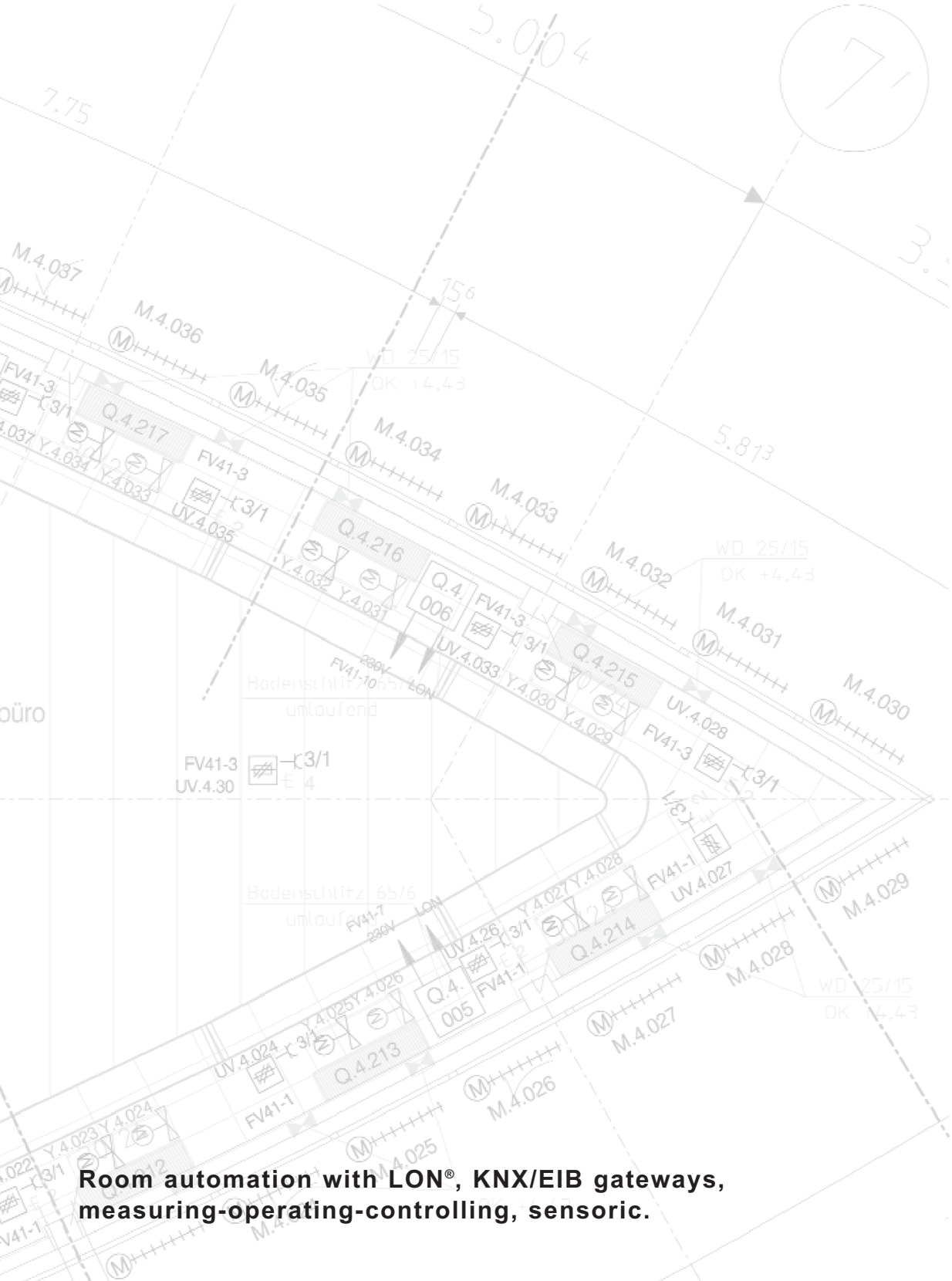
elka elektronik

Catalogue **2008 / 2009**



Room automation with LON®, KNX/EIB gateways, measuring-operating-controlling, sensoric.

ELKA-Elektronik

ELKA-Elektronik GmbH
Talstraße 104
D-58515 Lüdenscheid

Tel. +49 (0) 2351 176-0
Fax.+49 (0) 2351 176-1780

sales@elka.de
www.elka.de

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ELKA – Solutions at work.

ELKA-Elektronik GmbH

With its focus on building automation, ELKA-Elektronik GmbH, founded in 1981, is one of the leading manufacturers of components for the bus systems LON and KNX/EIB.

In addition to individual components, with the LON-based room automation system **e2i** (easy to integrate) ELKA offers a vast range of products for easy integration of modern bus technology into architecture.

Our strength is our know-how and our flexibility which allows us to react to new trends on the market or customer requests quickly.

Part of a strong group

As 100% subsidiary of Insta Elektro GmbH, ELKA is part of the group of companies Berker, Gira and Jung.

Having recourse to the experience as well as the fabrication and development centres of a large group of companies with about 2,500 employees results in many synergy effects. Joint know-how in building automation.

By close cooperation of the companies within the group, the combination of innovative technologies and a high demand on technical quality and aesthetics results in high-quality products.

Quality made in Germany

This is our principle in development and fabrication of our LON components, but also in our flexible and customer-oriented work. As competent partner we will be pleased to answer your technical questions regarding our products and give you advice in the realisation of your projects.

ELKA-Elektronik GmbH
Wefelshohler Straße 35
D-58511 Lüdenscheid
Tel. +49 (0) 2351 176-0
Fax +49 (0) 2351 176-1780
sales@elka.de
www.elka.de

Selling Agency North:
Torsten Wieck
Sales
Project Management
Tel. +49 (0) 2351 176-3470
Fax +49 (0) 2351 176-1780
Mobil +49 (0) 160 96928053
t.wieck@elka.de

Management

Dipl.-Kfm. Steffen Weinreich
Managing Director
Tel. +49 (0) 2351 176-1030
s.weinreich@elka.de

Dr. Herbert Schliffke
Managing Director
Tel. +49 (0) 2351 176-1000
h.schliffke@elka.de

Dipl.-Ing. Hubertus Schulte
Technical Director
Power of Attorney
Tel. +49 (0) 2351 176-4650
h.schulte@elka.de

Heike Militzer
Assistant of the Management
Tel. +49 (0) 2351 176-1790
h.militzer@elka.de

Ulla Hefendehl
Assistant of the Management
Tel. +49 (0) 2351 176-1090
u.hefendehl@elka.de

Corinna Gödde
Secretariat

Tel. +49 (0) 2351 176-4870
c.goedde@elka.de

Marketing und Vertrieb

Axel Beck
Manager Marketing and Sales
Tel. +49 (0) 2351 176-1900
a.beck@elka.de

Martin Schlieck
Customized Development and Fabrication
Tel. +49 (0) 2351 176-1850
m.schlieck@elka.de

Ralf Krolow
Product Management
KNX/EIB, Sensorics
Tel. +49 (0) 2351 176-1890
r.krolow@elka.de

Matthias Gödde
Project Management LON, tendering
Tel. +49 (0) 2351 176-1860
m.goedde@elka.de

Doris Engel
Order Processing

Tel. +49 (0) 2351 176-1870
d.engel@elka.de

Wiebke Hilger
Marketing

Tel. +49 (0) 2351 176-1880
w.hilger@elka.de

Selling Agency South:
Reinhold Kahle
Sales
Project Management
Tel. +49 (0) 2351 176-2460
Fax +49 (0) 2351 176-1780
Mobil +49 (0) 171 7681450
r.kahle@elka.de

ServiceCenter

Jan-Olaf Koschinski
Tel. +49 (0) 2351 176-4440
Fax +49 (0) 2351 176-4900
o.koschinski@elka.de

address for shipment:
ELKA-Elektronik GmbH
ServiceCenter
Hohe Steinert 10
D-58509 Lüdenscheid

ELKA – Solutions at work.

Everything out of one hand – from the infrastructure up to the room operation device

Today, modern buildings are not conceivable without open building automation. To derive the highest possible benefit from a building, architecture and technology must be matched right at the beginning of the planning stage.

For ten years now ELKA has been developing and fabricating components for building automation with LON. Thanks to the modular system and the flexibly useable components, ELKA counts among the leading manufacturers of products for modern building automation with the bus system LON in Europe.

As subsidiary of the manufacturers of installation components and systems Berker, Gira and Jung ELKA also has the possibility of offering the switch designs known from building automation with KNX/EIB as LON components (from page 25).

Public buildings, schools, hotels and, of course, large office buildings are projects that have already been equipped with our LON components.

Design meets functionality – ELKA LON-components in exclusive object

For some years now LON components from ELKA have not only been installed in purpose-built buildings but also in exclusive objects. The perfect combination of functionality and design of the components meets the demands on an exclusive lifestyle.

In addition to the flexibility of the modular system and the room operation devices in the designs of Berker, Gira and Jung often the high safety demand of the owners and the consistency of the solution are decisive for a decision in favour of LON. Day-to-day requirements like control of the lighting or the room climate are realised by the components as well as a reliable structure of the automation system.

Increase amenity at home and reduce energy costs. With LON components of ELKA we offer you a perfectly designed modular system which meets almost every desire with regard to modern room automation.

Projects & References

- Technology & Innovation Center SGL Carbon AG, Germany
- Elsenfeld School Germany
- Central building and depot Recklinghausen, Germany
- ‘O2 World’ Berlin, Germany
- Office building ‘Feldbergstraße’ Frankfurt/Main, Germany
- Publishing House Süddeutschen Zeitung München, Germany
- Hotel ‘Sokos’ St. Petersburg, Russia
- Technical College Haste Osnabrück, Germany
- DEZ Interspar, store Austria
- Office building Rhenus Logistik, Dortmund, Germany
- Senior and Citizens Center Osnabrück, Germany
- Technical College Triesdorf Germany
- Primary School Preungesheim Frankfurt/Main, Germany
- Offices in Beisheim Center Potsdamer Platz, Berlin Germany
- Parliament Düsseldorf, Germany
- ‘Loft 12’ (Inside Hotel) Düsseldorf, Germany

Bank and passion

EuroHypo
Frankfurt am Main

Eurohypo is one of the leading banks for real estate and state financing in Europe. In 2002 it was established by the merger of the mortgage banks of Commerzbank, Deutsche Bank and Dresdner Bank.

With its head office in the Frankfurt district Eschborn, Eurohypo is situated at an imposing site. The company slogan "Bank and passion" is reflected in the striking architecture with a sense for the details of the building.

Planners chose an intelligent control of the room functions with LON components from ELKA and LON room operation devices in the Jung design LS990. Due to the high functionality and the clear and timeless design, the operation panels, push-buttons and sensors perfectly fit into the glass and steel building concept.

The new star in the LON sky

Mercedes-Benz Museum
Stuttgart

The Mercedes-Benz Museum, which was inaugurated in 2006, is not simply one of the biggest automobile museums in the world. It is also an architectural masterpiece. On different circular corridors leading through the building downwards, you can see 175 impressive exhibits. 120 years of company history are brought back to life by private cars, racing cars, record-breaking cars or special-purpose vehicles of the well-known car manufacturer.

Further to the extraordinary architecture of the building, in planning and realisation DaimlerChrysler Immobilien AG gave highest priority to technology and functionality. So this building is equipped with a desmoking system functioning like a whirlwind which was developed specially for this project and many other building functions realised with LON technology.

Energy efficient room automation high-yield investment

The growing awareness of the continuing climatic change and the rising energy costs are important factors for the decision to invest in energy-efficient buildings.

Based on the “Energy performance of buildings directive” (EPBD 2002/91/EG) the energy pass for buildings was introduced. The division in four energy efficiency classes makes the energy consumption of a building transparent for investors and tenants and makes the incurring costs for electric and heating/ cooling energy calculable.

A room automation with LON components from ELKA reduces the energy consumption in daily operation of a building and clearly increases the energy efficiency.

Please note:
Officially, the building automation systems are divided into four energy efficiency classes:
class A = high performance Building Automation and Control System (BACS) and Technical Building Management (TBM)
class B = advanced BACS and TBM
class C = standard BACS (current standard)
class D = non energy efficient BACS; buildings with such systems shall be retroffited. New buildings shall not be built with such systems.

Lighting and electric energy
efficiency factors in building automation
energy consumption %

	D not energy-efficient	C standard	B increased energy-efficiency	A high energy-efficiency
offices	110 %	100 %	93 %	87 %
lecture halls	106 %	100 %	94 %	89 %
schools	107 %	100 %	93 %	86 %
hospitals	105 %	100 %	98 %	96 %
hotels	107 %	100 %	95 %	90 %
restaurants	104 %	100 %	96 %	92 %

Data source: European standard "Energy performance of buildings – Impact of Building Automation, Controls and Building Management" EN 15232, 2007

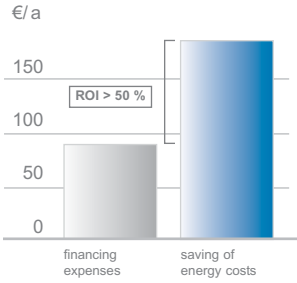
Heating / ventilation / air conditioning
efficiency factors in building automation
energy consumption %

	D not energy-efficient	C standard	B increased energy-efficiency	A high energy-efficiency-
offices	151 %	100 %	80 %	70 %
lecture halls	124 %	100 %	75 %	50 % *
schools	120 %	100 %	88 %	88 %
hospitals	131 %	100 %	91 %	86 %
hotels	131 %	100 %	85 %	68 %
restaurants	123 %	100 %	77 %	68 %

* These values largely depend on the required heating/cooling air for the air conditioning.

Data source: European standard "Energy performance of buildings – Impact of Building Automation, Controls and Building Management" EN 15232, 2007.

Financing expenses / saving of energy costs
return on investment per office
costs per year



This exemplary calculation* shows that the efficiency-optimized room automation system in the office building, despite the higher investment, has a high rate of return.

ROI = Return on Investment / per office

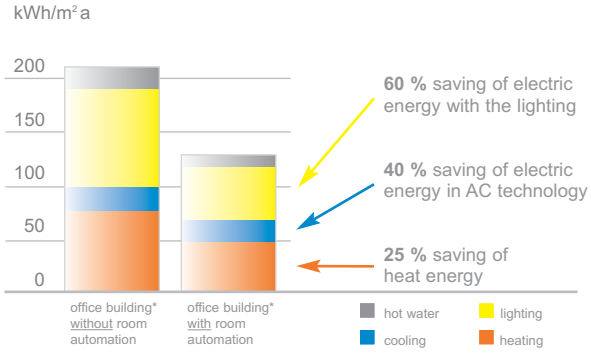
Data source: *Reference building of the LonMark Germany study with energy-optimized room automation. The detailed exemplary calculation can be requested with LonMark Germany (office@lonmark.de).

Energy saving with LON starts in a single room

Room automation reduces the energy consumption combining the functions room climate control, lighting control and sun protection in one open system.

This flexible adaptation to current conditions is the only way to align the energy consumption with the actual utilisation of the room (state of occupation) and the actual behaviour of the user (e.g. open windows) and to avoid a waste of energy.

Primary energy requirement of a building
with and without building automation



60% saving of lighting energy

- Integration of a sun protection with sun tracking control.
- constant light control
- Presence detection with automatic switch-off of the lighting in unoccupied rooms.

25% saving of heat energy
45% saving of heating energy

- Time and presence-depending adaptation of the setpoint values of the control.
- Switch-off of the energy supply when the windows are opened.
- Support of the heating or cooling process by the sun protection.

Data source: * Reference building of the "Study with energy-optimized room automation" of LonMark Germany. The detailed exemplary calculation can be requested with LonMark Germany (office@lonmark.de).

Functions for saving of lighting energy
with building automation

function *	saving **	positively influencing factors
constant light control (presence-depending, dimmed)	**35 – 50 %**	• good daylight irradiation • high illumination • particularly efficient with sun tracking control
automatic light (switched depending on presence or brightness)	**25 – 45 %**	• good daylight irradiation und high illumination
sun automatic	**5 – 8 %**	• good daylight irradiation
sun tracking control	**10 – 13 %**	• goog daylight irradiation • particularly efficient with constant light control
automatic or staircase light	depending on the project	• rare presence (e. g. in corridors)

Functions for saving of lighting energy:
* see LonMark room automation functions
** Saving potential compared to reference building according to DIN V 18599 or EN 15232.

Data source: * Reference building of the "Study with energy-optimized room automation" of LonMark Germany. The detailed exemplary calculation can be requested with LonMark Germany (office@lonmark.de).

Functions for saving of heating and cooling energy
with building automation

function *	saving **	positively influencing factors
timer programme for operation modes	**5 – 10 %**	• long operation time for the heating
presence change-over	**5 – 10 %**	• longer absence during operation time of the heating
window monitoring	**5 – 10 %**	• smaller buildings
thermo-automatic ot the sun protection	**10 – 13 %**	• good daylight irradiation • outdoor sun protection
free night cooling	depending on the project	• circulation ot the air from outside must be provided
summer compensation	depending on the project	• possible for all cooling systems
load optimization	depending on the project	• for all heating and cooling systems

Functions for saving of heating / cooling energy:
* see LonMark room automation functions
** Saving potential compared to reference building according to DIN V 18599 or EN 15232.

Data source: * Reference building of the "Study with energy-optimized room automation" of LonMark Germany. The detailed exemplary calculation can be requested with LonMark Germany (office@lonmark.de).

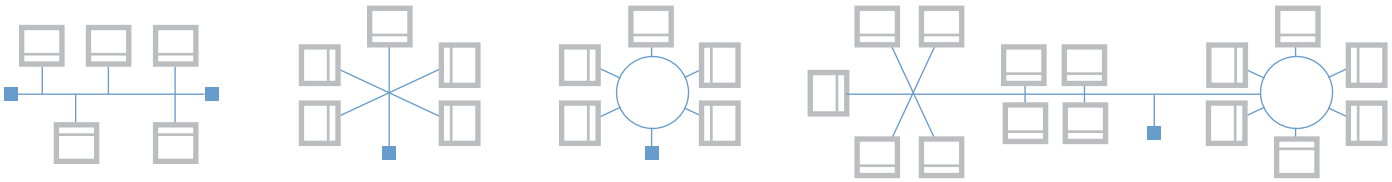
LON

LON (Local Operating Network) is an universally employable and decentral network for automation in buildings, in industry, in traffic, in telecommunications and in many other fields.

Intelligent sensors, actuators and operation devices can flexibly be connected with each other.
As transmission medium serves twisted pair, 230 V-power line, radio frequency or IP. They communicate with each other from any point to any point. Changes, extensions and maintenance are possible at any time and also during operation.

Due to powerful tools and numerous components and products both small and complex automation tasks cannot only be solved fast, but also economically.

As member of the LonMark Germany we support LON as open and interoperable technology by which all systems in one building can be connected. This is the basis for a room automation with a guaranteed future and thus for the economic operation of real estate.



bus topologies: line (bus), star, ring, free topology

Network infrastructure is the backbone of building automation

LON offers optimal possibilities to create a structured automation network for a building, as products and solutions on LON basis are available for nearly every application within buildings. Thus, building automation can be realised with only *one* bus system and cost- and maintenance-intensive gateways need not be used.

transmission media

As transmission media serve twisted pair, 230 V power line or fibre optic cable, but also the Ethernet. Therefore, LON-based automation solutions can very easily be integrated in company internal intranet- or world-wide internet solutions.

structure

For structuring, so-called routers are available which on the one side filter information and on the other side serve to adapt different physical transmission media to two LON channels.
A LON network can then be divided into several sub-nets (lines) and data traffic as well as cabling can be structured.

topologies

The ring topology must especially be emphasised. It allows constructing particularly save data transmission, because an interruption at one point does not override the communication in general.

participants

A LON network consists of up to 32.385 bus components (nodes) which communicate with each other by means of a standardised protocol (CEA-709 / CEA-852 / EN 14908). Each LON node ex works disposes of a one-to-one, 48-bit wide physical address by which it can directly be addressed.

T	terminator
	router
	LON nodes e. g. LON controller with e2i interface, push-button sensor or room operation panel
TP	twisted-pair lead
GLT	building system control
domain	32.853 nodes per domain max. 248 domains per network (e. g. connected vie Ethernet)
subnet	255 subnets (lines per network)
LON node	127 LON nodes per subnet (line)

transceiver	medium	transmission	topology	nodes	net dimension
FTT	Twisted Pair	78 kbit/s	free line	64 64	500 m 2.700 m
LPT	Twisted Pair	78 kbit/s	free line	127 127	500 m 2.220 m
TPT/XF-78	Twisted Pair	78 kbit/s	line	64	1.400 m
TPT/XF-1250	Twisted Pair	1,2 Mbit/s	line	64	130 m

transmission speed

Based upon a twisted-pair cable, data transmission speeds of up to 1,25 Mbit/s can be achieved. Employing an Ethernet-connection as quick backbone, transmission speed can be multiplied several times.

safety

Opposite to other bus systems common in Europe, an end-to-end control which is implemented in the protocol guarantees a save data-transmission. For safety-relevant applications, an authentic data transmission is as well possible as a prioritised transmission of urgent information.

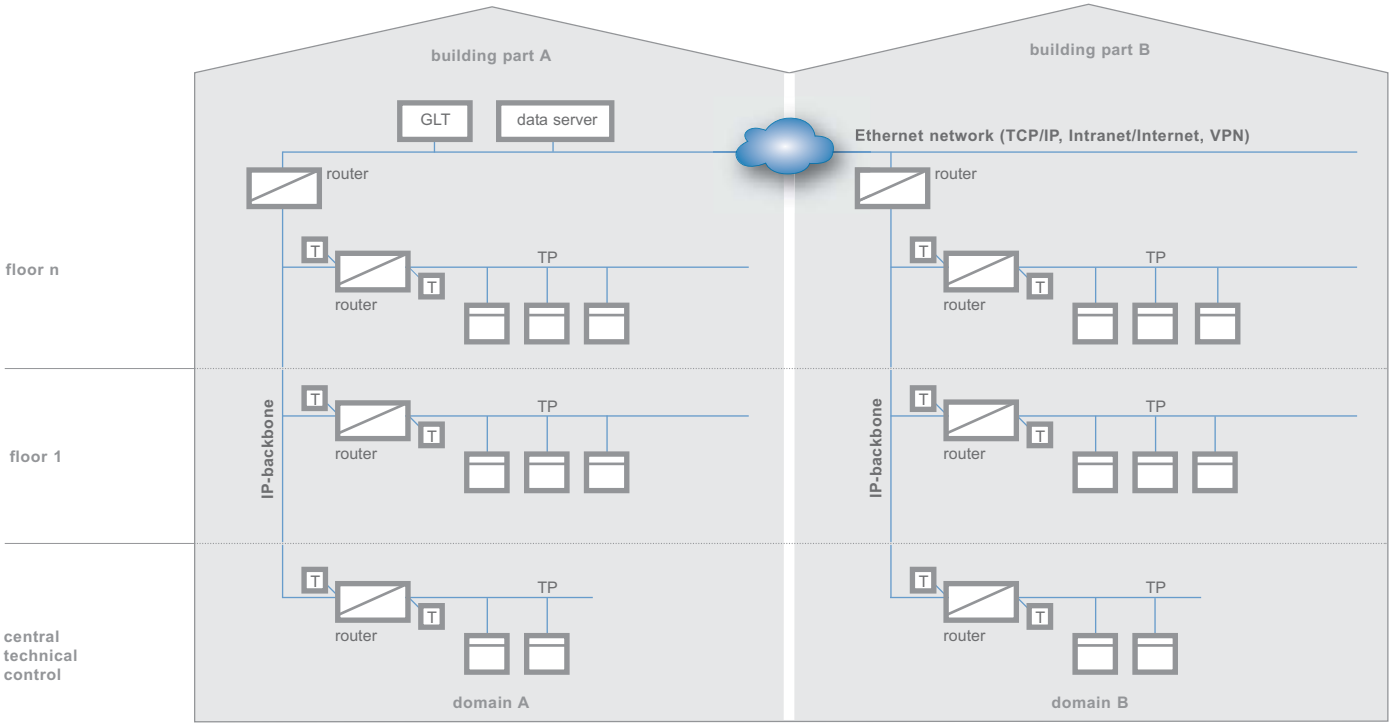
system integration

Planning and integration of a LON system is realised by means of standardised, open tools whereas the tools' surface can be adjusted to the corresponding user group. The most important characteristic of these tools is using a uniform LNS-database and supporting LNS-PlugIns. These PlugIns are the reproduction of device-specific parameters and allow a comfortable adjustment to the corresponding project. The result of system integration is saved within the LNS-database. It is the basis for that the data can be kept up with a different tool, independent from the fact with which open tool the system integration was realised.

