DTMF  
  
(12 V/1 A),  
Option to connect an external 10 to 16 V DC power source  
16/12 kHz  
  
Web GUI, or My2N for lifts cloud  
  
195 × 119 × 61 mm  
IP43  
-40°C to +85°C  
4xLED (ON, GSM network, line, data),  
LED indicator – signal strength/battery status

# 2N® LIFTGATE

A LTE router which is designed to provide connectivity to elevator IP devices via 2 wire in travelling cable. This provides cost effective modernization possibility without need to replace travelling cable. It supports SIP protocol and methods of reliable transmission of DTMF codes to the dispatching centre. Device management can be done either locally, or via cloud which becomes handy in case of big number of monitored devices. Monitored in-built battery backup fully complies with the new elevator norms for emergency communication.

Pure IP solution

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2 wires in travelling cable

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Auto configuration



2N® LiftGate

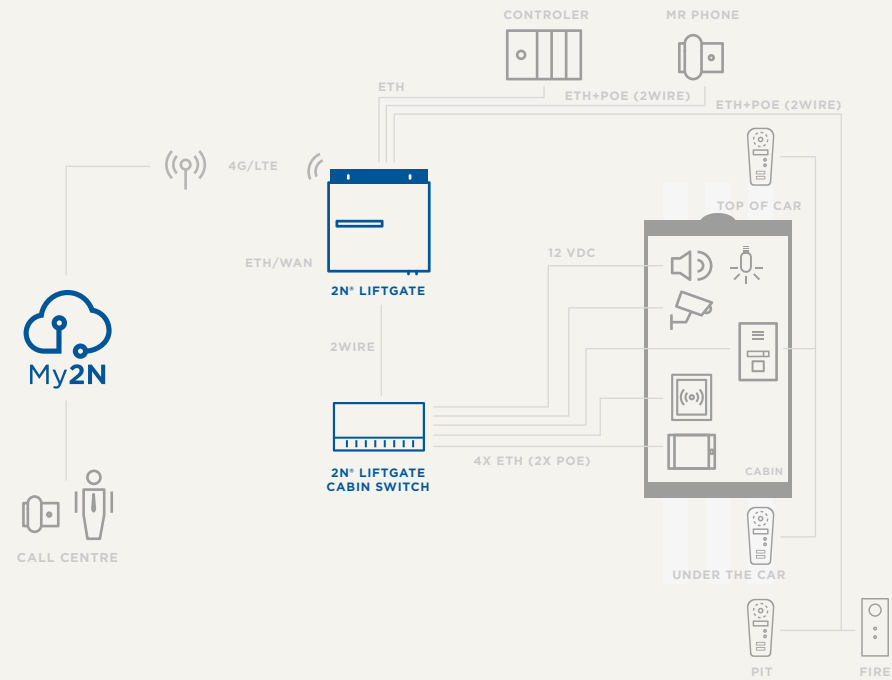
For 1 or 2 shafts  
**ord. 5024101E**



2N® LiftGate Cabin Switch

**ord. 502460E**

# Installation



# Technical Specifications

<b>Data</b>	
LTE	LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL) LTE TDD: Max 8.96Mbps (DL)/Max 3.1Mbps (UL)
UMTS	DC-HSDPA: Max 42Mbps (DL) HSUPA: Max 5.76Mbps (UL) WCDMA: Max 384Kbps (DL)/Max 384Kbps (UL)
GSM	EDGE: Max 296Kbps (DL)/Max 236.8Kbps (UL) GPRS: Max 107Kbps (DL)/Max 85.6Kbps (UL)
WAN	1Gbps
SIM card	3 V and 1.8 V
<b>Router</b>	
Network protocols	PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, HTTPs, DNS, ARP, RIP, OSPF, NTP, SMTP, Telnet, VLAN, SSH2, etc.
<b>LiftGate cabin switch</b>	
Number of ports	4x 10/100 Mbps (2x PoE)
DSL	IEEE B1901
Output voltage	12V
<b>Antenna</b>	
Connector type	SMA
Impedance	50 Ohms
<b>Power source</b>	
Backup power	internal 12 V 9Ah, external battery optionally
<b>USB Interface</b>	
Configuration and upgrade	none Web GUI, or My2N for lifts cloud
<b>Other</b>	
Dimensions	240 × 268 × 72 mm
IP coverage	IP30
Operating temperature	0°C to +45°C
Operational status signalling	8 LEDs (Power, Battery, Cellular, Signal, Internet, Internet backup, DSL line 1, DSL line 2)