Moreover, due to its client-server-architecture the database also enables that several employees can work on one project at the same time. Therefore, e.g. different installations can work at the same time or different floors can simultaneously be commissioned.

Standardised data types (standard network variable types – SNVT) and functional profiles defined by the LON guarantee a high degree of interoperability.

Example of a network hierarchy on LON and IP basis in a building.



LP1300 RL | **Art.-No. 130 01 022** | new

LPT power supply

Provides the supply voltage for LON components with LPT transceiver.

Proof against short-circuit, overload and idle running. Selectable bus termination (110 Ω, 55 Ω, no termination).

Bus supply can be switched-off via push-button.

Technical data
- supply voltage: 85…264 V AC
- rated frequency: 47…63 Hz
- hold-up time: > 20 ms
- output current
  supply 85…195 V: 1 A
  supply > 195 V: 1,3 A
- short-circuit proof / overload protection
- protection type: IP 20
- assembly width: 8 TE (approx. 144 mm)
- mounting position: horizontal

Available: June 2008.

LP1500 RL | **Art.-No. 130 01 020**
discontinued line

Link-power supply

Provides the supply voltage for LON components with LPT transceiver.

Depending on the energy consumption of the individual nodes, the topology, the cables used and the cable length up to 64 nodes can be connected with LPT transceivers.

At the output side, the device is short-circuit-proof and overload-proof. A reversible terminating resistance for line structure or networks in free topology is integrated. Via the mains switch the power supply can be switched off on the primary side.

The primary protection is effected by a miniature fuse (2 AT, 250 V).

Technical data
- supply voltage: 230 V AC ± 10 %
- output current: 1,5 A
- short-circuit proof / overload protection
- Switchable terminating resistor for free or line topology.
- protection type: IP 20
- assembly width: 12 TE (approx. 215 mm)

LP/RT 1500 RLL | **Art.-No. 130 01 021** | **FTT**
discontinued line

Link-power supply with router

Provides the supply voltage for LON components with LPT transceiver.

Depending on the energy consumption of the individual nodes, the topology, the cables used and the cable length up to 64 nodes can be connected with LPT transceivers.

At the output side, the device is short-circuit-proof and overload-proof. A reversible terminating resistance for line structure or networks in free topology is integrated. Via the mains switch the power supply can be switched off on the primary side.

The primary protection is effected by a miniature fuse (2 AT, 250 V).

Technical data
- supply voltage: 230 V AC ± 10 %
- output current: 1,5 A
- short-circuit proof / overload protection
- Switchable terminating resistor for free or line topology.
- protection type: IP 20
- assembly width: 12 TE (approx. 215 mm)
- 2 TP/FT-10 transceivers
- operation mode: Repeater, configurable and self-learning router.

LT-13
LT-33

Art.-No. see below

TP/XF-1250 / FT-10

Terminator

LON Terminator with 2 network terminators. To terminate one channel of a TP/XF-1250 segment (bus topology) and one channel of a TP/FT-10 segment (bus topology / free topology) or to terminate two TP/FT-10 segments in bus- or free topology.

Technical data

- protection type: IP 20
- assembly width: 1 TE (approx. 17 mm)
- mounting: DIN-rail DIN EN 50022

available types	type	configuration	Article number
Terminator TP/XF1250 - TP/FT-10	LT-13	TP/XF: Bus topology TP/FT: Bus- or free topology (also LPT-channels)	130 01 080
Terminator 2 x TP/FT-10	LT-33	TP/FT: Bus- or free topology (also LPT-channels)	130 01 081

LS-...CB

Art.-No. see below

TP/XF 1250 / TP/FT-10

Router type L-Switch

For physical separation and logical connection of TP/FT-10 segments in LON-networks.

Supports the operation mode ‘configured router’ and plug and play by intelligent learning of the routers on subnet/node- and group level.

Can also be used as active repeater.

Integrated network diagnostic functions. LED show the network activity, network overload and network error conditions. Detailed channel statistics (channel load, CRC-error, forwarding statistics etc.) can be called-up from the network by means of the LSD-tool.

Supports firmware updates and the configuration via each network interface. With service button, status display and integrated operating temperature- and voltage monitoring.

Technical data

- supply voltage: 9...24 V AC; 9...35 V DC
- power consumption: 3 W (max. 7 W)
- protection type: IP 20
- telegram length: up to 256 bytes
- supported domains: up to 4 in Smart Switch Mode
- messages / s: up to 3500
- bit rate: 300 bps…2,5 Mbps
- assembly width:
  2-Port 6 TE (approx. 105 mm)
  Multiport 9 TE (approx. 157 mm)
- mounting: DIN-rail DIN EN 50022

available types	type	configuration	Article number
2-port router 2 x TP/FT-10	LS-33CB	Port 1 + 2: TP/FT-10	130 01 030
2-port router TP/XF-1250 / TP/FT-10	LS-13CB	Port 1: TP/XF 1250 Port 2: TP/FT-10	130 01 031
3-port router 3 x TP/FT-10	LS-33300CB	Port 1 - 3: TP/FT-10	130 01 032
3-port router TP/XF-1250 / 2 x TP/FT-10	LS-13300CB	Port 1: TP/XF 1250 Port 2 + 3: TP/FT-10	130 01 033
5-port router TP/XF-1250 / 4 x TP/FT-10	LS-13333CB	Port 1: TP/XF 1250 Port 2 - 5: TP/FT-10	130 01 034

LIP-...ECTB	Art.-No. see below	IP / TP/XF-1250 / TP/FT-10		new

IP router

LON IP router with integrated CEA-852 configuration server for transparent connection of TP/FT-10 segments to the IP network.
The LON IP router can be used as:

1. Router between Ethernet and LON networks for communication between several LON networks via Intra-/Internet (TCP/IP)
2. Interface between IP and LON networks for the access of PC applications on the LON network via Intra-/Internet (TCP/IP) and for visualization, control and configuration of LON networks via Ethernet (TCP/IP).
3. For visualisation, control and configuration of LON networks via Ethernet (TCP / IP).

The device can be used as configurable router, self-learning switch (Plug and Play) or as repeater. Supports Auto-NAT in case of varying public IP addresses and DHCP. IP packets can additionally be authenticated with MD5-check sum and time stamp.

The configuration and servicing can either be carried out via a RS232 interface (9-pole) or via the integrated web server. A firmware update can be realized via a serial interface, the Ethernet or the TP/FT-10 network.

The product disposes of integrated LED for network diagnostics to show the status of the TP/FT-10 network, the Ethernet connection and the IP-852 channel. For remote maintenance via Intranet/Internet/VPN the LON IP router supports the remote LPA function.
The LON IP router disposes of a real time clock with SNTP and integrated operating temperature and voltage monitoring.

Technical data

- suppy voltage: 12...24 V AC; 12...35 V DC
- power consumption: 3 W (max. 7 W)
- connection Ethernet: RJ-45 plug
- protection type: IP 20
- assembly width: 6 TE (approx. 105 mm)
  LIP-3333ECTB 9 TE (approx. 157 mm)
- mounting: DIN-rail DIN EN 50022

available types	type	configuration	Article number
1-port router Ethernet / TP/FT-10	LIP-3ECTB	Port 1: Ethernet Port 2: TP/FT-10	130 01 036
2-port router Ethernet / 2 x TP/FT-10	LIP-33ECTB	Port 1: Ethernet Port 2: 2 x FT-10	130 01 037
1-port router Ethernet / TP/XF-1250	LIP-1ECTB	Port 1: Ethernet Port 2: TP/XF-1250	130 01 038
4-port router Ethernet / 4 x TP/FT-10	LIP-3333ECTB	Port 1: Ethernet Port 2…5: TP/FT-10	130 01 040 new

LIP-33ECRB	Art.-No. 130 01 039	IP / TP/FT-10	

IP router redundant

Perfect solution for networks where high communication reliability is required.

It is a member of the LIP-family, based on the standard LIP routers and provide additional functionality, which allows building a redundant network infrastructure. This router can be used as a single device to achieve redundancy on the CEA-709 (TP/FT10) channel by building a ring structure.

If IT-network redundancy is available, full redundancy on the IP channel and on the CEA-852 channel can be achieved with two devices installed in parallel. In this case device redundancy is ensured as well by mutual monitoring of paired LIP-ECRB.

In addition the LIP-33ECRB (CEA-709/ IP router) monitors the nodes connected to the TP/FT-10 channel and creates an alarm if a node fails. An integrated broken cable detection algorithm helps to locate the point of failure immediately. The LIP-Router LIP-ECRB routes ANSI/CEA-709 packets back and forth through an arbitrary IP-based network, such as a LAN, an Intranet, or even the internet.

Please note:
The LIP-33ECRB only supports the configured router mode.

Technical data

• supply voltage:	12...24 V AC; 12...35 V DC
• power consumption:	3 W (max. 7 W)
• connection Ethernet:	RJ-45 plug
• protection type:	IP 20
• assembly width:	6 TE (approx. 105 mm)
• mounting:	DIN-rail DIN EN 50022

LINX-10x	Art.-No. see below	TP/XF-1250 / FT-10		new

OPC server with router functionality
Type LINX-100

The OPC server provides access to up to 1000 data points in the LON network. The device supports the XML/DA standard and allows access to a defined set of CEA-709 network variables (SNVTs, UNVTs) via OPC web-services / .NET or customized web pages with active content. With JavaScript or Java applets the L-OPC can also display active content on its Web pages.

In addition to the Web services interface the OPC server combines the OPC server with a fully functional CEA-709/IP router.
This ensures at the same time direct access to the CEA-709 network through an CEA-852 IP channel for network management tools for setting up the local network. The remote LPA back-end enhances the functionality with superior network trouble-shooting capability using the LPA remotely.
It makes device statistic and monitoring data available as OPC data points. Supports bindings between the L-OPC and the connected nodes in addition to Polling. Bindings can be automatically generated by the configuration tool and result in less traffic overhead on the TP/FT-10 channel. This event-driven method results in shorter reaction times compared to the polling method.

Additional supported functions:
Trending, Scheduling and Alarming.

Technical data

- supply voltage: 12...24 V AC; 12...35 V DC
- power consumption: 3 W (max. 7 W)
- connection Ethernet: RJ-45 plug
- protection type: IP 20
- assembly width: 6 TE (approx. 105 mm)
- mounting: DIN-rail DIN EN 50022

OPC server with intergrated remote network interface type LINX-101

Functionality like type LINX-101, but instead of the function of an IP router it is equipped with a Remote Network Interface.

For secured data transfer MD5-authentification is supported. Protokol-analysing is possible with LPA-IP software (order separately).

Additional supported functions:
trending, scheduling and alarming.

available types	type	Article number
OPC server with router functionality	LINX-100	130 01 051
OPC server with intergrated remote network interface (available: June 2008)	LINX-101	130 01 054

LP-33E100	Art.-No. 130 01 052	TP/XF-1250 / FT-10		new

Gateway type L-Proxy

The L-Proxy is a high performance network infrastructure component for CEA-709 networks that allows network variable bindings across multiple domains, SNVT translation, address table expansion for CEA-709 nodes, firewall security etc. The L-Proxy provides five communication ports and it translates packets between these ports.

Available ports are two FT ports, and three IP-852 ports. The three IP-852 ports are connecting to an IP-852 backbone channel.

The L-Proxy´s unique architecture very much supports well defined interfaces between various subsystems like HVAC, lighting, and security in a typical building.

The L-Proxy is used for:
- binding of network variables across multiple domains (up to 5 with a single device)
- using static, dynamic, or external (polled) network variables
- save group addresses by breaking up groups into individual NV updates
- translation between different SNVT types
- firewall for CEA-709 networks
- supports up to 512 on each port
- supports at a time up to 512 network variables, alias-network variables, and address table entries on each port

Technical data

• port 1:	TP/XF-1250
• port 2-5:	TP/FT-10
• per port:	
number of domains:	1
network variables:	max. 512 per node
alias entries:	max. 512 per node
adress tabel entries:	max. 512 per node
supply voltage:	12...24 V AC; 12...35 V DC
• power consumption:	3 W (max. 7 W)
• protection type:	IP 20
• assembly width:	6 TE (approx. 105 mm)
• mounting:	DIN-rail DIN EN 50022

LGATE-900	Art.-No. 130 01 053	IP / BACnet		new

Gateway between LON (CEA-709, CEA-852) and BACnet

The L-GATE is an CEA-709/BACnet gateway which maps CEA-709 network variables (NVs) to standard BACnet server objects.

Which NVs are mapped to BACnet objects can be configured with an LNS plug-in or stand-alone gateway configuration utility. The NVs can be bound in the CEA-709 network or operated as “external data points” (polled), which are supplied with address information by a configuration tool.

The following combinations are possible:
LON over IP an Ethernet port / BACnet via Ethernet port
- LON over TP/FT-10 / BACnet via Ethernet port
- LON over IP an Ethernet port / BACnet via MS/TP
- LON over TP/FT-10 / BACnet via MS/TP

Please note:
It is not allowed to use two ports for Gateway function at the same time.

NVs are mapped to binary,analog, or multi-state objects (input, output, value) according to CEN/TS 15231:2005. All BACnet properties are automatically assigned with default values from the SNVT self-description. Scalar NVs are mapped to one BACnet object. Structured NVs are mapped to several BACnet object, one for each member (members can be selected individually).

Each L-GATE can handle up to 750 BACnet Objects. Several devices can be installed in a network at the same time. The created BACnet server objects are accessible from the BACnet network. In addition, the L-GATE also includes client functions. For each server object a “client mapping”can be defined. These mappings specify another BACnet object on the network where the L-GATE shall read data from or write data to.

L-GATE supports basic management functions such as scheduling, alarming, and trending via corresponding BACnet objects. The user can create trendlogs, schedule and notification objects,which refer to any of the mapped BACnet objects. This allows the L-GATE to provide trending data of one or more NVs, schedule NVs and create alarms based on NV conditions directly in BACnet.

The L-GATE also provides a number of network statistics data points,which are available as NVs on the device and can be accessed through BACnet objects as well.

Technical data

• supply voltage:	12...24 V AC; 12...35 V DC
• power consumption:	3 W (max. 7 W)
• port 1:	Ethernet
• port 2:	TP/FT-10
• port 3:	MS/TP
• BACnet objects:	750
• protection type:	IP 20
• assembly width:	6 TE (approx. 105 mm)
• mounting:	DIN-rail DIN EN 50022

NIC709-PCI	Art.-No. 130 01 090	TP/XF-1250 / TP/FT-10	

PCI network interface

PC-interface (32-Bit PCI, half length) as interface between PC and LON networks with 3 integrated transceivers TP/FT-10, TP/XF-1250 and RS485.

Supports the LNS/VNI functionality to operate LNS-compatible tools as well as the access to the network of LON Manager API-based software (MIP) and of applications based on the ORION API.

It is possible to operate up to 8 applications (LNS/VNI, MIP or ORION API) on the same network interface at the same time.

The device supports the use of protocol analysis and system diagnostics software.

Technical data

• software (Windows):	2000, XP, Vista Linux 2.4
• supply voltage:	via PCI bus (< 250 mA)
• dimensions:	135 x 96 x 20 mm

NIC709-USB	Art.-No. 130 01 091	TP/XF-1250 / TP/FT-10	

USB network interface

PC-interface card (USB 1.1) as interface between PC- and LON networks with 3 integrated transceivers TP/FT-10, TP/XF-1250 and RS485.

Supports the LNS/VNI functionality to operate LNS-compatible tools as well as the access to the network of LON Manager API based software (MIP) and of applications based on the ORION API.

It is possible to operate up to 8 applications (LNS/VNI, MIP or ORION API) on the same network interface at the same time.

The device supports the use of protocol analysis and system diagnostics software.

Technical data

• software (Windows):	2000, XP, Vista
• supply voltage:	5 V via USB port (< 130 mA)
• dimensions:	23 x 69 x 116 mm

NIC852 / NIC709-IP	Art.-No. see below	IP / TP/XF-1250 / TP/FT-10	

IP network interface

Interface between PC- and LON networks with integrated TP/FT-10 or TP/XF-1250 transceiver (depending on the type).

LNS/VNI-compatible to operate LNS3-based tools. Supports the remote network interface function to connect a PC with the network interface via the intranet and the internet, also via NAT firewalls.

It is possible to operate up to 8 applications (LNS/VNI, MIP or ORION API) on the same network interface at the same time.

The device supports the use of protocol analysis and system diagnostics software.

Technical data

NIC709-IPxE100
- software (Windows): 2000, XP, Vista
- Ethernet port: 10 Base-T
- supply voltage: 12…24 V AC, 12…35 V AC
- assembly width: 6 TE (approx. 105 mm)
- mounting: DIN-rail DIN EN 50022

NIC852
- software (Windows): 2000, XP
- USB port: full speed USB 1.1
- supply voltage: via USB port

available types	types	Article number
LAN interface TP/FT-10	NIC709-IP3E100	130 01 092
LAN interface TP/XF-1250	NIC709-IP1E100	130 01 093
LAN interface IP-852	NIC852	130 01 094

LPA-IP	Art.-No. 130 01 095			PlugIn

Packaging unit consists of:
- Protocol analyzer software LPA-IP SW for CEA-852
- Network Interface adapter NIC852

Ptotocol analyzer software for IP-852 Ethernet channel

- For analysis of data traffic in IP-852 Ethernet channel in LON networks and for the integration of SNVTs (standard network variables) as well as network management and network diagnostics messages.
- Additional remote-recording of LON channels (CEA-709) via router.
- Long-term packet recording capability with high-resolution time stamp for each packet.
- Storing and exporting packet logs (e. g. to Excel spread sheets).
- Conversion of network addresses and variables into symbolic names.
- LNS database interpretation.

Technical data

• software (Windows):	98, ME, 2000, XP Vista
• USB port:	Full speed USB 1.1
• supply voltage:	via USB port

LPA-SET-USB	Art.-No. 130 01 096	LPT		PlugIn

Packaging unit consists of:
- Protocol analyzer software LPA-IP-SW for CEA-852
- Network Interface adapter NIC852
- Protocol analyzer software LPA-SW
- Network Interface adapter NIC709-USB

Protocol analyzer software for IP-852 Ethernet channel

- For analysis of data traffic in IP-852-Ethernet channel in LON networks and for the integration of SNVTs (standard network variables) as well as network management and network diagnostics-messages.
- Additional remote-recording of LON channels (CEA-709) via router.
- Long-term packet recording capability with high-resolution time stamp for each packet
- Storing and exporting packet logs (e. g. to Excel spread sheets).
- Conversion of network addresses and variables into symbolic names.
- LNS database interpretation.

Technical data
Please see single products.

LSD-SW | **Art.-No. 130 01 990**

System diagnostics tool

- Software for online-monitoring of channel load and defective packets on all channels.
- Display of statistic data.
- Diagnostics of the complete network is possible via L-Switch and IP-Router.
- Comfortable user interface to access information regarding network statistics which is saved in the L-Switch and the L-IP.
- Remote configuration, firmware update of L-Switch/L-IP/L-Proxy devices via the network and access to extended features.
- A network interface of the type NIC709 or NIC852 is necessary to access the LON network and for registration.

Technical data

- software (Windows): 98, NT, ME, 2000, XP, Vista

LPA-SW | **Art.-No. 130 01 991**

Protocol analyzer software for TP/XF-1250 and TP/FT-10 channels

- Software to analyze the data traffic in TP/XF-1250 and TP/FT-10 channels and to interpret SNVTs (standard network variable types) as well as network management- and network diagnostics messages.
- Long-run recording is possible with a high-precision time stamp for each packet.
- Data or export is saved in log-files.
- Due to the calibration with a LNS database it is possible to replace the packet addresses with the corresponding name- and network variable names.
- A network interface of the type NIC709 or NIC852 is necessary to access the LON-network and for registration.

Technical data

- software (Windows): 98, NT, ME, 2000, XP Vista

LVIS-3E100	Art.-No. 130 01 130	IP / TP/FT-10	

Operating unit L-VIS

Operating unit for LON networks with anodized aluminum surface and touch display. High-resolution LC-display (320 x 240, 256 colors) with backlight.

Control and visualization arbitrary data points (max. 512). The device comes with an input for an external temperature sensor and an external switch. Individual network variables can easily be created dynamically with LNS3.x based tools. Simple graphical programming with LNS-PlugIn.

WYSIWIG preview function. The LC-touch display displays numbers, text, symbols, graphics, trend logs and many other items in a clear way. Access control with Pin code. L-VIS can be connected to a TP/FT-10 or IP-852 Ethernet channel. The unit is fully compatible with the CEA-709 and CEA-852 standard.

Technical data

• supply voltage:	9...24 V AC; 9...35 V DC
• power consumption:	3 W (max. 7 W)
• connection Ethernet:	RJ-45 plug
LON, supply:	0,5...2,5 mm²
• display:	320 x 240 dots, 256 colours, backlight
• protection type:	IP 20
• dimensions:	210 x 165 x 60 mm
• cut-out dimensions:	180 x 150 mm
• mounting:	flush mounting, hollow wall or in cabinet doors with included frame.

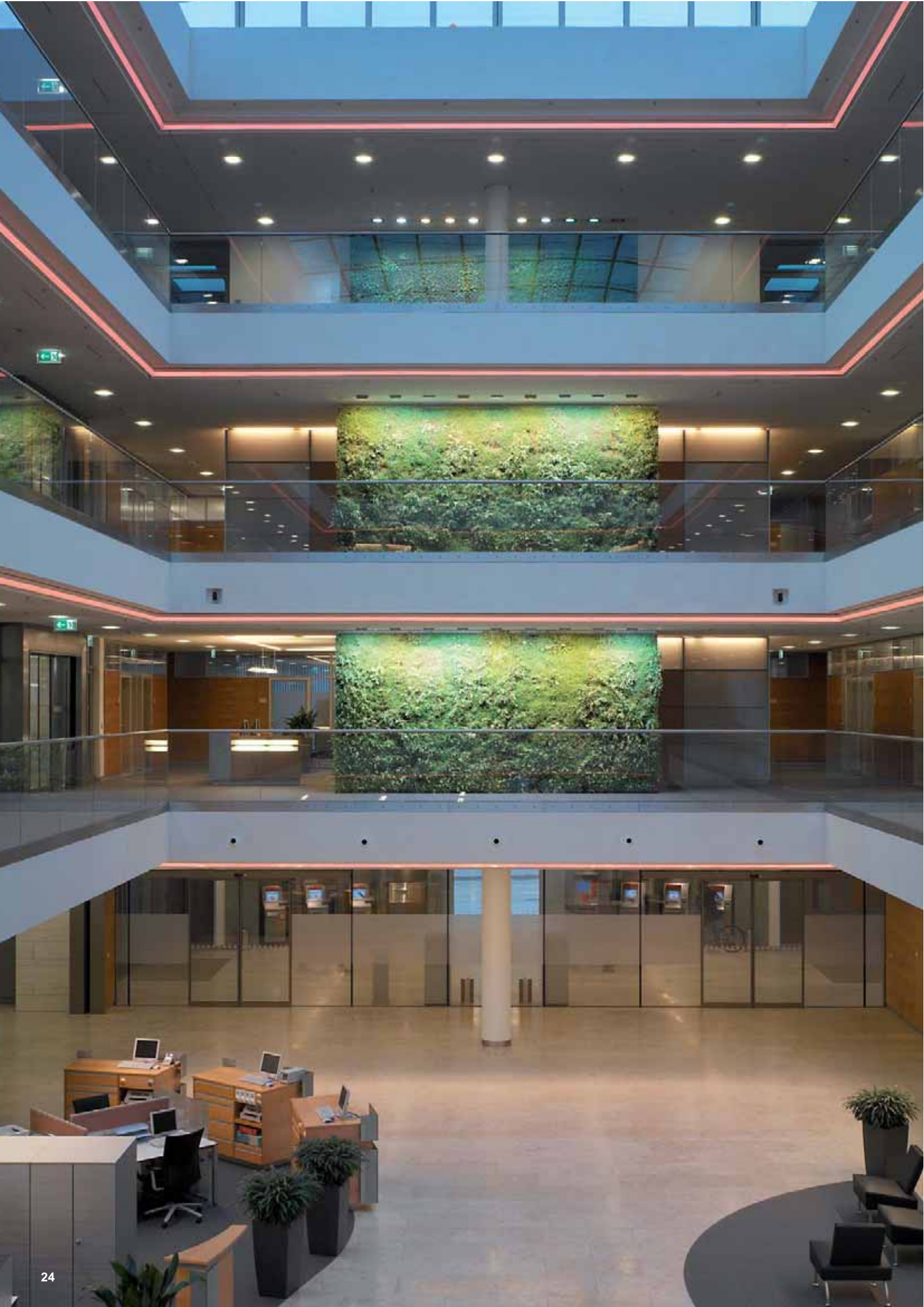
L-TEMP	Art.-No. 130 01 999		

Temperature sensor for L-VIS

To be connected to the operating unit L-VIS for measuring the environmental temperature.

Technical data

• connection:	3 core cable
• metering range:	-10…85 °C
• protection type:	IP 20
• dimensions:	71 x 71 x 26 mm
• mounting:	surface mounting



LON room operation devices in the design series of the companies Berker, Gira and Jung

Due to our close cooperation with the manufacturers of installation components and systems Berker, Gira and Jung we are in a position to offer you both LON components for modern building automation and room operation devices in the excellent designs of the three companies.

Modular and flexible

The LON bus coupling unit is the basic module for all flush-mounted components of ELKA. The bus coupling unit is the mechanical, electrical and data-technical link between a Berker, Gira or Jung design module and the LON network.

The bus coupling unit receives the power needed for operation from the LON network, for it is equipped with a link-power-transceiver (LPT). Here the data as well as the supply voltage are lead via the same pair of strands. An additional power supply is not needed.

The LON bus coupling unit – interface between design and function

Perfectly adapted to the different installation components, the LON bus coupling unit can be combined with many well-known design modules like push-buttons, movement detectors, temperature controllers or room climate modules out of the programmes of Berker, Gira and Jung.

LON bus lead

Connection to further LON operation components, actuators and sensors.

BA50 ULL	Art.-No. 130 01 002	LPT		PlugIn

Bus coupling unit
(Berker / Jung)

The bus coupling unit is the connection between the LON network and an application module.

The following functionalities can be adjusted for each push-button separately: toggle, switch, control, scene-panel, occupancy and switch-/control attitude.

The functionality of the bus coupling unit is especially aligned to the modules of the manufacturers Berker and Jung and is also available as complete bundle with one of these modules.

Other manufacturers on request.

Technical data

• network type:	LP/FT (78 kb/s)
• transceiver:	LPT11
• power consumption:	typ. 1,5 LPU (= 9 mA) max. 2 LPU(= 12 mA)
• protection type:	IP 20
• dimensions:	45 x 48 x 33 mm
• mounting:	junction switch box Ø 60 mm

BA50-G ULL	Art.-No. 130 04 002	LPT		PlugIn

bus coupling unit
(Gira)

Please note:
The LON bus coupling unit BA50-G ULL has a centering element to angle Gira design frames.

The bus coupling unit is the connection between the LON network and an application module.

The following functionalities can be adjusted for each push-button separately: toggle, switch, control, scene-panel, occupancy and switch-/control attitude.

The functionality of the bus coupling BA50-G ULL unit is especially aligned to the modules of the manufacturer Gira and is also available as complete bundle with one of these modules.

Technical data

• network type:	LP/FT (78 kb/s)
• transceiver:	LPT11
• power consumption:	typ. 1,5 LPU (= 9 mA) max. 2 LPU (= 12 mA)
• protection type:	IP 20
• dimensions:	45 x 48 x 33 mm
• mounting:	junction switch box Ø 60 mm

RCM	Art.-No. 131 1x 5xx	FTT		PlugIn	new

Room-Climate-Module (RCM)

Room operation panel as a LON compact device. It is available in all popular design styles of the companies Berker, Gira and Jung. The necessary assembly set is not encluded in delivery (see page 28).

The function of the RCM can be extended with 6 integrated digital inputs (depending of type), which depending on the parameter setting also can be used as digital outputs. At the digital input standard installation switches, push buttons and potential-free contacts can be connected. As an option the connection of an external temperature sensor is possible.

Funktions:
- Measurment of the room temperature via an internal and/or optional external sensor.
- setpoint alteration
- Display and setting of operation modes and fan speed.

Each button and each LED can individually be set by use of the PlugIn. On request a project specific version concerning the amount of buttons, LED and the printing is available.

Hint to the use of the external temperature sensor TF-33K (Art.-No. 110 01 320):
Only the use of temperature sensors of this type is allowed! The sensor cable can be extended up to a distance of 50 m by the use of a two-core cable (1,5 mm²). A shielded cable must be used if the cable is laid in a conduit or near by an electric power line cable.

Technical data
- network type: LP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 24 V DC ± 10 %
- current consumption: typ. 100 mA
- operating elements / indicator
  - number of LED: 0…8
  - number of Tasten: 0…2
  - turning knob: 0…1
  - Design Jung: central plate always with turning knob.
- digital input
  - number of: 0…6
  - cable length: max. 5 m
- temperature sensor
  - internal: 1 (NTC)
  - metering range: 0…40 °C
  - external: 1 (TF-33K, Art.-No. 110 01 320)
  - cable length: max. 50 m (with 1,5 mm²)
- digital output
  - number of: 0…6
  - voltage / current: 5 V / 0,8 mA
- connection
  - LON, supply voltage.: terminal block Ø 0,4…0,8 mm
  - input/output: cord set (assembly set)
- protection tpye: IP 20
- dimensions: depends on design
- mounting: junction switch box Ø 60 mm

Frames and the necessary assembly set are not included in the delivery unit

Other types on request.

Available: November 2008.

available types	operating- / indicating elements	design	type * assembly set RCM-MS.JOK ** assembly set RCM-MS.J	material / colour	Article number
Design Berker RCM (without assembly set)	• 8 LED, 2 push-buttons, turning knob, digital input/output: 6	S.1	LON.S1-RCM8216.00 PW*	plastic polar white	131 13 500
	• 3 LED, 1 push-button, turning knob, digital input/output: 6	K.1	LON.K1-RCM3116.00 AN*	plastic anthracite coated	131 13 501
	• 8 LED, 2 push-buttons, turning knob, digital input/output: 0	K.5	LON.K5-RCM8210.00 ES**	plastic stainless steel coated	131 13 502
	• without operating- / indicating elements, digital input/output: 6	K.1	LON.K1-RCM0006.00 PW*	plastic polar white	131 13 503
Design Gira RCM (without assembly set)	• 8 LED, 2 push-buttons, turning knob, digital input/output: 6	F100	LON.F100-RCM8216.00 RWG*	plastic pure white glossy	131 14 500
	• 3 LED, 1 push-button, turning knob, digital input/output: 6	System 55	LON.S55-RCM3116.00 AN*	plastic anthracite coated	131 14 501
	• 8 LED, 2 push-buttons, turning knob, digital input/output: 0	System 55	LON.S55-RCM8210.00 AL**	plastic aluminium coated	131 14 502
	• without operating- / indicating elements, digital input/output: 6	System 55	LON.S55-RCM0006.00 RW*	plastic pure white	131 14 503
Design Jung RCM (without assembly set)	• 8 LED, 2 push-buttons, turning knob, digital input/output: 6	LS990	LON.LS990-RCM8216.00 WW*	plastic alpine white	131 15 500
	• 3 LED, 1 push-button, turning knob, digital input/output: 6	LS990	LON.LS990-RCM3116.00 AL*	aluminium	131 15 501
	• 8 LED, 2 push-buttons, turning knob, digital input/output: 0	LS990	LON.LS990-RCM8210.00 ES**	stainless steel	131 15 502
	• without operating- / indicating elements, digital input/output: 6	LS990	LON.LS990-RCM0006.00 WW*	plastic alpine white	131 15 503

RCM-MS.J	Art.-No. see below				new

Assembly set for mounting of Room-Clima-Modules (FTT), Art.-No. 131 1x 5xx

Assembly set consisting of:
- Bearing ring for fixing of the RCM in a standard installation box.
- terminal block (4-pole)
- tailored connection cable for in-/outputs (l = 0,8 m)

Please note:
Type RCM-MS.JOK the tailored connection cable is not encluded in the scope of delivery.

Technical data
- connection: terminal block 4 x 2 pole Ø 0,4…0,8 mm
- connecting cable (only type RCM-MS.J)
  type: LiYV 0,14
  length: 0,8 m

type	version	Article number
RCM-MS.JOK	for RCM without external I/O components	131 15 998
RCM-MS.J	for RCM with external I/O components (with connection calbe)	131 15 999

TF-33K	Art.-No. 110 01 320				new

Temperature sensor (NTC)

Hint to the use of the external temperature sensor TF-33K (Art.-No. 110 01 320):
Only the use of temperature sensors of this type is allowed! The sensor cable can be extended up to a distance of 50 m by the use of a two-core cable (1,5 mm2). A shielded cable must be used if the cable is laid in a conduit or near by an electric power line cable.

Technical data
- sensor element: NTC
- connection cable: PVD, 2 x 0,75 mm², 4 m

temperature [°C]	resistance [kΩ] (analyzer Ri > 1 MΩ)
5	85,279
10	66,7785
15	52,330
20	41,272
25	33,000
30	26,281
35	21,137
40	17,085

Please note:
The resistance values can only be measured when the sensor is connected.

RCM	Art.-No. see below discontinued line	LPT		PlugIn

Room-Climate-Module

The RoomClimate Module is available in all design series of the companies Berker, Gira and Jung.

Functions:
- Measurement of the room temperature.
- Alteration of the temperature set point.
- Display of operation status.
- Alteration of fan stages.

The following functionalities can be adjusted for each push-button separately: toggle, switch, control, scene-panel, occupancy and switch-/control behavior.

Depending on the project the number of LED and push-buttons as well as the imprint can be adjusted.

Technical data
Module for bus coupling unit type BA50 ULL or type BA50-G ULL.
- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- LED: 0...8
- push-bttons: 0...2
- turning knob: 1
- temperature measurement: integrated
- metering range: 0…+40 °C
- protection type: IP 20

Complete delivery unit with LON bus coupling unit BA50 ULL or BA50-G ULL.

Frames are not included in the scope of delivery.

available types	operating- / indicating elements	design	type	material / colour	Article number
	Design Berker RCM inclusive LON-bus coupling unit • 8 LED, 2 push-buttons, turning knob	S.1	RCM 82089.00 B-S1PW	plastic alpine white	131 03 510
		B.1	RCM 82083.00 B-B17 AL	stainless steel	131 03 520
		B.1	RCM 82085.00 B-B137 AN	plastic aluminium coated	131 03 530
	Design Gira RCM inclusive LON bus coupling unit • 8 LED, 2 push-buttons, turning knob	System 55	RCM 82027.00 G-S55	plastic alpine white	131 04 510
		System 55	RCM 82028.00 G-S55	stainless steel	131 04 520
		System 55	RCM 82026.00 G-S55	plastic aluminium coated	131 04 530
	Design Jung RCM inclusive LON bus coupling unit • 8 LED, 2 push-buttons, turning knob	LS990	RCM 820.00 J-LS WW	plastic alpine white	131 05 510
		LS990	RCM 820.00 J-ES	stainless steel	131 05 520
		LS990	RCM 820.00 J-AL	plastic aluminium coated	131 05 630

RCM	Art.-No. see below discontinued line	LPT		PlugIn

Room-Climate-Module
with external push-button module

Complete bundle with LON bus coupling unit BA50 ULL/BA50-G ULL and external push-button module (TM2 or TM4 depending on the type).

The Room-Climate Module is available in all design series of the companies Berker, Gira and Jung.

Functions:
- Measurement of the room temperature.
- Alteration of the temperature set point.
- Display of operation status.
- Alteration of fan stages.

The following functionalities can be adjusted for each push-button separately: toggle, switch, control, scene-panel, occupancy and switch-/control behavior.

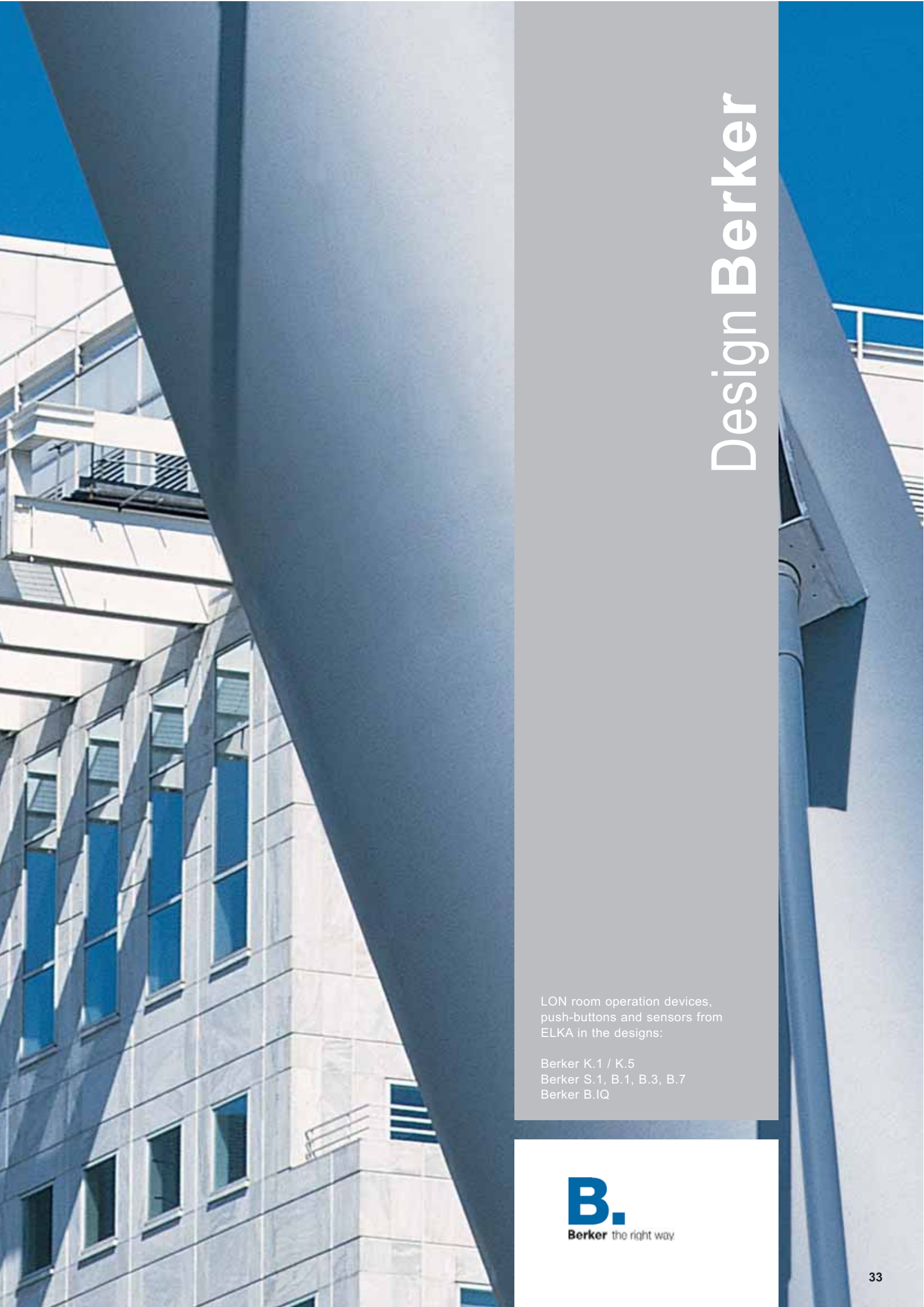
Depending on the project the number of LED and push-buttons as well as the imprint can be adjusted.

Technical data
Module for bus coupling unit type BA50 ULL or type BA50-G ULL.
- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- LED: 0...8
- push-buttons: 0...2
- turning knob: 1
- external push-button module (depending on the type):
  TM2: 2 push-buttons (for standard single rocker)
  TM4: 4 push-buttons (for standard serial rocker)
- temperature measurement: integrated
- metering range: 0…+40 °C
- protection type: IP 20

Complete delivery unit with LON bus coupling unit BA50 ULL or BA50-G ULL.

Frames and rockers are not included in the scope of delivery.

available types	operating- / indicating elements	design	type	material / colour	Article number
	Design Berker RCM inclusive LON bus coupling unit • 8 LED, 2 push-buttons, turning knob, 4 external push-buttons	S.1	RCM 82489.00 B-S1 PW	plastic alpine white	131 03 514
		B.1	RCM 82483.00 B-B17 AL	stainless steel	131 03 524
		B.1	RCM 82485.00 B-B137 AN	plastic aluminium coated	131 03 534
	Design Gira RCM inclusive LON bus coupling unit • 8 LED, 2 push-buttons, turning knob, 4 external push-buttons	System 55	RCM 82427.00 G-S55	plastic alpine white	131 04 514
		System 55	RCM 82428.00 G-S55	stainless steel	131 04 524
		System 55	RCM 82426.00 G-S55	plastic aluminium coated	131 04 534
	Design Jung RCM inclusive LON bus coupling unit • 8 LED, 2 push-buttons, turning knob	LS990	RCM 824.00 J-LS WW	plastic alpine white	131 05 514
		LS990	RCM 824.00 J-ES	stainless steel	131 05 524
		LS990	RCM 824.00 J-AL	plastic aluminium coated	131 05 634



Design Berker

LON room operation devices, push-buttons and sensors from ELKA in the designs:

Berker K.1 / K.5
Berker S.1, B.1, B.3, B.7
Berker B.IQ

Berker the right way

LON.K1-xx LON.K5-xx	Art.-No. see below	LPT		PlugIn	new

DESIGN PLUS
AWARD WINNER 2005

Design Berker K.1 and K.5
LON room operation panel

Room operation panel in the design K.1 and K.5 offer best functionality, noble form and materials. A display allows to indicate operation modes of the room, the weekday, the time and the temperature. An internal sensor measures the room temperature.

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data
- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption
  typ. 1,8 LPU (= 11 mA)
  max. 2,7 LPU (= 18 mA)
- protection type: IP 20
- installation: only screw fastening (junction switch box Ø 60 mm)

Possible materials and colours:
K.1 (frame and push-buttons plastic):
polar white / white / aluminum coated / anthracite coated
K.5 (frame: stainless steel matt):
push-buttons: plastic stainless steel coated

The appropriate LON bus coupling unit is enclosed in delivery.

Frames are not encluded in the scope of delivery. See catalog of Berker (www.berker.de).

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive room operation panel 3-fold 6 push-butons / 4 LED	LON.K1-TD30 W-PW	plastic white / polar white	131 03 120
		LON.K1-TD30 AL	plastic aluminium coated	131 03 188
		LON.K1-TD30 AN	plastic anthracite coated	131 03 208
		LON.K5-TD30 ES	plastic stainless steel coated	131 03 141
	LON bus coupling unit inclusive room operation panel 4-fold 8 push-buttons / 6 LED	LON.K1-TD22 W-PW	plastic white / polar white	131 03 121
		LON.K1-TD22 AL	plastic aluminium coated	131 03 189
		LON.K1-TD22 AN	plastic anthracite coated	131 03 209
		LON.K5-TD22 ES	plastic stainless steel coated	131 03 142
	LON bus coupling unit inclusive room operation panel 6-fold 12 push-buttons / 10 LED	LON.K1-TD33 W-PW	plastic white / polar white	131 03 122
		LON.K1-TD33 AL	plastic aluminium coated	131 03 190
		LON.K1-TD33 AN	plastic anthracite coated	131 03 210
		LON.K5-TD33 ES	plastic stainless steel coated	131 03 143

Berker K.1
frames and rockers
plastic: polar white, white
plastic: aluminium coated,
anthracite coated
(without image)

Berker K.5
frames: stainless steel matt
rockers: plastic stainless steel coated

room operation / design Berker K.1 und K.5

LON.K1-Tx.x LON.K5-Tx.x	Art.-No. see below	LPT		PlugIn	new

Design Berker K.1 and K.5
LON push-button devices
LON automatic switches
(movement sensors)

Possible materials and colours:
K.1 (frame and buttons plastic):
polar white / white / aluminum coated / anthracite coated
K.5 (frame: stainless steel matt)
push-buttons: plastic stainless steel coated

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,5 LPU (= 9 mA)
  max. 2 LPU (= 12 mA)
- protection type: IP 20
- dimensions: 45 x 48 x 33 mm
- installation: junction switch box Ø 60 mm

Delivery unit: design module and LON bus coupling unit (Art.-No. 130 01 002).

Frames are not encluded in the scope of delivery. See catalog of Berker (www.berker.de).

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 1 LED 2 push-buttons / 2 LED	LON.K1-T2.1 W-PW	plastic white / polar white	131 03 112
		LON.K1-T2.2 W-PW	plastic white / polar white	131 03 113
		LON.K1-T2.1 AL	plastic aluminium coated	131 03 180
		LON.K1-T2.2 AL	plastic aluminium coated	131 03 181
		LON.K1-T2.1 AN	plastic anthracite coated	131 03 200
		LON.K1-T2.2 AN	plastic anthracite coated	131 03 201
		LON.K1-T2.1 ES	plastic stainless steel coated	131 03 133
		LON.K1-T2.2 ES	plastic stainless steel coated	131 03 134
	LON bus coupling unit inclusive push-button module 2-fold 4 push-buttons / 2 LED 4 push-buttons / 4 LED	LON.K1-T4.2 W-PW	plastic white / polar white	131 03 114
		LON.K1-T4.4 W-PW	plastic white / polar white	131 03 115
		LON.K1-T4.2 AL	plastic aluminium coated	131 03 182
		LON.K1-T4.4 AL	plastic aluminium coated	131 03 183
		LON.K1-T4.2 AN	plastic anthracite coated	131 03 202
		LON.K1-T4.4 AN	plastic anthracite coated	131 03 203
		LON.K1-T4.2 ES	plastic stainless steel coated	131 03 135
		LON.K1-T4.4 ES	plastic stainless steel coated	131 03 136
	LON bus coupling unit inclusive push-button module 3-fold 6 push-buttons / 3 LED 6 push-buttons / 6 LED	LON.K1-T6.3 W-PW	plastic white / polar white	131 03 116
		LON.K1-T6.6 W-PW	plastic white / polar white	131 03 117
		LON.K1-T6.3 AL	plastic aluminium coated	131 03 184
		LON.K1-T6.6 AL	plastic aluminium coated	131 03 185
		LON.K1-T6.3 AN	plastic anthracite coated	131 03 204
		LON.K1-T6.6 AN	plastic anthracite coated	131 03 205
		LON.K1-T6.3 ES	plastic stainless steel coated	131 03 137
		LON.K1-T6.6 ES	plastic stainless steel coated	131 03 138
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 4 LED 8 push-buttons / 8 LED	LON.K1-T8.4 W-PW	plastic white / polar white	131 03 118
		LON.K1-T8.8 W-PW	plastic white / polar white	131 03 119
		LON.K1-T8.4 AL	plastic aluminium coated	131 03 186
		LON.K1-T8.8 AL	plastic aluminium coated	131 03 187
		LON.K1-T8.4 AN	plastic anthracite coated	131 03 206
		LON.K1-T8.8 AN	plastic anthracite coated	131 03 207
		LON.K1-T8.4 ES	plastic stainless steel coated	131 03 139
		LON.K1-T8.8 ES	plastic stainless steel coated	131 03 140
	LON bus coupling unit inclusive automatic switches (movement sensors)	standard: 180°, 1,10 m / 180°, 2,20 m comfort (with manual operation): 180°, 1,10 m / 180°, 2,20 m Available in all colours and designs of Berker K.1 and K.5.		on request

LON.BIQ1.x	Art.-No. see below	LPT		PlugIn

reddot design award winner 2004

iF design award winner 2004

Design Berker B.IQ
LON room operation panel

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

At all types a backlighted display with up to two lines indicates the operation states of the room, the week day, the time, the temperature and a push-button help.