# 2N® MY2N FOR LIFTS

*In order to overcome knowledge gap in implementation of IP technologies, we are coming up with My2N cloud which helps elevator companies to install and operate IP devices without special skills and in minimal time. My2N cloud allows to connect and configure audio units and gateways with 1 click installation formula.*

*Monitored elevators are organized in a well-arranged structure, and only authorized administrators and technicians can make changes in device settings.*

*All devices constantly provide operational data like signal strength, battery status, network registration, etc. Error states and outages are reported to system administrators immediately. Possibility to access device remotely reduces maintenance cost and simplifies troubleshooting, implementation of new features or configuration changes.*

*My2N cloud offers several security mechanisms which protect devices against various cyberattacks. Devices can communicate with the cloud service even if they are hidden behind firewall without being exposed to the public internet.*

*Emergency communication system can be easily integrated with any 3rd party system by partner API.*

## KEY CHARACTERISTICS:

- Auto configuration
- Device status monitoring
- Remote management
- VPN
- Reliable DTMF transmission
- Cloud PBX (SIP proxy)
- Partner API for easy integration

Complete device management

Integration with 3rd party systems

Cloud PBX



# TRANSITION TO 4G (LTE) NETWORKS

*Soon, the whole elevator industry will face a technological change due to transition of mobile networks from GSM and UMTS to LTE (4G). As a result, vast majority of installed gateways are going to stop working, so elevators will lose connectivity to call centers with all legal consequences. In reaction to that a 4G gateway will be necessary.*

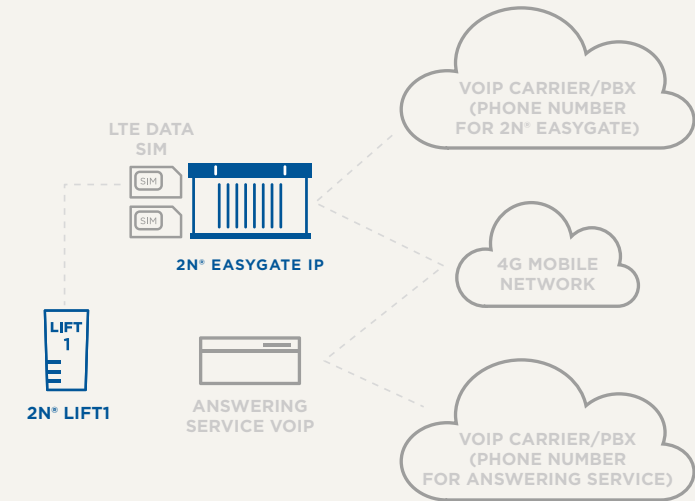
**However replacement with VoLTE gateways has some essential drawbacks:**

- At present no roaming within the networks
- DTMF distortion – this a crucial problem for elevator signalling protocols (CPC, P100)

## IS THERE ANY SOLUTION HOW TO ENSURE RELIABLE TRANSMISSION OF DTMF CODES?

*Yes. The LTE network is used as a data transfer technology through which voice is transferred using the SIP protocol. A SIP client is implemented in the LTE gateway and registered centrally to a VoIP provider, or cloud PBX in My2N cloud.*

*Elevator companies have to take action and begin with replacement process. Ongoing changes are perfect opportunity to approach emergency communication in more professional, effective and modern way.*



# 2N LIFT SOFTWARE

*Call Centre for Lifts is a software solution for the comprehensive management of emergency lift communicators. The software will even allow you to handle alarms and control calls. You get not only a detailed overview of all your calls from the lift, but the option to archive them or export the data e.g. for customer reports preparation.*

Management of control and alarm calls

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No extra hardware required

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Support for CPC and P100 protocols



2N® CALL CENTRE FOR LIFTS

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ord. 918700E



# 2N LIFT SOFTWARE



2N® Lift8 SERVICE TOOL

The 2N® Lift8 Service Tool is software used for local (USB) or remote (IP) configuration of one complete 2N® Lift8 communication system (audio messages, additional modules, splitters and I/O modules).