Measurement of the room temperature via an integrated sensor. An integrated IR-receiver (depending on the type) allows using the corresponding remote control.

Labeling via a separate label element (not included in delivery) which can be lighted via a status-LED.

Technical data
- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,8 LPU (= 11 mA)
  max. 2,7 LPU (= 18 mA)
- protection type: IP 20
- installation: only screw fastening (junction switch box Ø 60 mm)

Possible materials and colours:
plastics polar white, stainless steel matt, glass polar white back coated

The appropriate LON bus coupling unit is enclosed in delivery.

Design frame not required for this system

auxiliary equipment:
label element, see table on page 37

available types	description	type	material / colour	Article number
with IR receiver	LON bus coupling unit inclusive room operation panel 4-fold 8 push-buttons / 6 LED	LON.BIQ1.4 PW	plastic polar white	131 03 048
		LON.BIQ1.4 ES	stainless steel matt	131 03 049
		LON.BIQ1.4 GL	glass polar white back coated	131 03 050
		LON.BIQ1.4IR PW	plastic polar white	131 03 059
		LON.BIQ1.4IR ES	stainless steel matt	131 03 060
		LON.BIQ1.4IR GL	glass polar white back coated	131 03 061
with IR receiver	LON bus coupling unit inclusive room operation panel 5-fold 10 pusch-buttons / 8 LED	LON.BIQ1.5 PW	plastic polar white	131 03 070
		LON.BIQ1.5 ES	stainless steel matt	131 03 071
		LON.BIQ1.5 GL	glass polar white back coated	131 03 072
		LON.BIQ1.5IR PW	plastic polar white	131 03 073
		LON.BIQ1.5IR ES	stainless steel matt	131 03 074
		LON.BIQ1.5IR GL	glass polar white back coated	131 03 075
with IR receiver	LON bus coupling unit inclusive room operation panel 6-fold 12 push-buttons / 10 LED	LON.BIQ1.6 PW	plastic polar white	131 03 076
		LON.BIQ1.6 ES	stainless steel matt	131 03 077
		LON.BIQ1.6 GL	glas polar white back coated	131 03 078
		LON.BIQ1.6IR PW	plastic polar white	131 03 079
		LON.BIQ1.6IR ES	stainless steel matt	131 03 080
		LON.BIQ1.6IR GL	glass polar white back coated	131 03 081

IR-T24.10	Art.-No. 130 03 910			

Infrared remote control for B.IQ

Battery-powered IR-remote control:
8 channel keys (ON / Off, dimming, sunblind),
3 channel group keys (A, B, C),
3 channel group LED (also sending- and battery state-LED).

The required batteries 4 x micro, alkaline (LR03) are not included in delivery.

Technical data
- IR channel: 24
- IR transmission range: 10 m
- code: RC5
- operating voltage: 6 V DC
- dimensions: 53 x 192 x 23 mm
- material: plastics, anthracite

LON.BIQ-Tx.x	Art.-No. see below	LPT		PlugIn

Design Berker B.IQ
LON push-button deviced

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Labeling via a separate label element (not included in delivery) which can be lighted via a status-LED.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,5 LPU (= 9 mA)
  max. 2 LPU (= 12 mA)
- protection type: IP 20
- dimensions: 45 x 48 x 33 mm
- installation: junction switch box
  Ø 60 mm

Possible materials and colours:
plastic polar white, stainless steel matt, glass polar white back coated

Delivery unit: design module and LON bus coupling unit (Art.-No. 130 01 002).

Design frame not required for this system.

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 1 LED 2 push-buttons / 2 LED	LON.BIQ-T2.1 PW	plastic polar white	131 03 044
		LON.BIQ-T2.1 ES	stainless steel matt	131 03 055
		LON.BIQ-T2.1 GL	glass polar white back coated	131 03 066
		LON.BIQ-T2.2 PW	plastic polar white	131 03 040
		LON.BIQ-T2.2 ES	stainless steel matt	131 03 051
		LON.BIQ-T2.2 GL	glass polar white back coated	131 03 062
	LON bus coupling unit inclusive push-button module 2-fold 4 push-buttons / 2 LED 4 push-buttons / 4 LED	LON.BIQ-T4.2 PW	plastic polar white	131 03 045
		LON.BIQ-T4.2 ES	stainless steel matt	131 03 056
		LON.BIQ-T4.2 GL	glass polar white back coated	131 03 067
		LON.BIQ-T4.4 PW	plastic polar white	131 03 041
		LON.BIQ-T4.4 ES	stainless steel matt	131 03 052
		LON.BIQ-T4.4 GL	glass polar white back coated	131 03 063
	LON bus coupling unit inclusive push-button module 3-fold 6 push-buttons / 3 LED 6 push-buttons / 6 LED	LON.BIQ-T6.3 PW	plastic polar white	131 03 046
		LON.BIQ-T6.3 ES	stainless steel matt	131 03 057
		LON.BIQ-T6.3 GL	glass polar white back coated	131 03 068
		LON.BIQ-T6.6 PW	plastic polar white	131 03 042
		LON.BIQ-T6.6 ES	stainless steel matt	131 03 053
		LON.BIQ-T6.6 GL	glass polar white back coated	131 03 064
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 4 LED 8 push-buttons / 8 LED	LON.BIQ-T8.4 PW	plastic polar white	131 03 047
		LON.BIQ-T8.4 ES	stainless steel matt	131 03 058
		LON.BIQ-T8.4 GL	glass polar white back coated	131 03 069
		LON.BIQ-T8.8 PW	plastic polar white	131 03 043
		LON.BIQ-T8.8 ES	stainless steel matt	131 03 054
		LON.BIQ-T8.8 GL	glass polar white back coated	131 03 065
	Label element B.IQ 1...3-fold	BF.BIQ1-3 tr	plastic transparent	130 03 950
	Label element B.IQ 4-fold	BF.BIQ4 tr	plastic transparent	130 03 951
	Label element B.IQ 5-fold	BF.BIQ5 tr	plastic transparent	130 03 952

LON.S1-TDxx LON.B137-TDxx	Art.-No. see below	LPT		PlugIn	new

Design Berker S.1, B.1, B.3, B.7
LON room operation panel

A display allows to indicate operation modes of the room, the weekday, the time and the temperature. An internal sensor measures the room temperature.

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,8 LPU (= 11 mA)
  max. 2,7 LPU (= 18 mA)
- protection type: IP 20
- installation: only screw fastening (junction switch box Ø 60 mm)

Possible materials and colours:
plastic white glossy, polar white glossy, anthracite coated, aluminium coated

The appropriate LON bus coupling unit is enclosed in delivery.

Frames are not encluded in the scope of delivery. See catalog of Berker (www.berker.de).

design award winner 2000

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive room operation panel 3-fold 6 push-buttons / 4 LED	LON.S1-TD30 W-PW LON.B137-TD30 AN-AL	plastic white / polar white plastic anthracite / aluminium coated	131 03 149 131 03 152
	LON bus coupling unit inclusive room operation panel 4-fold 8 push-buttons / 6 LED	LON.S1-TD22 W-PW LON.B137-TD22 AN-AL	plastic white / polar white plastic anthracite / aluminium coated	131 03 150 131 03 153
	LON bus coupling unit inclusive room operation panel 6-fold 12 push-buttons / 10 LED	LON.S1-TD33 W-PW LON.B137-TD33 AN-AL	plastic white / polar white plastic anthracite / aluminium coated	131 03 151 131 03 154

LON module insert 6-fold in combination with Berker design frames:
S.1 white/polar white, B.1 e. g. orange coated, B.3 aluminium, B.7 glass

Please note:
The listed article numbers are related to the respective LON module insert, which is compatible with the Berker design lines S.1, B.1, B.3 and B.7.

LON.S1-Tx.x LON.B137-Tx.x	Art.-No. see below	LPT		PlugIn	new

Design Berker S.1, B.1, B.3, B.7
LON push-button sensors
LON automatic switches (detectors)

Available colours for the LON module insert: plastic glossy white, glossy polar white, anthracite coated, aluminium coated

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,5 LPU (= 9 mA)
  max. 2 LPU (= 12 mA)
- protection type: IP 20
- dimensions: 45 x 48 x 33 mm
- installation: junction switch box
  Ø 60 mm

Delivery unit: design module and LON bus coupling unit (Art.-No. 130 01 002).

Frames are not encluded in the delivery unit. See catalog of Berker (www.berker.de).

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 1 LED 2 push-buttons / 2 LED	LON.S1-T2.1 W-PW LON.S1-T2.2 W-PW LON.B137-T2.1 AN-AL LON.B137-T2.2 AN-AL	plastic white / polar white plastic white / polar white plastic white / polar white plastic anthracite / aluminium coated	131 03 160 131 03 161 131 03 168 131 03 169
	LON bus coupling unit inclusive push-button module 2-fold 4 push-buttons / 2 LED 4 push-buttons / 4 LED	LON.S1-T4.2 W-PW LON.S1-T4.4 W-PW LON.B137-T4.2 AN-AL LON.B137-T4.4 AN-AL	plastic white / polar white plastic white / polar white plastic white / polar white plastic anthracite / aluminium coated	131 03 162 131 03 163 131 03 170 131 03 171
	LON bus coupling unit inclusive push-button module 3-fold 6 push-buttons / 3 LED 6 push-buttons / 6 LED	LON.S1-T6.3 W-PW LON.S1-T6.6 W-PW LON.B137-T6.3 AN-AL LON.B137-T6.6 AN-AL	plastic white / polar white plastic white / polar white plastic white / polar white plastic anthracite / aluminium coated	131 03 164 131 03 165 131 03 172 131 03 173
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 4 LED 8 push-buttons / 8 LED	LON.S1-T8.4 W-PW LON.S1-T8.8 W-PW LON.B137-T8.4 AN-AL LON.B137-T8.8 AN-AL	plastic white / polar white plastic white / polar white plastic white / polar white plastic anthracite / aluminium coated	131 03 166 131 03 167 131 03 174 131 03 175
	LON bus coupling unit inclusive automatic switches (movement sensors) Can be combined with all frames of the designs Berker S.1, B.1, B.3, B.7.	standard: 180°, 1,10 m / 180°, 2,20 m comfort (with manual operation): 180°, 1,10 m / 180°, 2,20 m Available in plastic white, polar white, anthracite and aluminium coated.		on request

Design Gira

LON room operation devices, push-buttons and sensors from ELKA in the designs:

Gira F100
Gira TS2 / TS2 plus
Gira SmartSensor / ITS30

GIRA

room operartion / design Gira F100

LON.F100.xx	Art.-No. see below	LPT		PlugIn

Design Gira F100
LON room operation panel

The LON room operation panels in the design Gira F100 stand out by their simple but distinctive shape and their variety of functions for room operation.

An illuminated display shows the operating states of the room, the weekday, the time and the temperature. The room temperature is measured by an integrated sensor.

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,8 LPU (= 11 mA)
  max. 2,7 LPU (= 18 mA)
- protection type: IP 20
- installation: only screw fastening (junction switch box Ø 60 mm)

Possible materials and colours:
plastic cream white glossy,
plastic pure white glossy

The appropriate LON bus coupling unit is enclosed in delivery.

Frames are not encluded in the scope of delivery. See catalog of Gira (www.gira.de)

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive room operation panel 3-fold 6 push-buttons / 4 LED	LON.F100.30 CWG LON.F100.30 RWG	cream white glossy pure white glossy	131 04 100 131 04 110
	LON bus coupling unit inclusive room operation panel 4-fold 8 push-buttons / 6 LED	LON.F100.22 CWG LON.F100.22 RWG	cream white glossy pure white glossy	131 04 101 131 04 111
	LON bus coupling unit inclusive room operation panel 7-fold 14 push-buttons / 12 LED	LON.F100.34 CWG LON.F100.34 RWG	cream white glossy pure white glossy	131 04 102 131 04 112

Gira F100
frames and rockers:
plastic cream white glossy,
plastic pure white glossy

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www.elka.de

LON.F100.Tx.x	Art.-No. see below	LPT		PlugIn

Design Gira F100
LON push-button devices
LON movement detectors

Available colours for the LON module insert:
plastic cream white glossy,
plastic pure white glossy

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,5 LPU (= 9 mA)
  max. 2 LPU (= 12 mA)
- protection type: IP 20
- dimensions: 45 x 48 x 33 mm
- installation: junction switch box
  Ø 60 mm

Delivery unit: design module and LON bus coupling unit (Art.-No. 130 04 002).

Frames are not encluded in the scope of delivery. See catalog of Gira (www.gira.de).

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 1 LED 2 push-buttons / 2 LED	LON.F100-T2.1 CWG LON.F100-T2.1 RWG LON.F100-T2.2 CWG LON.F100-T2.2 RWG	cream white glossy pure white glossy cream white glossy pure white glossy	131 04 093 131 04 103 131 04 094 131 04 104
	LON bus coupling unit inclusive push-button module 2-fold 4 push-buttons / 2 LED 4 push-buttons / 4 LED	LON.F100-T4.2 CWG LON.F100-T4.2 RWG LON.F100-T4.4 CWG LON.F100-T4.4 RWG	cream white glossy pure white glossy cream white glossy pure white glossy	131 04 095 131 04 105 131 04 096 131 04 106
	LON bus coupling unit inclusive push-button module 3-fold 6 push-buttons / 6 LED	LON.F100-T6.6 CWG LON.F100-T6.6 RWG	cream white glossy pure white glossy	131 04 097 131 04 107
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 8 LED	LON.F100-T8.8 CWG LON.F100-T8.8 RWG	cream white glossy pure white glossy	131 04 098 131 04 108
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 8 LED For cover frame withour crossbar.	LON.F100-T8.8 CWG LON.F100-T8.8 RWG	cream white glossy pure white glossy	131 04 099 131 04 109
	LON bus coupling unit inclusive movement detectors	standard: 180°, 1,10 m / 180°, 2,20 m comfort (with manual operation): 180°, 1,10 m / 180°, 2,20 m Available in plastic cream white glossy, pure white glossy.		on request

room operation / design Gira TS2 plus

LON.TS2.3x	Art.-No. see below	LPT		PlugIn

Design Gira TS2 plus
LON room operation panel

Via a LNS-PlugIn individual functions can be set separately for each push-button or for a complete rocker: toggle, switch, control, scene panel, occupancy, control fan stages etc. and the switch/control behavior.

At both variants (6 rockers and 3 rockers) a display indicates the operation states of the room, the week day, the time and the temperature. Measurement of the room temperature via an integrated sensor.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: min. 1,8 LPU (= 11 mA)
  min. 3,9 LPU (= 24 mA)
- protection type: IP 20
- installation: junction switch box
  Ø 60 mm

A nearly plane mounting is possible in the Gira cover frame E22 using the appropriate mounting box.

The appropriate LON bus coupling unit is enclosed in delivery.

Frames are not encluded in the scope of delivery. See catalog of Gira (www.gira.de).

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive room operation panel 3-fold 6 push-buttons / 4 LED	LON.TS2.30 K	plastic transparent white	131 04 076
		LON.TS2.30 AL	plastic aluminium coated	131 04 144
		LON.TS2.30 ES	plastic stainless steel coated	131 04 133
	LON bus coupling unit inclusive room operation panel 6-fold 12 push-buttons / 10 LED	LON.TS2.33 K	plastic transparent white	131 04 078
		LON.TS2.33 AL	plastic aluminium coated	131 04 149
		LON.TS2.33 ES	plastic stainless steel coated	131 04 138

Gira room operation panel 2plus
frames and rockers (left to right):
plastic aluminium coated / transparent white
plastic pure white glossy / transparent white
glass mint / transparent white
glass white / transparent white

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Room operation / design Gira TS 2

LON.TS2.Tx.x	Art.-No. see below	LPT		PlugIn

Design Gira TS 2
LON push-button devices
LON movement detectors

Available colours for the LON module insert: plastic transparent white, aluminium coated, stainless steel coated.

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,5 LPU (= 9 mA)
  max. 2 LPU (= 12 mA)
- installation: junction switch box
  Ø 60 mm

A nearly plane mounting is possible in the Gira cover frame E22 using the appropriate mounting box.

Delivery unit: design module and LON bus coupling unit (Art.-No. 130 04 002).

Frames are not encluded in the scope of delivery. See catalog of Gira (www.gira.de).

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 1 LED 2 push-buttons / 2 LED	LON.TS2-T2.1 K	plastic transparent white	131 04 068
		LON.TS2-T2.2 K	plastic transparent white	131 04 069
		LON.TS2-T2.1 AL	plastic aluminium coated	131 04 140
		LON.TS2-T2.1 AL	plastic aluminium coated	131 04 141
		LON.TS2-T2.2 ES	plastic stainless steel coated	131 04 129
		LON.TS2-T2.2 ES	plastic stainless steel coated	131 04 130
	LON bus coupling unit inclusive push-button module 2-fold 4 push-buttons / 2 LED 4 push-buttons / 4 LED	LON.TS2-T4.2 K	plastic transparent white	131 04 070
		LON.TS2-T4.4 K	plastic transparent white	131 04 071
		LON.TS2-T4.2 AL	plastic aluminium coated	131 04 142
		LON.TS2-T4.4 AL	plastic aluminium coated	131 04 143
		LON.TS2-T4.2 ES	plastic stainless steel coated	131 04 131
		LON.TS2-T4.4 ES	plastic stainless steel coated	131 04 132
	LON bus coupling unit inclusive push-button module 3-fold 6 push-buttons / 3 LED 6 push-buttons / 6 LED	LON.TS2.T6.3 K	plastic transparent white	131 04 072
		LON.TS2-T6.6 K	plastic transparent white	131 04 073
		LON.TS2-T6.3 AL	plastic aluminium coated	131 04 145
		LON.TS2-T6.6 AL	plastic aluminium coated	131 04 146
		LON.TS2.T6.3 ES	plastic stainless steel coated	131 04 134
		LON.TS2-T6.6 ES	plastic stainless steel coated	131 04 135
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 8 LED	LON.TS2-T8.8 K	plastic transparent white	131 04 074
		LON.TS2-T8.8 AL	plastic aluminium coated	131 04 147
		LON.TS2-T8.8 ES	plastic stainless steel coated	131 04 136
	LON bus coupling unit inclusive push-button module 6-fold 12 push-buttons / 12 LED	LON.TS2-T12.12 K	plastic transparent white	131 04 075
		LON.TS2-T12.12 AL	plastic aluminium coated	131 04 150
		LON.TS2-T12.12 ES	plastic stainless steel coated	131 04 139
	LON bus coupling unit inclusive movement detectors	standard: 180°, 1,10 m / 180°, 2,20 m comfort (with manual operation): 180°, 1,10 m / 180°, 2,20 m		on request

RCP 733x ULF...	Art.-No. see below	FTT / e2i	24 V AC / DC	PlugIn

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Innovationspreis Architektur und Technik

Design Gira SmartSensor
LON room control panel

Room-oriented control and operation unit consisting of a flush-mounting controller RC10 ULF and a design module with 1…4 rokkersfor direct control of the “everyday functions” (favorite functions). Backlighted LC-displayto realise a clear menu structure. Operationvia a backlighted navigation knob by turning/ pushing. The number of rockers for directcontrol can be extended modularly by employing e2i-bus coupling units and the corresponding design push-button modules.
A temperature sensor (PT1000 Class A) to measure the room temperature is integrated.

Variable network interface to adapt to project-specific conditions. Further functions of the device: temperature controller, alarm system, timer.

Extendable via e2i radio receiver module for remote control via instafunk components (transmitter only) as well as via SmartSensor **e2i** for room operation of up to 3 further rooms.

Technical data
- network type: LP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 24 V AC / DC ±10 %
- power consumption: 4 W
- number of connectable modules: depending on project
- bus loads (source): 44
- installation flush-mounting: dual junction switch box
  installation hollow wall: dual junction switch box
  installation concrete: BS2-universal box
- protection type: IP 20
- dimensions
  design module SmartSensor: 92 x 168 x 17 mm
  controller flush-mounting: 70,9 x 142 x 30 mm

Possible materials and colours: plastics polar white, anthracite coated,
aluminium coated.

The appropriate LON bus coupling unit is enclosed in delivery.

Design frame not required for this system.

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive room operation panel with 2 push-buttons / 2 LED	RCP 7331 ULF RWG	plastic pure white glossy	131 04 901
		RCP 7331 ULF AN	plastic anthracite coated	131 04 911
		RCP 7331 ULF AL	plastic aluminium coated	131 04 921
	LON bus coupling unit inclusive room operation panel with 4 push-buttons / 4 LED	RCP 7332 ULF RWG	plastic pure white glossy	131 04 902
		RCP 7332 ULF AN	plastic anthracite coated	131 04 912
		RCP 7332 ULF AL	plastic aluminium coated	131 04 922
	LON bus coupling unit inclusive room operation panel with 6 push-button / 6 LED	RCP 7333 ULF RWG	plastic pure white glossy	131 04 903
		RCP 7333 ULF AN	plastic anthracite coated	131 04 913
		RCP 7333 ULF AL	plastic aluminium coated	131 04 923
	LON bus coupling unit inclusive room operation panel with 8 push-buttons / 8 LED	RCP 7334 ULF RWG	plastic pure white glossy	131 04 904
		RCP 7334 ULF AN	plastic anthracite coated	131 04 914
		RCP 7334 ULF AL	plastic aluminium coated	131 04 924

e2i.ITS30-Tx.x LON.ITS30-Tx.x ...	Art.-No. see below	LPT/e2i	24 V AC/DC	PlugIn

Design Gira ITS30 / SmartSensor
LON push-button devices

Available colours for the LON module insert: plastic transparent white, aluminium coated, stainless steel coated.

Via a LNS-PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

- LON-operating unit:
  Complete bundle with LON bus coupling unit BA50-G ULL (Type LON.ITS30-T…).
- Extension module for LON controller with e2i-interface (e. g. SmartSensor, BC10 RLF, AC101 RLF):
  Complete bundle extension module with e2i-bus coupling unit (Type e2i.ITS30-T…).

Design frame not required for this system.

Technical data

LON:
- delivery unit: design module and LON bus coupling unit (Art.-No. 130 01 002).
- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,5 LPU (= 9 mA)
  max. 2 LPU (= 12 mA)
- protection type: IP 20
- dimensions: 45 x 48 x 33 mm
- installation: junction switch box Ø 60 mm

e2i:
- delivery unit: design module and LON bus coupling unit (Art.-No. 140 04 020).
- design module — bus loads (source)
  - push-buton 1-fold: 4
  - push-button 2-fold: 4
  - push-button 3-fold: 4
  - push-button 4-fold: 4
- topology: line, star, tree
- cable length: max. 50 m
- protection tpye: IP 20
- dimensions: 93 x 93 x 16,5 mm
- installation: junction switch box Ø 60 mm

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 2 LED	LON.ITS30-T2.2 RW	plastic pure white glossy	131 04 905
		LON.ITS30-T2.2 AN	plastic anthracite coated	131 04 915
		LON.ITS30-T2.2 AL	plastic aluminium coated	131 04 925
	e2i bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 2 LED	e2i.ITS30-T2.2 RW	plastic pure white glossy	141 04 001
		e2i.ITS30-T2.2 AN	plastic anthracite coated	141 04 011
		e2i.ITS30-T2.2 AL	plastic aluminium coated	141 04 021
	LON bus coupling unit inclusive push-button module 2-fold 4 push-buttons / 4 LED	LON.ITS30-T4.4 RW	plastic pure white glossy	131 04 906
		LON.ITS30-T4.4 AN	plastic anthracite coated	131 04 916
		LON.ITS30-T4.4 AL	plastic aluminium coated	131 04 926
	e2i bus coupling unit inclusive push-button module 2-fold 4 push-buttons / 4 LED	e2i.ITS30-T4.4 RW	plastic pure white glossy	141 04 002
		e2i.ITS30-T4.4 AN	plastic anthracite coated	141 04 012
		e2i.ITS30-T4.4 AL	plastic aluminium coated	141 04 022
	LON bus coupling unit inclusive push-button module 3-fold 6 push-buttons / 6 LED	LON.ITS30-T6.6 RW	plastic pure white glossy	131 04 907
		LON.ITS30-T6.6 AN	plastic anthracite coated	131 04 917
		LON.ITS30-T6.6 AL	plastic aluminium coated	131 04 927
	e2i bus coupling unit inclusive push-button module 3-fold 6 push-buttons / 6 LED	e2i.ITS30-T6.6 RW	plastic pure white glossy	141 04 003
		e2i.ITS30-T6.6 AN	plastic anthracite coated	141 04 013
		e2i.ITS30-T6.6 AL	plastic aluminium coated	141 04 023
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 8 LED	LON.ITS30-T8.8 RW	plastic pure white glossy	131 04 908
		LON.ITS30-T8.8 AN	plastic anthracite coated	131 04 918
		LON.ITS30-T8.8 AL	plastic aluminium coated	131 04 928
	e2i bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 8 LED	e2i.ITS30-T8.8 RW	plastic pure white glossy	141 04 004
		e2i.ITS30-T8.8 AN	plastic anthracite coated	141 04 014
		e2i.ITS30-T8.8 AL	plastic aluminium coated	141 04 024

NATO
ORUE

Design Jung

LON room operation devices, push-buttons and sensors from ELKA in the designs:

Jung RCD2000
Jung LS990

JUNG

LON.RCD 20...	Art.-No. see below	LPT		PlugIn

Design Jung RCD2000
LON room operation panel

A backlighted display indicates the operation states of the room, the week day, the time and the temperature. Measurement of the room temperature via integrated temperature sensor.

Via a LNS PlugIn individual functions can be set separately for each push-button: toggle, switch, control, scene panel, occupancy, control fan stages etc. and the switch/control behavior.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: min. 1,8 LPU (= 11 mA)
  max. 2,7 LPU (= 18 mA)
- protection type: IP 20
- dimensions: 81 x 152 mm (inclusive frame)
- installation: junction switch box Ø 60 mm

Possible materials and colours:
stainless steel, aluminium, plastic alpin white, plastic light grey, aluminium anthracite coated.

Frames are not encluded in the scope of delivery. See catalog of Jung (www.jung.de)

available types	description	type	material / colour	Article number
	LON room operation panel 6-fold complete 6 push-buttons / 16 LED	LON.RCD ES 2021	stainless steel	131 05 400
		LON.RCD AL 2021	aluminium	131 05 410
		LON.RCD 2021 WW	plastic alpin white	131 05 420
		LON.RCD 2021 LG	plastic light grey	131 05 430
		LON.RCD AL 2021 AN	aluminium anthracite coated	131 05 490
	LON room operation panel 8-fold complete 8 push-buttons / 16 LED	LON.RCD ES 2022	stainless steel	131 05 401
		LON.RCD AL 2022	aluminium	131 05 411
		LON.RCD 2022 WW	plastic alpin white	131 05 421
		LON.RCD 2022 LG	plastic light grey	131 05 431
		LON.RCD AL 2022 AN	aluminium anthracite coated	131 05 491
	LON room operation panel 10-fold complete 10 push-buttons / 16 LED	LON.RCD ES 2023	stainless steel	131 05 402
		LON.RCD AL 2023	aluminium	131 05 412
		LON.RCD 2023 WW	plastic alpin white	131 05 422
		LON.RCD 2023 LG	plastic light grey	131 05 432
		LON.RCD AL 2023 AN	aluminium anthracite coated	131 05 492
	LON room operation panel 12-fold complete 12 push-buttons / 16 LED	LON.RCD ES 2024	stainless steel	131 05 403
		LON.RCD AL 2024	aluminium	131 05 413
		LON.RCD 2024 WW	plastic alpin white	131 05 423
		LON.RCD 2024 LG	plastic light grey	131 05 433
		LON.RCD AL 2024 AN	aluminium anthracite coated	131 05 493
	LON room operation panel 16-fold complete 16 push-buttons / 16 LED	LON.RCD ES 2044	stainless steel	131 05 405
		LON.RCD AL 2044	aluminium	131 05 415
		LON.RCD 2044 WW	plastic alpin white	131 05 425
		LON.RCD 2044 LG	plastic light grey	131 05 435
		LON.RCD AL 2044 AN	aluminium anthracite coated	131 05 495

LON.XX-Tx.x	Art.-No. see below	LPT		PlugIn

Design Jung LS990
LON push-button devices
LON movement detectors

Possible materials and colours:
stainless steel, aluminium, plastic alpin white, plastic light grey, aluminium anthracite coated.

Via a LNS PlugIn, individual functions can be set separately as toggle, switch, control, scene panel, occupancy, control of fan levels and switch/control behaviour.

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: LPT11
- power consumption: typ. 1,5 LPU (= 9 mA)
  max. 2 LPU (= 12 mA)
- protection type: IP 20
- dimensions: 45 x 48 x 33 mm
- installation: junction switch box
  Ø 60 mm

Delivery unit: design module and LON bus coupling unit (Art.-No. 130 01 002).

Frames are not encluded in the scope of delivery. See catalog of Jung (www.jung.de)

available types	description	type	material / colour	Article number
	LON bus coupling unit inclusive push-button module 1-fold 2 push-buttons / 1 LED 2 push-buttons / 2 LED	LON.ES-T2.1	stainless steel	131 05 017
		LON.ES-T2.2	stainless steel	131 05 018
		LON.AL-T2.1	aluminium	131 05 034
		LON.AL-T2.2	aluminium	131 05 037
		LON.LS-T2.1 WW	plastic alpin white	131 05 000
		LON.LS-T2.2 WW	plastic alpin white	131 05 033
		LON.AL-T2.1 AN	aluminium anthracite coated	131 05 170
		LON.AL-T2.2 AN	aluminium anthracite coated	131 05 173
	LON bus coupling unit inclusive push-button modulel 2-fold 4 Tasten / 2 LED 4 Tasten / 4 LED	LON.ES-T4.2	stainless steel	131 05 019
		LON.ES-T4.4	stainless steel	131 05 020
		LON.AL-T4.2	aluminium	131 05 035
		LON.AL-T4.4	aluminium	131 05 038
		LON.LS-T4.2 WW	plastic alpin white	131 05 001
		LON.LS-T4.4 WW	plastic alpin white	131 05 003
		LON.AL-T4.2 AN	aluminium anthracite coated	131 05 171
		LON.AL-T4.4 AN	aluminium anthracite coated	131 05 174
	LON bus coupling unit inclusive push-button module 4-fold 8 push-buttons / 4 LED 8 push-buttons / 8 LED	LON.ES-T8.4	stainless steel	131 05 007
		LON.ES-T8.8	stainless steel	131 05 008
		LON.AL-T8.4	aluminium	131 05 036
		LON.AL-T8.8	aluminium	131 05 139
		LON.LS-T8.4 WW	plastic alpin white	131 05 002
		LON.LS-T8.8 WW	plastic alpin white	131 05 004
		LON.AL-T8.4 AN	aluminium anthracite coated	131 05 172
		LON.AL-T8.8 AN	aluminium anthracite coated	131 05 175
	LON bus coupling unit inclusive movement detectors	standard: 180°, 1,10 m / 180°, 2,20 m comfort (with manual operation): 180°, 1,10 m / 180°, 2,20 m Possible materials and colours: stainless steel, aluminium, plastic alpin white, aluminium anthracite coated.		on request

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Relais 2
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DI2.1
DI2.2
e2i
e2i

I/O components

In the section below we listed for you all components which provide (actuators) or detect and evaluate (sensors) digital or analog signals via terminals or by radio. Many of these components have a modular structure.

To make handling easier, we built some representative combinations under one article number as a set. The assigned applications are described in a library of functions. Of course, within the e2i system nearly all combinations are possible.

You can find more details in the manual. You can download it at **www.elka.de**.

Sun protection

In general, sun protection systems fulfill two important tasks:

- The sun protection system creates a dazzle-free environment. This is very important for work stations.
- The room is no longer unintentional hea ted up by solar irradiation.

Sun protection systems reduce the incidence of daylight in the room which might make it necessary to switch on the lighting of the room.

In order to still reach the most economical result, the sunblind moves into a position which is cyclically adapted to the position of the sun. The blinds automatically move into a position that corresponds to the current weather.

Heating, ventilation, air-conditioning

Due to the mostly good insulation of modern buildings and internal loads like PCs, people, etc. the room temperature rises and often only very little heating is needed. Instead, the demand for cooling and air-conditioning increases, in order to restore the optimal room and working conditions. Above all the high CO_2-concentration in the room air can reduce the productivity of the employees.

The following concepts take remedial action against oxygen-deficient and heated up air and considerably reduce operating costs:

- Free night cooling by automatic opening of windows or flaps in the cool night hours.
- Automatic change of an operating mode due to an open window or due to the changed use of the room.

Lighting

More and more modern lighting systems are equipped with energy-efficient ballasts. Nevertheless, the energy consumption in a functional building is tremendous and can be reduced by up to 50 % by intelligent functions:

- If dimmable luminaires are equipped with a constant light control, the light level can be adapted to the presence and thus always meets the demand optimally.
- Switchable luminaires can be controlled in steps or also depending on the presence.
- Outdoors, the lighting can be activated according to the brightness level.

We are ready for the energy pass: standard solutions for an energy-efficient room automation

Whether a building is regarded as economical is mainly determined by the energy consumption in daily operation. The energy consumption of a building can be divided into two parts:

- electric energy
- heating and cooling energy

To obtain an energy-efficient building, the interplay of all systems must be optimized already in the planning stage. In contrast to a common installation in which all systems are separate, the individual systems are interlinked which results in synergy effects. This is the only way to reduce operating costs and to considerably increase the energetic quality of the building. A building automation increases flexibility if rooms are shared out anew or surfaces are brought to a new utilisation and increases the productivity of the people by optimized room conditions.

This integrated approach of the interplay of the building systems shows in products like the presence detector or the room operation devices of ELKA: together in a bus system, these components influence the lighting, the room climate and the sun protection of the rooms. To create an optimal working environment, they control the operating mode of the heating/cooling system and the air-conditioning according to the presence in the room. They measure the temperature and automatically adapt the setpoint values.

PIR-K 360.5 ULL | **Art.-No. 131 01 000** | **LPT** | **PlugIn**

Occupancy sensor

Three operation modes:
- occupancy detection (operation mode: occupancy sensor),
- movement detection in interior rooms (operation mode: movement detector)
- alarm device.

In up to two operation modes two output channels are available each which are separately parameterizable.

The brightness measured within the integrated light sensor is available for further functions, as e. g. daylight-depending control on the network.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: LPT11
- module for bus coupling unit type BA50 ULL
- detection angle: 360°
- detection levels: 6
- range at installation height of 2,5 m: Ø 5 m measured at h = approx. 0,8 m Ø 8 m (floor)
- protection type: IP 20
- dimensions: Ø 104 mm x 40 mm
- installation: junction switch box Ø 60 mm
- material / colour: plastic / pure white

Complete bundle with LON bus coupling unit (Art.-No. 130 01 002).

e2i.PIR-K 360.5 | **Art.-No. 141 01 000** | **e2i**

e2i occupancy sensor

Extension set for LON controller with e2i interface (e. g. Application Controller, Basic Controller, SmartSensor) consisting of e2i bus coupling unit and occupancy sensor.
Three operation modes:
- occupancy detection (operation mode: occupancy sensor),
- movement detection in interior rooms (operation mode: movement detector)
- alarm device.

Light depending and light independent operations can be generated.

Technical data
- supply voltage: Via system bus of LON controller with e2i interface.
- power consumption: 6 bus loads
- detection angle: 360°
- detection levels: 6
- range at installation height of 2,5 m: Ø 5 m measured at h = approx. 0,8 m Ø 8 m (floor)
- protection type: IP 20
- dimensions: Ø 104 mm x 40 mm
- installation: junction switch box Ø 60 mm
- material / colour: plastic / pure white

Complete bundle with e2i bus coupling unit (Art.-No. 140 01 020).

AP-PIR | **Art.-No. 130 01 900**

Housing for occupancy sensor
(surface-mounting)

Housing for occupancy sensor
(Art.-No. 131 01 000, Art.-No. 141 01 000).

Cable implementation is possible from the bottom and the side.

Technical data
- dimensions: Ø 103 mm x 45 mm
- material / colour: plastic / pure white

LS-PIR.2	Art.-No. 132 01 450	FTT	230 V AC	PlugIn

Multisensor system

For administration of rooms regarding occupancy to generate related functions like switching, dimming or influence the room climate.

Up to 6 sensors can be operated at one LON node. The occupancy (= light independent) and light signals are available in the LON network on demand. They also can be linked logically using an internal functional library. This allows building groups of individual sensors for e. g. areas in bigger offices.

Included in this delivery unit:
1 x LON controller with e2i interface
(Basic Controller, Art.-No. 130 01 621)
2 x e2i occupancy sensors
(Art.-No. 141 01 000)

Extension sensor for Multisensor system e2i.PIR-K 360.5, Art.-No. 141 01 000. (Technical data see e2i occupancy sensor.)

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 230 V AC ±10 %
- power consumption: 8,5 W (at 6 connected sensors)
- cable length: collective max. 50 m
- e2i occupancy sensor: max. 6

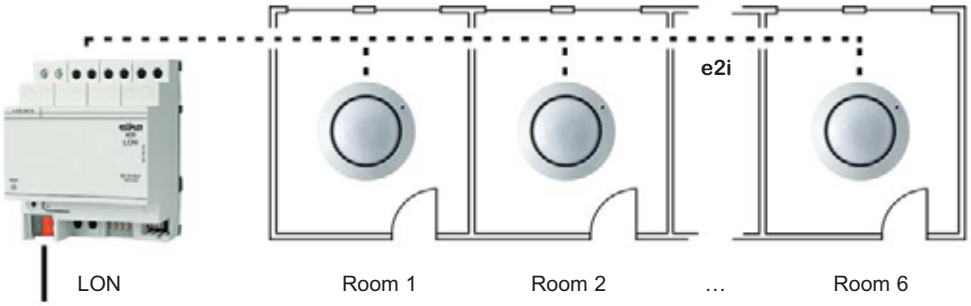
each occupancy sensor

- detection angle: 360°
- detection levels: 6
- range at installation height of 2,5 m: Ø 5 m measured at h = approx. 0,8 m Ø 8 m (floor)
- protection type: IP 20
- dimensions sensor: Ø 104 mm x 40 mm
- installation: junction switch box Ø 60 mm
- colour: pure white

LON controller with e2i interface

- dimensions: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022
- protection type: IP 20

LON controller for fush-mounting installation on demand.



TS6.2-DC ULF	Art.-No. 130 01 301	FTT	24 V DC

Digital input/output module
6DI / 2DO, flush-mounting

The digital input/output module TS6.2 ULF for flush-mounting enables using the standard push-buttons (potential-free contacts) within a LON network.

Six inputs and two outputs.

Depending on the application, a switching-, dimming- or sunblind control-command can be generated.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 24 V DC
- digital input: 6 (24 V DC)
- digital output: 2 (24 V DC, 100 mA)
- protection type: IP 20
- dimensions: 50 x 50 x 20 mm
- installation: junction switch box Ø 60 mm

LS(20)-DI...	Art.-No. see below	FTT	230 V AC / 24 V DC	PlugIn

Digital input n-channel 230 V AC

Multi-channel digital input.
Setting per channel: kind of contact, debounce time and timing.

Variable network interface. Software functions like scene, logic, timer. Other configurations can be arranged by customer.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- input 4
  potential-free (supplied externally)
  nominal voltage: 230 V AC ± 10 %
  input current: 2 mA
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-DI 4.230	24 V DC	digital input 4-fold 230 V AC	6	132 11 400
LS20-DI 8.230	24 V DC	digital input 8-fold 230 V AC	8	132 11 401
LS20-DI 12.230	24 V DC	digital input 12-fold 230 V AC	10	132 11 402
LS20-DI 16.230	24 V DC	digital input 16-fold 230 V AC	12	132 11 403
LS20-DI 20.230	24 V DC	digital input 20-fold 230 V AC	14	132 11 404
LS20-DI 24.230	24 V DC	digital input 24-fold 230 V AC	16	132 11 405
LS-DI 4.230	230 V AC	digital input 4-fold 230 V AC	6	132 01 400
LS-DI 8.230	230 V AC	digital input 8-fold 230 V AC	8	132 01 401
LS-DI 12.230	230 V AC	digital input 12-fold 230 V AC	10	132 01 402
LS-DI 16.230	230 V AC	digital input 16-fold 230 V AC	12	132 01 403
LS-DI 20.230	230 V AC	digital input 20-fold 230 V AC	14	132 01 404
LS-DI 24.230	230 V AC	digital input 24-fold 230 V AC	16	132 01 405

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-DI...	Art.-No. see below	FTT	230 V AC / 24 V DC	PlugIn

Digital input n-channel 24 V AC/DC

Multi-channel digital input.
Setting per channel: kind of contact, debounce time and timing.

Variable network interface. Software functions like scene, logic, timer. Other configurations can be arranged by customer.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- input 4
  potential-free (supplied externally)
  nominal voltage: 24 V AC/DC
  (7,5…26 V AC/DC)
  input current: 2 mA
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-DI 4.24	24 V DC	digital input 4-fach 24 V AC/DC	6	132 11 406
LS20-DI 8.24	24 V DC	digital input 8-fach 24 V AC/DC	8	132 11 407
LS20-DI 12.24	24 V DC	digital input 12-fach 24 V AC/DC	10	132 11 408
LS20-DI 16.24	24 V DC	digital input 16-fach 24 V AC/DC	12	132 11 409
LS20-DI 20.24	24 V DC	digital input 20-fach 24 V AC/DC	14	132 11 410
LS20-DI 24.24	24 V DC	digital input 24-fach 24 V AC/DC	16	132 11 411
LS-DI 4.24	230 V AC	digital input 4-fach 24 V AC/DC	6	132 01 406
LS-DI 8.24	230 V AC	digital input 8-fach 24 V AC/DC	8	132 01 407
LS-DI 12.24	230 V AC	digital input 12-fach 24 V AC/DC	10	132 01 408
LS-DI 16.24	230 V AC	digital input 16-fach 24 V AC/DC	12	132 01 409
LS-DI 20.24	230 V AC	digital input 20-fach 24 V AC/DC	14	132 01 410
LS-DI 24.24	230 V AC	digital input 24-fach 24 V AC/DC	16	132 01 411

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-AI...	Art.-No. see below	FTT	230 V AC / 24 V DC	PlugIn

Analog input n-channel voltage/current

Multi-channel analog input for interpretation of sensors with current- or voltage outputs. Supply of sensors provided by module. Current input are monitored regarding broken wire.

Variable network interface. Software functions like threshold value, logic, timer.

Other configurations can be arranged by customer.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- input
  - supply voltage: 24 V AC ± 15 %
  - power consumption: 4 VA
  - votage: 0…1 V, 0…10 V (DC) impedanz: approx. 18 kΩ
  - current: 0…20 mA, 4…20 mA impedanz: approx. 100 Ω
  - A/D converter: 14 bit
- supply of sensors: 24 V DC max. 100 mA
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-AI 4UI	24 V DC	analog input 4-fold voltage/current	8	132 11 420
LS20-AI 8UI	24 V DC	analog input 8-fold voltage/current	12	132 11 421
LS20-AI 12UI	24 V DC	analog input 12-fold voltage/current	16	132 11 422
LS-AI 4UI	230 V AC	analog input 4-fold voltage/current	8	132 01 420
LS-AI 8UI	230 V AC	analog input 8-fold voltage/current	12	132 01 421
LS-AI 12UI	230 V AC	analog input 12-fold voltage/current	16	132 01 422

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS-WS...	Art.-No. see below	FTT	230 V AC	PlugIn

Weather station

Weather station for measurement of rain, twilight and 3-fold brightness (dependent on direction).

Build-in heater prevents condensation (does not prevent from freezing in frosty environment). Supply of sensors provided by module. Version with added analog input module allows the connection of further external sensors with current- or voltage output like e. g. sensor for outside temperature.

Variable network interface. Software functions like threshold value, logic, timer.

Other configurations can be arranged by customer.

Included in this delivery unit:
LON-controller BC10 RLF
e2i-Combi sensor
Power supply

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- mounting: DIN-rail DIN EN 50022

LON Basic Controller (Art.-No. 130 01 621) see page 77.

e2i Combi Sensor (Art.-Nr. 140 01 300) see page 81.

Encluded in this delivery unit:
1 x LON Controller with e2i interface (Basic Controller, Art.-No. 130 01 621)
1 x e2i Combi Sensor (Art.-No. 141 01 300)
1 x Power supply (Art.-No. 110 01 924)

type	description	width [TE] * (1 TE = 18 mm)	Article number
LS-WS	weather station	8	132 01 430
LS-WS+4	weather station inclusive 4 additional analog inputs	4	132 01 431

LS-RF	Art.-No. 132 01 440	FTT	230 V AC	PlugIn

Radio receiver

Component for interpretation of instafunk components in LON networks.

Available transmitters: digital input/output module (230 V AC or low voltage), push-button devices from the companies Berker, Gira or Jung in combination with radio-controlled wall-mounted transmitters or as flat wall transmitters, hand-held transmitters.

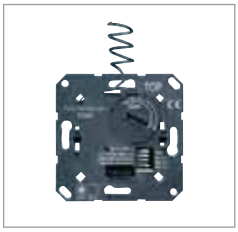
Receiver designed in installation housing to be mounted at ceiling, false floor, etc. .

Controller designed in DIN-rail housing to be mounted in cabinets or installation box. Software functions like scene, logic, timer. Other configurations can be arranged by customer.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 230 V AC ± 10 %
- power consumption: 8,5 W
- radio system: instafunk
  frequence: 433,42 MHz
  modulation: ASK
  (Amplitude Shift Keying)
- number of applicable transmitters: 12+1
- transmission range for radio control depending on the transmitter: 100 m / 30 m (free field, see instafunk transmitter, page 82), reduce transmission range in buildings depending on the constructional condition .
- assembly width / dimensions
  LON Basic Controller: 4 TE (approx. 70 mm)
  e2i radio receiver: 105 x 50 x 29 mm
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

Included in this delivery unit:
1 x LON controller with e2i interface
(Basic Controller, Art.-No. 130 01 621)
1 x e2i radio receiver module
(Art.-No. 141 01 300)



instafunk transmitter,
instafunk digital input modules and
instafunk hand-held transmitters

see page 82.

LS(20)-DC 16.64	Art.-No. 132 x1 225		FTT	230 V AC / 24 V DC	PlugIn	new

DALI controller

Device to control luminairs with DALI ballasts. It provides the power supply (16 V DC) for up to 64 standard DALI ballasts. 16 DALI groups are supported. DALI devices can be assigned in any order, at which one DALI ballast can only be member of one group.

Moreover, each DALI ballast can be controlled individully autonomous of the membership to a DALI group via an absolute light value. Through this, the luminairs can be grouped in further non-DALI groups. It is recommended not to assign more than two DALI ballasts in such a non DLAI group.

The DALI controller disposes of scene controllers, where 16 light values can be stored for each DALI group. Furthermore, time delays (swith-on, switch-off, stair case timer, time-controlled dimming actions) can be adjusted.

In addition software modules can be used like logics, constant light controllers, etc., which can be assigned individully to a luminair or a DALI group.

The DALI cable is monitored concerning short-circuit and interruption. If supported by the DALI ballast, more information are available:
- The actual light value (setpoint).
- Error message, if the ballast has a malfunction.
- Error message, if the lamp fails.