2N® Lift1 SERVICE TOOL

With the aid of 2N® Lift1 Service Tool software, you will be able to completely set up the 2N® Lift1 communicator. In addition to this, the software application can, apart from configuration, also be used to perform an upgrade and to change the language version.



2N® LiftIP SERVICE TOOL

With the 2N® LiftIP Service Tool, you will be able to fully configure the 2N® LiftIP lift communicator yourself. The tool will also help you update the software or switch between languages for audio announcements played back in the lift cabin or used during configuration.



# LIFT ACCESSORIES



2N® 2Wire – Ethernet 2 wire convertor	9159014E
2N® Emergency button under/or top of the cabin	918690E
2N® Floor annunciator	913305E
2N® External microphone 1 m	913627E
2N® External microphone 3 m	9136273E
2N® External speaker 1 m	913625E
2N® External speaker 3 m	9136253E
2N® External LED's 1 m	913620E
2N® External LED's 3 m	9136203E
2N® High gain antenna 9dB 10 m	22041567
2N® Induction Loop Amplifier with Antenna	919622E



## TÜV SÜD Certified

*All emergency communication products are certified by TÜV SÜD Czech. The TÜV certificates confirm compliance with EN81-28, EN 81-70, EN81-72 and EN81-80.*



## NGN Ready

*The world is switching from analog lines to IP technologies, particularly among fixed-line operators, who are upgrading their original analog lines. Always striving to provide the most reliable services, our 2N® Lift1, 2N® Lift8 and 2N® LiftIP elevator communicators comply with this trend. We tested the 2N® Lift1, 2N® Lift8 a 2N® LiftIP on these new connections in a special Deutsche Telekom laboratory in Bonn.*

# ELEVATOR NORMS

**EN**

**81-28**

*EN 81-28 – Emergency calls. The purpose of this standard is to improve communication in emergency situations in elevators. It eliminates the risk of passengers being entrapped due to malfunctions in elevator installation. This is accomplished by fitting all elevators with an emergency call system, which connects lift cabin with remote emergency service.*

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**EN**

**81-70**

*EN 81-70 – Barrier free elevators. This standard allows people with reduced mobility (pushchairs, wheelchairs, walking aids, etc.) or other disabilities (mental disability, sight and hearing impairment, etc.) to enter elevator cabins easily and operate elevators without limitations.*

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**EN**

**81-72**

*EN 81-72 – Firefighting elevator. The standard deals with the significant hazards, hazardous situations and events relevant to firefighter elevators installed mostly in new buildings. They are primarily intended for use by passengers and thus may be used for firefighting and evacuation purposes under direct control of firefighters.*

**EN**

**81-20**

*EN 81-20 – Requirements for construction. This standard replaces the EN 81-1 standard and specifies the emergency call system requirements in greater detail. Lifts must now be equipped with additional communication units that must be installed with the ALARM system under the EN 81-28 standard to allow a person trapped in the shaft to place an emergency call.*

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**EN**

**81-71**

*EN 81-71 – Vandal resistant elevators. The EN 81-71 standard defines the testing methodology and classification of elevators according to their vandal resistance. Furthermore, this standard provides guidance to building designers, customers, etc., and requirements for design in projects requiring additional security in order to protect against the risk of vandalism.*

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**EN**

**81-80**

*EN 81-80 – Elevator modernization / hazard analysis. EN81-80 SNEL (Safety Norm for Existing Lifts) improves the security of existing passenger and goods passenger elevators. This standard defines rules for improving safety of existing elevators based on risk assessment and categorises various hazards and hazardous situations.*

# 2N TELEKOMUNIKACE a.s.



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