For start-up and maintenance the controller can be manual operated (push buttons, display). In complete operating DALI system a single DALI ballast can be exchanged without using the PlugIn.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 230 V AC ± 10 %
- DALI: 64 devices / max. 16 groups
- DALI supply: 16 V / 128 mA
- manual operation is possible
- protection type: IP 20
- assembly width: 8 TE (approx. 140 mm)
- mounting: DIN-rail DIN EN 50022

Available: October 2008.

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-DC 16.64	24 V DC	DALI Controller 16 x 64	8	132 11 225
LS-DC 16.64	230 V AC	DALI Controller 16 x 64	8	132 01 225

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

DIM 4 RLF	Art.-No. 130 01 250 discontinued line	FTT	230 V AC	PlugIn

DALI controller DIM 4 RLF

Controller to control and supply DALI devices. State control of all connected DALI devices. Monitoring of all illuminants (if supported by electronic ballasts).

Functions: time function, logic assignment, prioritization, constant light control, scene control, behavior in case of voltage failure/-return. LON-objects on the device: Lamp Actuator (3040) (4x), Constant Light Controller (3050) (4x) and Scene Controller (3251) (4x).

Technical data

- network type: LP/FT (78 kb/s)
- Ttransceiver: FTT10 A
- supply voltage: 230 V AC ± 10 %
- DALI: 64 devices / max. 4 groups
- DALI supply voltage via LON controller.
- manual operation possible
- status LED
- protection type: IP 20
- assembly width: 6 TE (approx. 105 mm)
- mounting: DIN-rail DIN EN 50022

DIM 8 RLF	Art.-No. 130 01 251 discontinued line	FTT	230 V AC	PlugIn

DALI controller DIM 8 RLF

Controller to control and supply DALI devices. State control of all connected DALI devices. Monitoring of all illuminants (if supported by electronic ballasts).

Functions: time function, logic assignment, prioritization, constant light control, scene control, behavior in case of voltage failure/-return. LON-objects on the device: Lamp Actuator (3040) (8x), Constant Light Controller (3050) (4x) and Scene Controller (3251) (8x).

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 230 V AC ± 10 %
- DALI: 64 devices / max. 8 groups
- DALI supply voltage via LON controller.
- manual operation possible
- status LED
- protection type: IP 20
- assembly width: 6 TE (approx. 105 mm)
- mounting: DIN-rail DIN EN 50022

DIM 16 RLF	Art.-No. 130 01 252 discontinued line	FTT	230 V AC	PlugIn

DALI controller DIM 16 RLF

Controller to control and supply DALI devices. State control of all connected DALI devices. Monitoring of all illuminants (if supported by electronic ballasts).

Functions: time function, logic assignment, prioritization, constant light control, scene control, behavior in case of voltage failure/-return. LON-objects on the device: Lamp Actuator (3040) (16x), Constant Light Controller (3050) (1x).

Technical data

- network type: LP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 230 V AC ± 10 %
- DALI: 64 devices / max. 16 groups
- DALI supply voltage via LON controller.
- manual operation possible
- status LED
- protection type: IP 20
- assembly width: 6 TE (approx. 105 mm)
- mounting: DIN-rail DIN EN 50022

LS(20)-DO...	Art.-No. see below		FTT	230 V AC / 24 V DC	PlugIn

Digital output n-channel 230 V AC

Multi-channel digital output with Triac-outputs; especially dedicated to control thermo-electric valve drive, magnetic valves, contactors and relays. ON-/OFF-mode and pulse-pause mode. Setting per channel: On-, Off- and staircase timer, behavior at power failure/-return.

Variable network interface. Software functions like scene, logic, timer. Other configurations can be arranged by customer.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- output: Triac, 230 V AC
  - min. load current: 6 mA
  - max. load current: 350 mA @ 25 °C
  - max. work cycle: 1 s
  - switch-on period: 100 % ED
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-DO 4.230	24 V DC	digital output 4-fold 230 V AC	8	132 11 210
LS20-DO 8.230	24 V DC	digital output 8-fold 230 V AC	12	132 11 211
LS20-DO 12.230	24 V DC	digital output 12-fold 230 V AC	16	132 11 212
LS20-DO 16.230	24 V DC	digital output 16-fold 230 V AC	20	132 11 213
LS-DO 4.230	230 V AC	digital output 4-fold 230 V AC	8	132 01 210
LS-DO 8.230	230 V AC	digital output 8-fold 230 V AC	12	132 01 211
LS-DO 12.230	230 V AC	digital output 12-fold 230 V AC	16	132 01 212
LS-DO 16.230	230 V AC	digital output 16-fold 230 V AC	20	132 01 213

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-DO...	Art.-No. see below		FTT	230 V AC / 24 V DC	PlugIn

Digital output n-Channel 24 V AC

Multi-channel digital output with Triac-outputs; especially dedicated to control thermo-electric valve drive, magnetic valves, contactors and relays.

ON-/OFF-mode and puls-pause mode.
Setting per channel: On-, Off- and staircase timer, behavior at power failure /-return.
Variable network interface.

Software functions like scene, logic, timer.
Other configurations can be arranged by customer.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- output: Triac, 24 V AC
  min. load current: 6 mA
  max. load current: 350 mA @ 25 °C
  max. work cycle: 1 s
  switch-on period: 100 % ED
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-DO 4.24	24 V DC	digital output 4-fold 24 V AC	8	132 11 215
LS20-DO 8.24	24 V DC	digital output 8-fold 24 V AC	12	132 11 216
LS20-DO 12.24	24 V DC	digital output 12-fold 24 V AC	16	132 11 217
LS20-DO 16.24	24 V DC	digital output 16-fold 24 V AC	20	132 11 218
LS-DO 4.24	230 V AC	digital output 4-fold 24 V AC	8	132 01 215
LS-DO 8.24	230 V AC	digital output 8-fold 24 V AC	12	132 01 216
LS-DO 12.24	230 V AC	digital output 12-fold 24 V AC	16	132 01 217
LS-DO 16.24	230 V AC	digital output 16-fold 24 V AC	20	132 01 218

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-SA...	Art.-No. see below		FTT	230 V AC / 24 V DC	PlugIn

Relay actuator n-channel with bistable relay

Multi-channel relay actuator with bistable relay; especially dedicated to control lamp loads and especially capacity loads (high-current-contact).

Setting per channel: On-, Off- and staircase timer (possibility to re-trigger), behavior at power failure /-return. Variable network interface.

Software functions like scene, logic, timer. Other configurations can be arranged by customer.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- relais output: NO-contact, bi-stable
  power: µ 16 A / 230 V AC
  other loads: see LON Application Controller (page 76).
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-SA 6.16	24 V DC	relay actuator 6-fold	8	132 11 200
LS20-SA 12.16	24 V DC	relay actuator 12-fold	12	132 11 201
LS20-SA 18.16	24 V DC	relay actuator 18-fold	16	132 11 202
LS20-SA 24.16	24 V DC	relay actuator 24-fold	20	132 11 203
LS20-SA 6.16H	24 V DC	relay actuator 6-fold with manual operation	10	132 11 204
LS20-SA 12.16H	24 V DC	relay actuator 12-fold with manual operation	14	132 11 205
LS20-SA 18.16H	24 V DC	relay actuator 18-fold with manual operation	18	132 11 206
LS20-SA 24.16H	24 V DC	relay actuator 24-fold with manual operation	22	132 11 207
LS-SA 6.16	230 V AC	relay actuator 6-fold	8	132 01 200
LS-SA 12.16	230 V AC	relay actuator 12-fold	12	132 01 201
LS-SA 18.16	230 V AC	relay actuator 18-fold	16	132 01 202
LS-SA 24.16	230 V AC	relay actuator 24-fold	20	132 01 203
LS-SA 6.16H	230 V AC	relay actuator 6-fold with manual operation	10	132 01 204
LS-SA 12.16H	230 V AC	relay actuator 12-fold with manual operation	14	132 01 205
LS-SA 18.16H	230 V AC	relay actuator 18-fold with manual operation	18	132 01 206
LS-SA 24.16H	230 V AC	relay actuator 24-fold with manual operation	22	132 01 207

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-AO...	Art.-No. see below		FTT	230 V AC / 24 V DC	PlugIn

Analog actuator n-channel voltage / current

Multi-channel analog actuator to control actuating elements with current- or voltage inputs.

Supply of the elements by the module.
Variable network interface.

Software functions like threshold value, logic, timer. Other configurations can be arranged by customer.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- output
  - supply: 24 V AC ± 15 % / max. 4 VA
  - voltage: 0…1 V, 0…10 V (DC), burden ≥ 1 kΩ
  - current: 0…20 mA, 4…20 mA, burden ≤ 100 Ω
  - AD-conversion: 14 Bit
  - switch-on period: 100 % ED
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-AO 4UI	24 V DC	analog actuator 4-fold voltage / current	8	132 11 260
LS20-AO 8UI	24 V DC	analog actuator 8-fold voltage / current	12	132 11 261
LS20-AO 12UI	24 V DC	analog actuator 12-fold voltage / current	16	132 11 262
LS20-AO 16UI	24 V DC	analog actuator 16-fold voltage / current	20	132 11 263
LS-AO 4UI	230 V AC	analog actuator 4-fold voltage / current	8	132 01 260
LS-AO 8UI	230 V AC	analog actuator 8-fold voltage / current	12	132 01 261
LS-AO 12UI	230 V AC	analog actuator 12-fold voltage / current	16	132 01 262
LS-AO 16UI	230 V AC	analog actuator 16-fold voltage / current	20	132 01 263

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-JA...	Art.-No. see below		FTT	230 V AC / 24 V DC	PlugIn

Sunblind actuator n-channel 230 V AC (also DC-motos)

Multi-channel sunblind actuator to control motors for sunblinds. Internal interlock of the moving direction via contacts.

Also control of DC-motors possible (half number of channels). Setting per channel: Position, behavior at power failure /-return.

Variable network interface. Software functions like scene, logic, timer.

Other configurations can be arranged by customer.

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- output
  nominal current: 6 A AC1
  nominal voltage: 250 V AC / 24 V DC
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-JA 2.6AC	24 V DC	sunblind actuator 2-fold 230 V AC	6	132 11 250
LS20-JA 4.6AC	24 V DC	sunblind actuator 4-fold 230 V AC	8	132 11 251
LS20-JA 6.6AC	24 V DC	sunblind actuator 6-fold 230 V AC	10	132 11 252
LS20-JA 8.6AC	24 V DC	sunblind actuator 8-fold 230 V AC	12	132 11 253
LS20-JA 10.6AC	24 V DC	sunblind actuator 10-fold 230 V AC	14	132 11 254
LS20-JA 2.6ACH	24 V DC	sunblind actuator 2-fold 230 V AC, man oper.	8	132 11 255
LS20-JA 4.6ACH	24 V DC	sunblind actuator 4-fold 230 V AC, man oper.	10	132 11 256
LS20-JA 6.6ACH	24 V DC	sunblind actuator 6-fold 230 V AC, man oper.	12	132 11 257
LS20-JA 8.6ACH	24 V DC	sunblind actuator 8-fold 230 V AC, man oper.	14	132 11 258
LS20-JA 10.6ACH	24 V DC	sunblind actuator 10-fold 230 V AC, man oper.	16	132 11 259
LS-JA 2.6AC	230 V AC	sunblind actuator 2-fold 230 V AC	6	132 01 250
LS-JA 4.6AC	230 V AC	sunblind actuator 4-fold 230 V AC	8	132 01 251
LS-JA 6.6AC	230 V AC	sunblind actuator 6-fold 230 V AC	10	132 01 252
LS-JA 8.6AC	230 V AC	sunblind actuator 8-fold 230 V AC	12	132 01 253
LS-JA 10.6AC	230 V AC	sunblind actuator 10-fold 230 V AC	14	132 01 254
LS-JA 2.6ACH	230 V AC	sunblind actuator 2-fold 230 V AC, man oper.	8	132 01 255
LS-JA 4.6ACH	230 V AC	sunblind actuator 4-fold 230 V AC, man oper.	10	132 01 256
LS-JA 6.6ACH	230 V AC	sunblind actuator 6-fold 230 V AC, man oper.	12	132 01 257
LS-JA 8.6ACH	230 V AC	sunblind actuator 8-fold 230 V AC, man oper.	14	132 01 258
LS-JA 10.6ACH	230 V AC	sunblind actuator 10-fold 230 V AC, man oper.	16	132 01 259

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-DA...	Art.-No. see below		FTT	230 V AC / 24 V DC	PlugIn

Universal dim actuator n-channel 230 V AC

Multi-channel universal dimmer for dimming capacitive-ohmic or inductive-ohmic lamps (module detects autonomous the phasing).

Short-cut and overload protected. No neutral conductor necessary. Each channel can be operated at different phases.

Setting per channel: Memory-function (last output value), adjustment of dim-curve, On-, Off- and staircase timer (possibility to re-trigger), behavior at power failure /-return.

Variable network interface. Software functions like scene, logic, timer. Other configurations can be arranged by customer.

Power output extendable via separate power extension ELZ 500U (Art.-No. 516 620 00, see page 85).

Technical data

- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- output: 230 V AC
  power: see table
  minimum load: 50 VA
  switch-on period: 100 % ED
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	supply voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-DA 2.350	24 V DC	dim actuator 2-fold 350 VA	8	132 11 230
LS20-DA 4.350	24 V DC	dim actuator 4-fold 350 VA	12	132 11 231
LS20-DA 6.350	24 V DC	dim actuator 6-fold 350 VA	16	132 11 232
LS20-DA 8.350	24 V DC	dim actuator 8-fold 350 VA	20	132 11 233
LS20-DA 10.350	24 V DC	dim actuator 10-fold 350 VA	24	132 11 234
LS20-DA 2.350H	24 V DC	dim actuator 2-fold 350 VA, man. operation	10	132 11 235
LS20-DA 4.350H	24 V DC	dim actuator 4-fold 350 VA, man. operation	14	132 11 236
LS20-DA 6.350H	24 V DC	dim actuator 6-fold 350 VA, man. operation	18	132 11 237
LS20-DA 8.350H	24 V DC	dim actuator 8-fold 350 VA, man. operation	22	132 11 238
LS20-DA 10.350H	24 V DC	dim actuator 10-fold 350 VA, man. operation	26	132 11 239
LS-DA 2.350	230 V AC	dim actuator 2-fold 350 VA	8	132 01 230
LS-DA 4.350	230 V AC	dim actuator 4-fold 350 VA	12	132 01 231
LS-DA 6.350	230 V AC	dim actuator 6-fold 350 VA	16	132 01 232
LS-DA 8.350	230 V AC	dim actuator 8-fold 350 VA	20	132 01 233
LS-DA 10.350	230 V AC	dim actuator 10-fold 350 VA	24	132 01 234
LS-DA 2.350H	230 V AC	dim actuator 2-fold 350 VA, man. operation	10	132 01 235
LS-DA 4.350H	230 V AC	dim actuator 4-fold 350 VA, man. operation	14	132 01 236
LS-DA 6.350H	230 V AC	dim actuator 6-fold 350 VA, man. operation	18	132 01 237
LS-DA 8.350H	230 V AC	dim actuator 8-fold 350 VA, man. operation	22	132 01 238
LS-DA 10.350H	230 V AC	dim actuator 10-fold 350 VA, man. operation	26	132 01 239

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

LS(20)-IO...	Art.-No. see below		FTT	230 V AC / 24 V DC	PlugIn

Combi in-/output 12-channel with bi-stable relay

12-channel relay actuator with bi-stable relay and 12 digital inputs.

Especially dedicated to control lamp loads and especially capacity loads (high-current-contact).

Setting per channel: On-, Off- and staircase timer (possibility to re-trigger), behavior at power failure/return and (inputs) kind of contact, debounce time and timing.

Variable network interface. Software functions like scene, logic, timer.

Other configurations can be arranged by customer.

Technical data
- nominal voltage of the outputs
  LS(20)-IO 12.16 / 12.230: 230 V AC ± 10 %
  LS(20)-IO 12.16 / 12.24: 24 V AC/DC (7,5…26 V AC/DC)
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- power consumption: 8,5 W
- input: potential-free, supplied externally
- input current: 2 mA
- relay output: NO-contact, bi-stable
  power: µ 16A / 230 V AC
  other loads: see technical data LON Application Controller (page 76).
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

type	suppy voltage	description	width [TE] * (1 TE = 18 mm)	Article number
LS20-IO 12.16 / 12.230 inputs: 12 x 230 V	24 V DC	in-/output 12-fold 16 A with 12 digital inputs 230 V	18	132 11 300
LS20-IO 12.16. / 12.24 inputs: 12 x 24 V	24 V DC	in-/output 12-fold 16 A with 12 digital inputs 24 V	18	132 11 301
LS-IO 12.16 / 12.230 inputs: 12 x 230 V	230 V AC	in-/output 12-fold 16 A with 12 digital inputs 230 V	18	132 01 300
LS-IO 12.16 / 12.24 inputs: 12 x 24 V	230 V AC	in-/output 12-fold 16 A with 12 digital inputs 24 V	18	132 01 301

* A distribution to several DIN-rails is possible using the e2i-sytem bus extension EST460E (Art.-No. 140 01 901).

MSA 120.2 ALL	Art.-No. 130 01 500		LPT		PlugIn

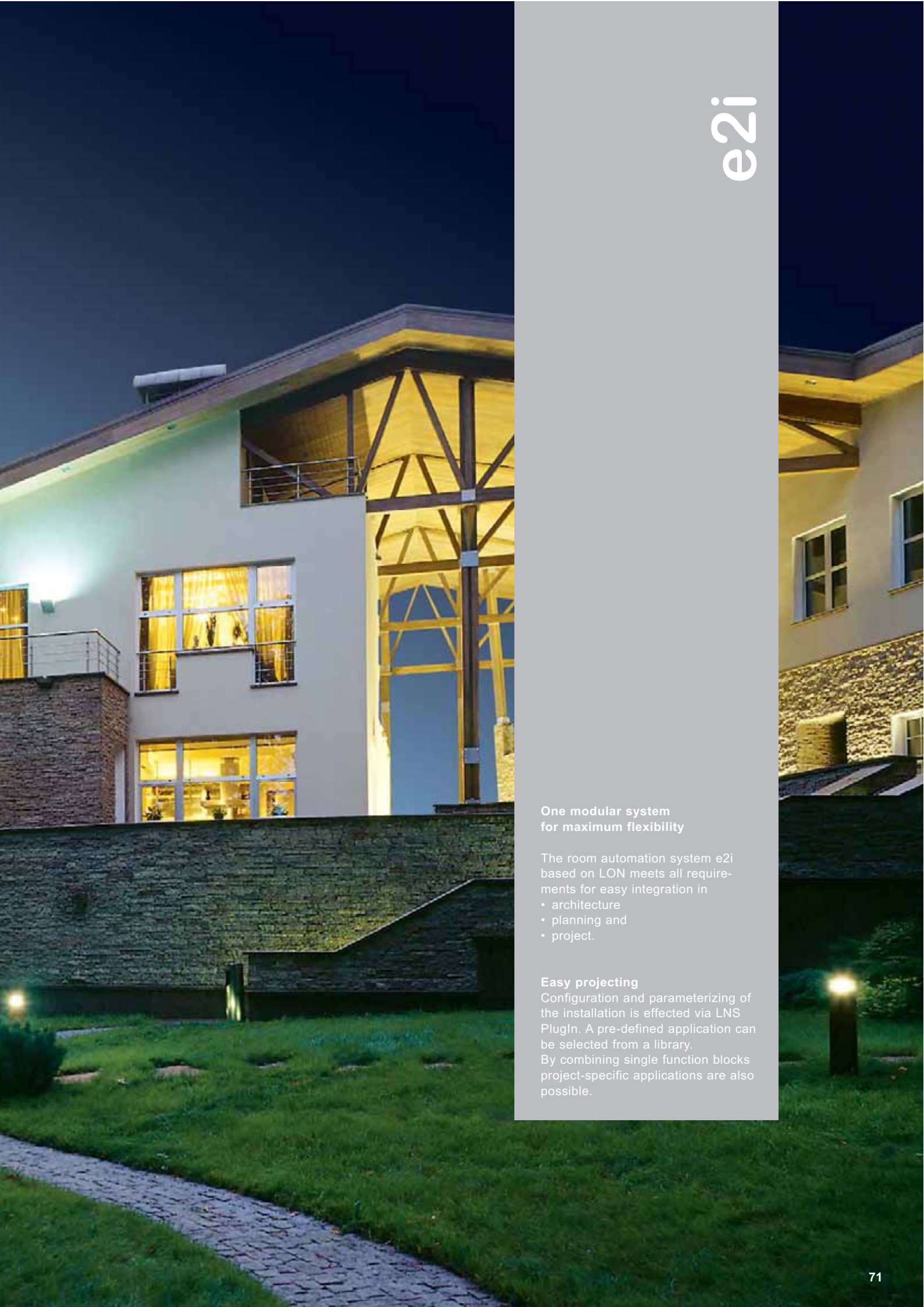
Motor-driven valve actuator

The LON motor driven valve actuator MSA 120.2 ALL with two digital inputs to control e. g. a valve of a cooling unit, to guard the dew point and a window contact at the same time.

Integrated PID-Controller (heat/cool in sequence) to realize especial economic solutions.

Best adapted to the current types of valves of the well-known manufacturers (partly via adapter), high accuracy and a most compact type of construction.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: LPT11
- digital input: 2 (non-isolated)
- valve stroke: 1...4,2 mm
- closing rage (valve): ± 11,5 mm
- stem force: 120 N
- running time: 25 s/mm
- dimensions: 46 x 87 x 60 mm
- mounting: coupling ring M30 x 1,5

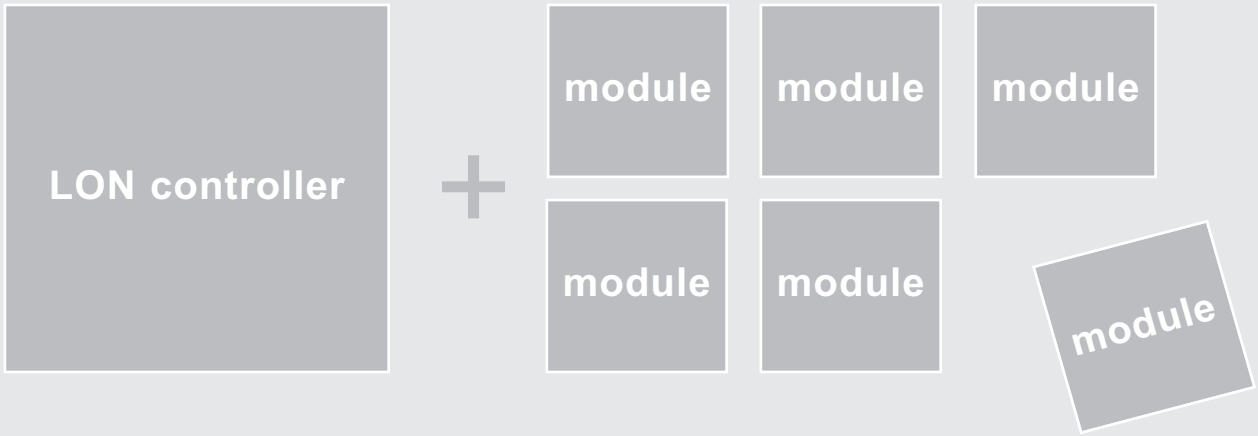


e2i

One modular system for maximum flexibility

The room automation system e2i based on LON meets all requirements for easy integration in
- architecture
- planning and
- project.

Easy projecting
Configuration and parameterizing of the installation is effected via LNS PlugIn. A pre-defined application can be selected from a library.
By combining single function blocks project-specific applications are also possible.



LON controller
with e2i interface

- Application Controller
  AC101 RLF (130 01 601)
- Basic Controller
  BC10 RLF (130 01 621)
- Basic Controller
  BC20 RLF (130 01 630)
- Room Controller
  SmartSensor

e2i module
extension for LON controllers

- room operation panel
  SmartSensor **e2i** (141 04 000,
  141 04 010, 141 04 020)
- occupancy sensor (141 01 000)
- bus coupling unit flush-mounting*
  (140 01 020 / 140 04 020)
- digital input module 4-fold
  4 x 230 V (150 01 600)
- digital input module 4-fold
  4 x 24 V (140 01 406)
- manual control module (141 01 010)
- analog input module 4-fold
  4 x (0…10 V, 0/4..20 mA)
  (140 01 410)
- radio receiver module*
  for instafunk components (140 01 430)
- Combi Sensor (140 01 300)*
- digital output module 4-fold
  4 x 230 V AC (140 01 240)
- digital output module 4-fold
  4 x 24 V AC (140 01 241)
- relay module 6-fold
  6 x 16 A (140 01 201)
- universal dim module 2-fold
  2 x 350 W / 350 VA (140 01 220)
- sunblind module 2-fold
  2 x 6 A (140 01 225)
- analog output module 4-fold
  4 x (0…10 V, 0/4..20 mA)
  (140 01 210)
- DALI module 16-fold (140 01 215)

* can not be combined with LON Basic Controller BC20 RLF (Art.-No. 130 01 630).

Making economies already in planning of a building

Our sensors and actuators have a modular structure so that any combination is possible. One unit consists of a LON controller with e2i interface and the connected e2i modules which, on demand, can be used to extend the functions.

A supplementation of the LON controller by means of hard and software modules can be effected without increasing the number of LON nodes. This saves costs and the system can easily be maintained and taken into operation.

Shortened planning time – Thanks to standardized solutions.

Many single-room solutions with the modular LON components of ELKA can be applied to comparable or similar rooms. Your advantage: The planning time is reduced considerably and costs are reduced. With the modular e2i system we offer you maximum flexibility in planning of the building, for modifications in room organisation according to your individual requirements can be realised easily.

Assignment: LON controller to e2i modules.

e2i module	type	Art.-No.	
occupancy sensor	e2i.PIR-K 360.5	141 01 000	
bus coupling unit, flush-mounted	EBA 1U EBA-G 1U	140 01 020 140 04 020	
digital input module	EDI 4.230 EDI 4.24	140 01 405 140 01 406	
manual control module	EHB 5	140 01 010	
analog input module 4-fold	EAI 4UI	140 01 410	
radio receiver modle for instafunk components	ERF100 RX	140 01 430	
Combi Sensor (wind, precipitation, brightness, DCF77)	EWS-Clima	140 01 300	
digital output module 4-fold	EDO 4.230 EDO 4.24	140 01 240 140 01 241	
relay module	ERO 6.16	140 01 201	
universal dim module	EDU 2.350	140 01 220	
sunblind module	EJA 2.6AC	140 01 225	
analog output module	EAO 4UI	140 01 210	
DALI module 16-fold	EDC 16.64	140 01 215	

LON controller with e2i interface	Applications Controller AC101 RLF 130 01 601	Basic Controller BC10 RLF 130 01 621	Basic Controller BC20 ULF 130 01 630	Room Controller RC10 ULF see page 78
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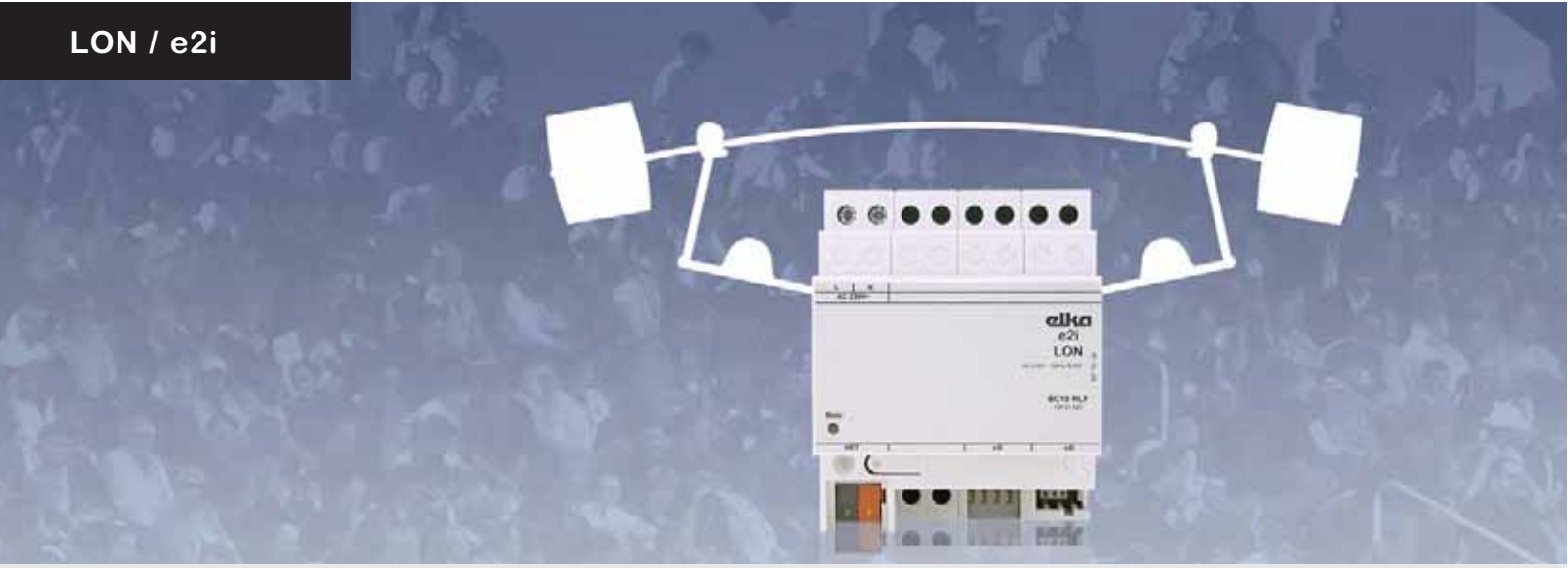


Everything fits!

ELKA LON controllers are real all-rounders when it comes to mastering critical situations in a project.

In addition to the sensor and actuator modules indicated in this chapter, many software-modules* are available for extension of the functions of the LON controllers which allow an easy adaptation to project-specific requirements:

- scene controller
- logic
- timer
- toggle
- PWM
- PID controller
- limit value
- MinMaxMeanValue
- constant light controller
- dimming/ramp

The LON controller can be completed by hardware or software modules without increasing the number of LON nodes. This saves costs, increases clarity and maintenance of the system is kept easy.

ELKA has prepared some exemplary applications (msy-files). These form an application and function pool for the creation of modular LON configurations. With their possibility of extension, these applications are the basis for growing function libraries. All exemplary applications are available as download at www.elka.de.

* The indicated software modules are available as toll free download at www.elka.de.

Application Controller
AC101 RLF

Basic Controller
BC10 RLF

Basic Controller
BC20 RLF

Room Controller
RC10 ULF

AC101 RLF	Art.-No. 130 01 601	FTT / e2i	230 V AC	PlugIn

Application Controller AC101 RLF

Functionality which is needed in 80 % of all rooms:
- 2 light circuits (switched)
- 1 temperature controller (combined heating / cooling)
- 2 digital outputs (e.g. to control a thermo-electrical valve actuator)
- 2 digital inputs for contacts (e.g. dew point sensors, window contact, broken glass detector)

The functionality can be extended by adding e2i-modules via a low-cost local bus without increasing the amount of nodes.

Software functions as scene, logic, temperature controller.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 230 V AC ± 10 %
- number of connectable e2i modules: 6 (depends on project)
- bus loads (source): 44
- digital output (Triac): 2 (230 V AC / 10 W)
- digital input: 2 x 24 V AC/DC
- relay output: 2 (NO, bi-stable)
  power: µ 16 A / 230 V AC
  filament lamp: 2500 W
  halogen lamp 230 V: 2300 W
  NV-halogen lamp: 1000 VA
  flourescent lamp to EVG:
  T8-lamp: 18 W: 24 pieces; 36 W: 16 pieces; 58 W: 10 pieces
  T5-lamp: 14 W: 12 pieces; 28 W: 18 pieces; 54 W: 10 pieces; 80 W: 5 pieces
  energy saving lamp:
  9 W: 40 pieces; 13 W: 35 pieces; 15 W: 30 pieces
  capacitive load: 105 µF/16 A
  switch-on current: 120 A / 100 ms
- assembly width: 6 TE (approx. 105 mm)
- protection type: IP 20
- mounting: DIN-rail DIN EN 50022

BC10 RLF	Art.-No. 130 01 621	FTT / e2i	230 V AC	PlugIn

Basic Controller BC10 RLF

The Basic Controller BC10 RLF is designed to connect e2i modules via a low-cost local sub-bus at only one LON node.

This multi-I/O node represents just one LON node at the network and therefore reduces the need of infrastructure devices. Moreover, the controller can be used to for example convert network variables from one type to another, store scenes or provide PID controller.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 230 V AC ± 10 %
- number of connectable e2i modules: 6 (depends on project)
- bus loads (source): 44
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

BC20 RLF	Art.-No. 130 01 630	FTT / e2i	24 V DC	PlugIn	new

Basic Controller BC20 RLF

The basic controller BC20 RLF is used to drive up to 5 e2i modules (**DIN-rail mounting devices**) via a local subbus.

This multi-I/O node represents just one LON node at the network and therefore reduces the need of infrastructure devices. Moreover, the controller can be used to for example convert network variables from one type to another, store scenes or provide PID controller.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 24 V DC ± 10 %
- current consumption (typ.): 100 mA
- number of connectable e2i modules: 6 (depends on project)
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

Available: November 2008.

modular system e2i / LON controller with e2i interface, extension module SmartSensor **e2i**

RCP 733x ULF...	Art.-No. see page 46	FTT / e2i	24 V AC / DC	PlugIn

Room Controller
(flush mounting module for Gira SmartSensor)

Room-oriented control- and operation unit consisting of a flush-mounting controller RC10 ULF and a design module with 1…4 rockers for direct control of the favorite functions. tion

A temperature sensor (PT1000 Class. A) to measure the room temperature is integrated.

Variable network interface to adapt to project-specific conditions. Further functions of the device: temperature controller, alarm system, timer.

Technical data
- network type: TP/FT (78 kb/s)
- transceiver: FTT10 A
- supply voltage: 24 V AC / DC ± 10 %
- number of connectable e2i modules: 6 (depends on project)
- number of connectable SmartSensor **e2i**: 2
- bus loads (source): 44
- installation flush-mounting: dual junction switch box
  installation hollow wall: dual junction switch box
  installation concrete: BS2-universal box
- protection type: IP 20

- dimensions
  design module SmartSensor: 92,0 x 168 x 17 mm
  controller flush-mounting: 70,9 x 142 x 30 mm

Design frames are not required for this system.

e2i.ITS30-RCP8.8LT	Art.-No. see below	e2i			

Room operation panel SmartSensor **e2i**

Room operation panel consisting of e2i-ITS30 Interface and a design module with 4 rockers for direct operation.
For operation at LON network a LON controller with e2i interface is needed (e. g. BC10 RLF or SmartSensor).

Via the backlighted display up to 12 operating functions are possible. Operation via back-lighted navigation knob by turning/pushing.

Integrated temperature sensors to measure the room temperature.

Technical data
- supply voltage:
  Via system bus of LON controller with e2i interface.
- power consumption: 12 bus loads
- installation flush-mounting: dual junction switch box
  installation hollow wall: dual junction switch box
  installation concrete: BS2-universal box
- protection type: IP 20
- dimensions
  design module SmartSensor: 92,0 x 168 x 17 mm
  e2i-ITS30 interface: 70,9 x 142 x 30 mm

Design frames are not required for this system.

description	type	material / colour	Article number
SmartSensor **e2i** (8 push-buttons / 8 LED) inclusive. design module Gira SmartSensor	e2i.ITS30-RCP8.8LT rwg	plastic / pure white glossy	141 04 000
	e2i.ITS30-RCP8.8LT an	plastic / anthracite coated	141 04 010
	e2i.ITS30-RCP8.8LT al	plastic / aluminium coated	141 04 020

Extension module SmartSensor e2i

+

+

Gira SmartSensor – LON room control panel with e2i extension modules

- Economical solution, since less LON nodes are needed.
- Use energy more efficiently: at one LON node (SmartSensor) up to two operation devices (SmartSensor e2i) can be operated.
- Economical overall solution for one room: the SmartSensor **e2i** can be operated at each ELKA LON controller with e2i interface.

LON-Contoller | e2i extension module

e2i.PIR-K 360.5	Art.-No. 141 01 000	e2i			

e2i occupancy sensor

Extension set for LON controller with e2i interface (e. g. Application Controller, Basic Controller, SmartSensor) consisting of e2i bus coupling unit and occupancy sensor.

Three operation modes:
- occupancy detection (operation mode: occupancy sensor),
- movement detection in interior rooms (operation mode: movement detector)
- alarm device.

Light depending and light independent operations can be generated.

Technical data
- supply voltage: Via system bus of LON controller with e2i interface.
- power consumption: 6 bus loads
- detection angle: 360°
- detection levels: 6
- range at installation height of 2,5 m: Ø 5 m measured at h = approx. 0,8 m Ø 8 m (floor)
- protection type: IP 20
- dimensions: Ø 104 mm x 40 mm
- installation: junction switch box Ø 60 mm
- material / colour: plastic / pure white

Complete bundle with e2i bus coupling unit (Art.-No. 140 01 020).

EBA 1U EBA-G 1U	Art.-No. 140 01 020 Art.-No. 140 04 020	e2i			

Bus coupling unit flush-mounting

Connection to the LON controller with e2i interface (system bus) via a 4-wire bus cable.

Topology: lines, trees or stars. Connection between system bus and a design module of the companies Berker, Gira or Jung via a 10-pole application interface.

EBA 1U: For design modules of Berker and Jung.
EBA-G 1U: For design modules of Gira.

Technical data
- supply voltage: Via system bus of LON controller with e2i interface.
- power consumption: (depending on the applied design module)

design module)	bus loads
push-putton device 1-fold standard	2
push-putton device 2-fold standard	2
push-putton device 3-fold standard	2
push-putton device 4-fold standard	2
Room-Climate-Module (RCM)	4
passive IR movement detector (stand.)	2
push-putton device 1-fold Gira ITS30	4
push-putton device 2-fold Gira ITS30	4
push-putton device 3-fold Gira ITS30	4
push-putton device 4-fold Gira ITS30	4

- protection type: IP 20
- dimensions: 51 x 51 x 32 mm
- installation: junction switch box Ø 60 mm

EDI 4.230	Art.-No. 140 01 405	e2i	230 V AC		

Digital input module 4 x 230 V

Connection to the LON controller with e2i interface via a system plug.

The module disposes of 4 digital inputs of which the functionality can individually be adjusted.

Technical data
- supply voltage: Via system bus of LON controller with e2i interface.
- power consumption: 2 e2i bus loads
- digital input: 4 (potential-free, externally supplied)
- nominal voltage: 230 V AC ± 10 % / 50...60 Hz
- input current: 2 mA
- protection type: IP 20
- assembly width: 2 TE (approx. 35 mm)
- mounting: DIN-rail DIN EN 50022

EDI 4.24	Art.-No. 140 01 406	e2i	24 V AC / DC

Digital input module 4 x 24 V passive

Connection to the LON controller with e2i interface via a system plug.

The module disposes of 4 passive digital inputs of which the functionality can be adjusted individually.

Technical data
- supply voltage:
  Via system bus of LON controller with e2i interface.
- power consumption: 2 e2i bus loads
- digital input: 4
  (potential-free, externally supplied)
- nominal voltage: 24 V AC / DC (7,5...26 V AC / DC), polarity protected
- input current: 2 mA
- protection type: IP 20
- assembly width: 2 TE (approx. 35 mm)
- mounting: DIN-rail DIN EN 50022

EHB 5	Art.-No. 140 01 010	e2i

Manual control module

Connection to the LON controller with e2i interface via a system plug.

Module serves as manual control level for all actuators operated at the same controller.

Functions: ON / OFF / All OFF.

Technical data
- supply voltage:
  Via system bus of LON controller with e2i interface.
- power consumption: 2 e2i bus loads
- protection type: IP 20
- assembly width: 2 TE (approx. 35 mm)
- mounting: DIN-rail DIN EN 50022

EAI 4UI	Art.-Nr. 140 01 410	e2i	24 V AC

Analog input module 4-fold

Connection to the LON controller with e2i interface via a system plug.

The module disposes of 4 analog current or voltage inputs to which can be connected standard sensors, e. g. out of the ELKA product range.

Current inputs are monitored against broken wires. Supply of sensors out of the module.

Technical data
- supply voltage:
  Via system bus of LON controller with e2i interface.
- external supply
  voltage: 24 V AC ± 15 %
  power: max. 4 VA
- power consumption: 6 e2i bus loads
- analog input: 4
- input values per channel
  voltage: 0...1 V, 0...10 V (DC), impedannce approx. 18 kΩ
  current: 0...20 mA, 4...20 mA, impedance approx. 100 Ω
- A/D-conversion: 14 bit
- supply of sensors: 24 V DC max. 100 mA
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

EWS-Clima	Art.-No. 140 01 300	e2i	24 V AC / DC

Combi Sensor

Connection to the LON controller with e2i interface (system bus) via a 4-wire system bus cable.

Measuring of wind speed, precipitation, twilight and 3-fold (dependent from direction) brightness.

Build-in-heater prevents condensation (does not prevent from freezing in frosty environment).

Supply of sensors provided by module. Connection via a fixed 6-wire cable (10 m). Integrated DCF77-receiver with rotating antenna by 90°C.

Neseccary for operation:
Power supply for Combi Sensor and heater (Art.-No.: 140 01 924).

Technical data

- supply voltage:
  Via system bus of LON controller with e2i interface.
- external supply
  voltage: 24 V AC / DC ± 15 %
  power: max. 14,4 VA
- power consumption: 14 e2i bus loads
- protection type: IP 55 in general purpose
- mounting: wall or mast mounting
- dimensions (Ø x h): 130 mm x 200 mm

sensors: 6
- wind speed: 1...40 m/s ± 0,5 m/s
  resolution: 0,1 m/s
- precipitation: 1 Bit
- brightness (3-fold): 0...110 klx ± 10 % v. E. depending on the direction (east, south, west)
  resolution: 10 bit
  spectral range: 700...1050 nm
- twilight: 0...674 lx
  resolution: 10 bit
  spectral range: 700...1050 nm
- temperature range: -40 °C...+60 °C (ice free)

ERF100 RX	Art.-Nr. 140 01 430	e2i	instafunk

Radio receiver module for instafunk components

Connection to the LON controller with e2i interface via a 4-wire system cable.

Topology: line, star, ring.

This module can integrate instafunk-transmitters into LON-networks and enables a remote control.

Available transmitters:
- digital I/O module (230 V AC or low voltage)
- push-button sensors in combination with radio-controlled wall-mounted transmitters or as flat wall transmitters
- hand-held transmitters

Technical data

- supply voltage:
  Via system bus of LON controller with e2i interface.
- power consumption: 3 bus loads
- protection type: IP 20
- dimensions: 105 x 50 x 29 mm
- radio system: instafunk
- frequency: 433,42 MHz
- modulation: ASK
  (Amplitude Shift Keying)
- number of applicable transmitters: 12+1
- transmission range for radio control:
  depending on the transmitter: 30 m / 100 m
  (free field, see instafunk-transmitters),
  reduced range in buildings
  (depending on the constructional condition)

IUS 2.230 | **Art.-No. 5 7625 000** | **instafunk** | **Purchase only at electric wholesalers.**

Universal transmitter

- requires a 230 V power supply
- typically used as alternative for a conventional switch (renovation)
- disposes of two inputs and thus can support two switches/push-button devices
- also possible to use 230 V supplied contacts (if supplied by the same phase conductor)
- transmission range: max. 100 m (free field)
- dimensions: approx. Ø 52 x 21 mm

IMS 4 | **Art.-No. 5 7611 000** | **instafunk** | **Purchase only at electric wholesalers.**

Multifunction transmitter

- battery-buffered device (Lithium cell CR2032)
- analysis of up to 4 potential-free contacts
- polling voltage is provided by the multifunction transmitterl
- transmission range: max. 100 m (Freifeld)
- dimensions: 45 x 40 x 10 mm

IHK 3.8-K
IHS 2-M | **Art.-No. 5 7402 020, 5 7403 001** | **instafunk** | **Purchase only at electric wholesalers.**

Hand-held transmitter comfort and mini

comfort
- 3 groups with 8 channels and 2 poush-buttons
- sum push-buttons
- batteries: 4 x 1,5 V Micro LR03 (AAA) (not encluded in delivery)
- transmission range: max. 100 m (free filed)
- dimensions: 192 x 53 x 22,5 mm

mini
- 2 channels with 2 push-buttons
- battery-buffered device (Lithium cell CR2032
- transmission range: max. 100 m (free field)
- dimensions: 73 x 43 x 19 mm

Art.-No. Berker: 2764, Gira: 0511 00, Jung: 40 FW | **instafunk** | **Purchase only at electric wholesalers.**

Radio-controlled wall-mounted transmitter

use of standard push-button devices of
- Berker: 1…4-fold (depending on the design)
- Gira: 1…3-fold (design TS 2)
- Jung: 1-, 2-, 4-fold (design LS990, CD500, stainless steel, aluminium and 1...4-fold in FD design)
- transmission range: max. 30 m (free field)

instafunk | **Design-dependent: see catalogues of the companies Berker, Gira and Jung.**

Flat installation on walls

No junction switch box required for installation.
- Berker: 1…4-fold (depending on the design)
- Gira: 1…3-fold (design TS2)
- Jung: 1-, 2-, 4-fold (Design LS990, CD500, stainless steel, aluminium)
- battery-buffered device (Lithium cell CR2032)
- transmission range: max. 30 m (free field)

Purchase only at electric wholesalers.

ERO 6.16	Art.-No. 140 01 201	e2i	230 V AC

Relay module

Connection to the LON controller with e2i interface via a system plug.

Especially suited for controlling lamp loads and capacitive loads (high voltage contact).

At each channel triggerable switch-on-, switch-off- and stairway-timer can be realised.

Technical data
- supply voltage:
  Via system bus of LON controller with e2i interface.
- power consumption: 5 e2i bus loads
- relay output: 6 (NO, bi-stable)
  power: µ16 A / 230 V AC
  other loads: see Application Controller, page 76
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

EDO 4.230	Art.-No. 140 01 240	e2i	230 V AC

Digital output 4-fold 230 V AC

Connection to the LON controller with e2i interface via a system plug.

The module is used to control different kind of control actuating elements like thermo-electric valve drive, magnetic valves, contactors and relays.

Technical data
- supply voltage:
  Via system bus of LON controller with e2i interface.
- external supply: 230 V AC
- power consumption: 9 e2i bus loads
- digital input (Triac): 4
- output values per channel
  min. load current: 6 mA
  max. load current: 350 mA @ 25 °C
  output voltage: 230 V AC
  max. work cycle: 1 s
  switch-on period: 100% ED
  cable length: max. 100 m
  kind of loads: thermo-electric valve driven actuators, 3-point-drives, contactors, magnetci valves
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

EDO 4.24	Art.-No. 140 01 241	e2i	24 V AC

Digital output 4-fold 24 V AC

Connection to the LON controller with e2i Interface via a system plug.

The module is used to control different kind of control actuating elements like thermo-electric valve drive, magnetic valves, contactors and relays

Technical data
- supply voltage:
  Via system bus of LON controller with e2i interface.
- external supply: 24 V AC
- power consumption: 9 e2i bus loads
- digital output (Triac): 4
- output values per channel
  min. load current: 6 mA
  max. load current: 350 mA @ 25 °C
  output voltage: 24 V AC
  max. work cycle: 1 s
  switch-on period: 100% ED
  cable length: max. 100 m
  kind of loads: thermo-electric valve driven actuators, 3-point-drives, contactors, magnetci valves
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

EDU 2.350	Art.-No. 140 01 220	e2i	230 V AC

Universal dim module
2 x 350 VA / 1 x 450 VA

Connection to the LON controller with e2i interface via a system plug.

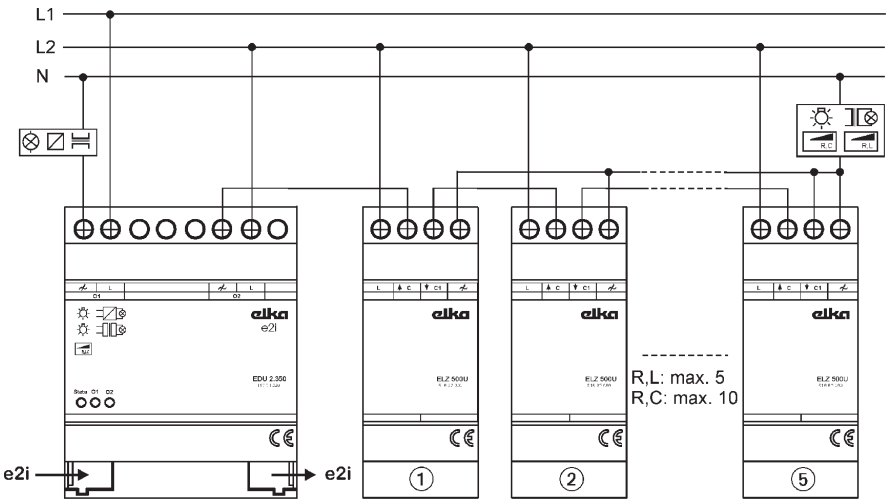
For dimming capacitive or inductive lamps (module recognizes autonomously if phase-cut on or phase-cut off has to be used).

Short-circuit proof and overload protection. No neutral-wire-connection required. Each channel can be operated at a different phase conductor.

Additional characteristics: Brightness storage, scenes, switch-on/switch-off timer, stairway light function, adjustment of dimming curve.

Technical data

- supply:
  Via system bus of LON controller with e2i interface.
- supply voltage: 230 V AC ± 10 %
- power consumption: 2 e2i bus loads
- output: 2 (1)
- power: 2 x 50…350 VA
  or 1 x 50…450 VA
  (extendable via power extension)
- cable length: max. 100 m
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022



e2i Universal-Dimmmodul
e2i Universal dim module

Universal-Leistungszusatz
Universal power extention

Universal-Leistungszusatz
Universal power extention

ELZ 500U	Art.-No. 516 62 000		230 V AC		

Universal power extension

Used to extent the output power of an e2i universal dim module EDU 2.350 (other dimmer are not admitted).

The control of the power extension is effected solely by the upstreamed dimmer. The connected loads are supplied via a common load conductor and is evenly spread to the dimmer and the load extension.

Please note:
A total load bigger than 1 kW is allowed only for professional range. Mixed loads composed of the loads specified (capacitive loads not together with inductive loads). If mixed loads are used with conventional transformers, the share of resistive loads (incandescent, 230 V halogen lamps) must not exceed 50 %.

Technical data

- supply voltage: 230 V AC
- power dissipation : 5 W
- min. load: 200 W / VA
- phase cut-on: (ohmic / capacitive)
  power output: 500 W / VA
  lockable to EDU 2.350: max. 10
- phase cut-off: (ohmic / inductive)
  power output: 350 W / VA (1-channel)
  250 W / VA (2-channel)
  lockable to EDU 2.350: max. 5
- protection type: IP 20
- assembly width: 2 TE (approx. 35 mm)
- mounting: DIN-rail DIN EN 50022

EJA 2.6AC	Art.-No. 140 01 225	e2i	230 V AC		

Sunblind module 2-fold

Connection to the LON controller with e2i interface via a system plug.

For control of actuators for sunblind controls. Internal locking of the direction of motion via contacts.

Control of one group of DC-motors is also possible.

Technical data

- supply:
  Via system bus of LON controller with e2i interface.
- power consumption: 6 e2i bus loads
- output: 2
- nominal voltage: 230 V AC ± 10 % / 50...60 Hz
- protection type: IP 20
- assembly width: 2 TE (approx. 35 mm)
- mounting: DIN-rail DIN EN 50022

EAO 4UI	Art.-No. 140 01 210	e2i	24 V AC		

Analog output module 4-fold

Connection to the LON controller with e2i interface via a system plug.

The module disposes of 4 analog current or voltage outputs.

Technical data

- supply:
  Via system bus of LON controller with e2i interface.
- external supply
  voltage: 24 V AC ± 15 %
  power: max. 4 VA
- power consumption: 8 e2i bus loads
- analog output: 4
- output values per channel
  voltage: 0...1 V, 0...10 V (DC), burden ≥ 1 kΩ
  current: 0...20 mA, 4...20 mA, burden ≤ 100 Ω
- A/D-conversion: 14 bit
- supply of sensors: 24 V DC max. 100 mA (all-in)
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

EDC 16.64	Art.-No. 140 01 215	e2i	230 V AC		new

DALI module 16-fold

Connection to the LON controller with e2i interface via a system plug.

It provides the power supply (16 V DC) for up to 64 standard DALI ballasts. 16 DALI groups are supported. DALI devices can be assigned in any order, at which one DALI ballast can only be member of one group.

Moreover, each DALI ballast can be controlled individully autonomous of the membership to a DALI group via an absolute light value. Through this, the luminairs can be grouped in further non-DALI groups. It is recommended not to assign more than two DALI ballasts in such a non DALI group.

The DALI controller disposes of scene controllers, where 16 light values can be stored for each DALI group. Furthermore, time delays (swith-on, switch-off, stair case timer, time-controlled dimming actions) can be adjusted. In addition software modules can be used in the upstreamed LON-controller with e2i interface like logics, constant light controllers, etc., which can be assigned individually to a luminair or a DALI group.

The DALI cable is monitored concerning short-circuit and interruption. If supported by the DALI ballast, more information are available:
- The actual light value (setpoint).
- Error message, if the ballast has a malfunction.
- Error message, if the lamp fails.

For start-up and maintenance the controller can be manual operated (push buttons, display). In complete operating DALI system a single DALI ballast can be exchanged without using the PlugIn.

Technical data
- supply:
  Via system bus of LON controller with e2i interface.
- external supply: 230 V AC ± 10 %
- current consumption: 40 mA

DALI
- devices / groups: 64 / 16
- supply: 16 V / 128 mA
- manual control / LC display
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

Available: October 2008.

SV230-24.xxxxDC	Art.-No. see below		230 V AC		new

Power supply 24 V DC

The power supply is used for example to provide the supply voltage for the basic controller BC20 RLF (Art.-No. 130 01 630) or the room control module RCM (Art.-No. 131 1x 5xx).

The primary controlled power supply disposes of a wide range input and is proofen agains short circuit, overload and idle running. The line drop at the cable can be compensated via a potentiometer to enlarge the output voltage up to 28 V DC. The operation mode of the power supply is shown via an LED.

Technical data
- supply voltage / type
  SV230-24.1250DC, SV230-24.2500DC: 100…240 V AC
  130...350 V DC
  SV230-24.5000DC: 230 V ± 10 %
  280…350 V DC
- rated frequency : 48…63 Hz
- output voltage: 24 V DC ± 3 %
- short-circuit and overload-proof
- protection type: IP 20
- assembly width: see below
- mounting: DIN-rail DIN EN 50022

type	output voltage @ 24 V DC	output power	ripple	assembly width	Article number
SV230-24.1250DC	1,25 A	30 W	40 mVpp	4 TE (approx. 70 mm)	140 01 915
SV230-24.2500DC	2,50 A	60 W	20 mVpp	6 TE (approx. 105 mm)	140 01 916
SV230-24.5000DC	5,00 A	120 W	20 mVpp	8 TE (approx. 140 mm)	140 01 917

SV230-24.1 AC	Art.-No. 110 01 924		230 V AC		

Power supply 24 V AC / 1 A

Power supply SV230-24.1 AC to allocate:
- LON analog modules
- LON room controller RC10 ULF (design SmartSensor)
- wind speed sensor WS10 W
- rain / precipitation sensor WS10 R
- Combi Sensor (WS e2i / EWS-Clima) and their heatings.

The product completely replaces the heating transformer WS10 HT.

Technical data
- primary voltage: 230 V AC ± 10 %
- secondary voltage: 24 V AC ± 10 %
- max. output current (typ.): 1 A
- short-circuit protection by thermo fuse
- protection type: IP 20
- assembly width: 4 TE (approx. 70 mm)
- mounting: DIN-rail DIN EN 50022

SV230-24.1500DC | **Art.-No. 140 01 910** | **230 V AC**

discontinued line

Power supply 24 V AC / DC / 1,5 A

The primary switched power supply SV230-24.1500DC disposes of a wide range input and thus can be employed worldwide.

The device produces 24 V DC / 1,5 A at his output. It has a power reserve of up to 100 % and therefore assures operation even in complex networks.

Large capacitors ensure mains buffering of more than 20 ms (120 V) or 100 ms (230 V). The flat design enables installation in every small distribution board.

Technical data

- nominal input voltage: 100...240 V AC
- input voltage range: 85...264 V AC / 110...350 V DC (at 95...110 V DC, 20 % derating)
- current consumption (at nominal values): 0,4…0,8 A
- mains buffering at nominal load:
  > 20 ms (120 V AC)
  > 100 ms (230 V AC)
- nominal output voltage (at convection cooling): 24 V DC ± 1 %
- nominal output current (upt to 55 °C): 1,5 A
- max. output current (typ.): 4,5 A
- nominal load: max. ca. 44 W
- Can be connected in parallel to increase redundancy and power.
- protection type: IP 20
- assembly width: 4 TE (approx. 71 mm)
- mounting: DIN-rail DIN EN 50022

EST1	Art.-No. 140 01 900	10 pieces per packing unit

e2i system plug

Fot the connection of an e2i DIN-rail module to another e2i DIN-rail module or to a LON controller with e2i interface.

The e2i system plug is encluded in the scope of delivery of each DIN-rail module and is also available as auxiliary equipment.

EST460E	Art.-No. 140 01 901	1 piece per packing unit

e2i system bus extension

Fot the connection of an e2i DIN-rail module to another e2i DIN-rail module or to a LON controller with e2i interface which are mounted on a DIN-rail close-by.

Technical data

- lenght: 460 mm

sensoric

Intelligent sensors reduce energy costs and protect systems and buildings against damage

All sensors, actuators and operating devices of ELKA can be linked flexibly. The modular system makes a great variety of combinations and functions possible. In combination with a LON controller with e2i interface and an e2i analog input module each of the following sensor components can be integrated into room automation.

Furthermore, a great number of sensors with 0-10 V interface for other physical values are available on the market.

Savings already during planning of a building

With the growing demands on the room climate in modern buildings, an increasing number of sensors are used in building automation. Reason for this increase are the changed legislation, the desires of the client or a better and better insulated building shell.

All sensors of ELKA have been developed especially for an economical solution of tasks regarding the room climate and can easily be integrated in the bus systems LON and KNX/EIB.

Assignment: Sensors to LON controller with e2i interface and e2i modules.

e2i module	type	Art.-No.
Combi Sensor (wind, precipitation, brightness, twilight, DCF77	EWS-Clima	140 01 300
analog input module (page 80)	EAI 4UI	140 01 410

In combination with the analog input module, the following sensors can be connected to the LON controllers.

LON controller with e2i interface + e2i analog input module		measurement category / type / Art.-No.
Applications Controller AC 101 RLF+ analog input module EAI 4UI	+ 130 01 601 140 01 410	
Basic Controller BC 10 RLF+ analog input module EAI 4UI	+ 130 01 621 140 01 410	
Basic Controller BC 20 RLF + analog input module EAI 4UI	+ 130 01 630 140 01 410	

LON controller with e2i interface	Application Controller AC101 RLF 130 01 601	Basic Controller BC10 RLF 130 01 621	Basic Controller BC20 RLF 130 01 630	Room Controller RC10 ULF see page 78
	•	•		•
	•	•	•	

brightness	twilight	rain, precipitation	temperature	wind speed	humidity, temperature	air quality	CO_2
WS 10H 110 01 302	WS 10D 110 01 303	WS 10R 110 01 204	WS 10T 110 01 305	WS 10W 110 01 306	FTR 23 RLQ.CTF-10R RLQ.TF-10R 116 22 300 110 01 602 110 01 603	LQR 13 110 01 201	RLQ.C-R RLQ.C-10R RLQ.CTF-10R 110 01 600 110 01 601 110 01 602
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•

EWS-Clima	Art.-No. 140 01 300	e2i	24 V AC/DC

Combi Sensor

Connection to the LON controller with e2i interface (system bus) via a 4-wire system bus cable.

Measuring of wind speed, precipitation, twilight and 3-fold (dependent from direction) brightness.

Build-in-heater prevents condensation (does not prevent from freezing in frosty environment).

Supply of sensors provided by module. Connection via a fixed 6-wire cable (10 m). Integrated DCF77-receiver with rotating antenna by 90°C.

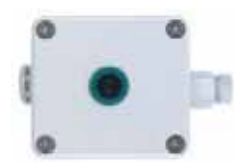
Neseccary for operation:
Power supply for Combi Sensor and heater (Art.-No.: 140 01 924).

Technical data

- supply voltage:
  Via system bus of LON controller with e2i interface.
- external supply
  voltage: 24 V AC / DC ± 15 %
  power: max. 14,4 VA
- power consumption: 14 e2i bus loads
- protection type: IP 55 in general purpose
- mounting: wall or mast mounting
- dimensions (Ø x h): 130 mm x 200 mm

sensors: 6
- wind speed: 1...40 m/s ± 0,5 m/s
  resolution: 0,1 m/s
- precipitation: 1 Bit
- brightness (3-fold): 0...110 klx ± 10 % v. E. depending on the direction (east, south, west)
  resolution: 10 bit
  spectral range: 700...1050 nm
- twilight: 0...674 lx
  resolution: 10 bit
  spectral range: 700...1050 nm
- temperature range: -40 °C...+60 °C (ice free)

WS 10H	Art.-No. 110 01 302		24 V DC



Brightness sensor

The brightness sensor is used for detection and evaluation of brightness and is suitable for outdoor mounting. In order to avoid humidity in the housing, the sensor is equipped with a pressure compensation element (climate diaphragm).

The brightness detected by a photodiode is electronically converted into a linear, analog output signal of 0…10 V.

Technical data

- supply voltage: 15...30 V DC / 5 mA
- measuring range: 0…60000 lx, linear
- signal output: 0…10 V (min. 1 kΩ burden), short-circuit protection
- accuracy: 15 % f. EV (daylight)
- protection type: IP 65
- dimensions: 64 (90 with Pg) x 58 x 35 mm

Please note:
The opening angle of the light sensor is limited to 50 °... 60 ° in order to obtain measuring values independent from the direction

WS 10D	Art.-No.110 01 303		24 V DC

Twilight sensor

The twilight sensor is used for detection and evaluation of brightness within the range of e.g. 0…255 Lux, in which a brightness sensor would be too inaccurate.

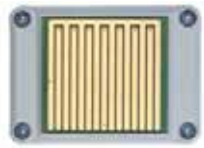
The brightness detected by a photodiode is electronically converted into a linear, analog output signal of 0…10 V.

Technical data

- supply voltage: 15...30 V DC / 5 mA
- measuring range: 0…255 lx, linear
- signal output: 0…10 V (min. 1 kΩ burden) short-circuit protection
- accuracy: 15 % f. EV (daylight)
- protection type: IP 65
- dimensions: 64 (90 with Pg) x 58 x 35 mm

Please note:
The opening angle of the light sensor is limited to 50 °... 60 ° in order to obtain measuring values independent from the direction.

WS 10R	Art.-No. 110 01 204		24 V DC		



Rain sensor

The rain sensor is used for detection and evaluation of precipitation. By means of a meander-shaped sensor the conductivity of the rainwater is evaluated. A micro-processor controls the heating and provides an output signal of 0 V or 10 V.

By means of a built-in heater (accessory Heater Transformer Art.-No. 110 01 901 necessary) the end of the precipitation can be detected almost immediately.

Technical data

• supply voltage:	15...30 V DC / 10 mA (without heating)
• signal output:	0 V dry, 10 V rain (min. 1 kΩ burden)
• protection type:	IP 65
• dimensions:	82 x 60 x 17 mm (without mounting angle)

WS 10T	Art.-No. 110 01 305		24 V DC		

Temperature sensor

The temperature sensor is used for detection and evaluation of temperature and is suitable for outdoor mounting.

In order to avoid humidity in the housing, the sensor is equipped with a pressure compensation element (climate diaphragm).

Technical data

• supply voltage:	15...30 V DC / 7 mA
• measuring range:	-30 °C up to +70 °C, linear
• accuracy:	± 0,3 K (DIN 43760)
• signal output:	0…10 V (min. 1 kΩ burden) short-circuit protection
• protection type:	IP 65
• dimensions:	64 (90 with Pg) x 58 x 35 mm

WS-MW	Art.-No. 110 01 902				

Mounting angle

For professional installation of brightness, twilight and temperature sensors.

Can be mounted on the wall and on the mast by the attached pipe clip.

Technical data

• material:	stainless steel V2A

WS 10W	Art.-No. 110 01 306		24 V DC		

Wind speed sensor

The wind sensor is used for stationary detection and evaluation of the wind speed. The rotation speed detected by a reed contact is electronically converted into an analog output signal of 0…10 V.

Build-in-heater prevents condensation (does not prevent from freezing in frosty environment).

Technical data

• supply voltage:	18…32 V DC / 12 mA (without heating)
• measuring range:	0,7…40 m/s, linear
• signal output:	0…10 V (min. 1,5 kΩ burden)
• protection type:	IP 55 in general purpose
• dimensions:	Ø 134 mm x 160 mm

Neseccary for operation:
Power supply for Combi Sensor and heater (Art.-No.: 140 01 924).

RLQ.xxx	Art.-No. 110 01 6xx		24 V DC		new

Sensor for measuring the air quality

Depending on the type, this sensor series is able to measure CO_2 concentration, relative humidity and the temperature of the environmental air.

The CO_2 measurement is equipped with an accurate two-way sensor and therefor is maintenance-free.

Types with digital outputs (24 V DC / 0,9 A) and/or analog output (0…10 V) are available.

All types are equipped with an acustic buzzer to signalise the extention of a limit value. The type with the CO_2 sensor also has a multi-colour LED at the front, which indicates the measured CO_2 concentration (traffic light function). In addition, the type with the humidity-/temperature measurement encludes a dew point calculation.

The sensors are designed to be mounted in the wall and on a standard switch box 60 mm).

Technical data

- supply voltage: 24 V DC ± 10 %
- signal output: 24 V DC / 0,9 A @ 25 °C
- analog output: 0…10 V DC (burden > 1 kΩ)
- housing: pure white
- protection type: IP 30
- dimensions: 74 x 74 x 28 mm

carbon dioxide (CO_2)
- measuring principle: non-dispersive infrared technology (NIDR)
- sensor: two-beam infrared measuring cell, maintenance-free
- measuring range: 0…2000 ppm
- analog output: 0…2000 ppm = 0…10 V

humidity
- measuring range: 0…95 % r. F
- analog output: 0…100 % r. F. = 0…10 V

temperature
- measuring range: 0…50 % °C
- analog output: 0…50 % °C = 0…10 V

Available: December 2008.

type	measured variable	output signal	display	Article number
RLQ.C-R	CO_2	signal output	LED	110 01 600
RLQ.C-10R	CO_2	signal output 0…10 V	LED	110 01 601
RLQ.CTF-10R	CO_2	signal output 0…10 V	LED	110 01 602
	relative humidity	0…10 V		
	dew point	signal output		
	temperature	0…10 V		
RLQ.TF-10R	relative humidity	0…10 V	–	110 01 603
	dew point	signal output		
	temperature	0…10 V		

FTR 23 | **Art.-No. 116 22 300** | **24 V DC**

discontinued line

Humidity/temperature sensor

For use in rooms and in air-conditioning chambers. The sensor is suitable for wall mounting.

The FTR 23 requires no external amplifier electronics, but only a power supply 24 V DC (e. g. out of an ELKA weather station).

The evaluating electronics of the system is integrated in the sensor. The FTR 23 measures the general humidity in gases.

Technical data

- supply voltage: 15…30 V DC / 5 mA
- output: min. 5 kΩ burden
- humidity: capacitive sensor
- temperature: -30 °C up to +70 °C, (0…10 V / 2 mA)
- accuracy relative humidity:
  ± 2 % (30…90 % r. F.)
  ± 3 % (10…95 % r. F.)
- accuracy temperature:
  ± 0,3 °C, DIN 43760
- protection type: IP 30
- dimensions: 74 x 74 x 28 mm

LQR 13 | **Art.-No. 110 01 201** | **24 V DC**

Air quality sensor

The air quality sensor is used for detection and evaluation of gases and vapours like e. g. tobacco smoke in closed rooms. These measured gases contribute considerably to the subjective perception of bad air quality.

By means of a mixed gas sensor the LQR 13 reacts to gases. If a preset limiting value is exceeded, the binary output is activated. Thus, corresponding actuators (ventilators, window openers, etc.) can be activated.

By means of a adjusting knob the barrier “good air / bad air” can be adjusted individually. Via a push-button the output´s forced contact operation can be activated for either 5, 10 or 15 minutes, independent of the air quality (forced ventilation).

Technical data

- supply voltage: 15…30 V DC / 50 mA
- output: min. 1 kΩ burden
  “good air”: 0 V
  “bad air”: 10 V
- protection type: IP 30
- dimensions: 74 x 74 x 28 mm

KNX / EIB

House lights down, stage lights on: The KNX/EIB DMX gateway

As particularly rapid bus system, DMX forms the technical basis for innovative light control solutions and has also proven itself in stage technology.

The instabus® KNX/EIB DMX gateway is the interface between the protocol DMX and the instabus® KNX/EIB. In combination with different KNX/EIB push-button sensors, e. g. of the companies Berker, Gira and Jung, also the DMX system can completely be integrated into building system engineering with KNX/EIB.

DMX	Art.-No. 135 16 110		230 V AC		

KNX/EIB gateway DMX

The instabus KNX/EIB gateway DMX allows coupling DMX512 systems to the instabus KNX/EIB.

The toolsoftware EIBGATE-DMX configures the gateway and connects the DMX512 devices with the KNX/EIB group addresses. The KNX/EIB telegrams (master operation) or the DMX telegrams (slave operation) are received by the gateway and are sent onto the instabus KNX/EIB or the DMX512 bus.

Thus, the connected system can monitor and list the received data and states of the corresponding bus units. Sending incorrect telegrams is not possible.

Technical data

- supply voltage: 230 V AC (+10 % / -15 %)
- interfaces: 3
  RS 232 (D-Sub 9) for parameterisation of toolsoftware EIBGATE-DMX©
  DMX 512 (screw terminal)
  KNX/EIB (terminal block)
- protection type: IP 20
- assembly width: 6 TE (approx. 105 mm)
- mounting: DIN-rail DIN EN 50022

Please note:
A DMX merger is required for DMX multimaster operation. For a bidirectional datastream two gateways are necessary.

RS232/485	Art.-No. 135 16 100		230 V AC		

KNX/EIB gateway RS232/485

The instabus® KNX/EIB gateway is an intelligent system device which allows coupling of different externel systems with RS232/485 interface to the instabus KNX/EIB.

To realize this function, the customer-neutral Gateway is directly coupled to the KNX/EIB; the external system is provided with a standard RS232 or standard RS485 interface (full- or half-duplex).

By means of the toolsoftware KNX-GATE (german/english) the gateway is configured and a link is made to the KNX/EIB objects.

The KNX-Gate toolsoftware is available as toll free download. In the KNX-Gate configuration either the transport width (TPB), the EIB interworking standard (EIS) or the KNX datapoint type (DPT) can be defined. Projectable value range is from 1 Bit to 14 Byte (ASCII-text). For rapid communication on RS232, the parameterisation can be changed from 9.600 Baud to 38.400 Baud.

KNX-Gate supports the reconstruction of programmed gateways and is fully compatible to the former EIB-Gate toolsoftware.

Technical data

- supply voltage: 230 V AC (+10 % / -15 %)
- interfaces: 3
  RS 232 (D-Sub 9)
  RS 485 (screw terminal)
  KNX/EIB (terminal block)
- KNX/EIB objects
- protection type: IP 20
- assembly width: 6 TE (approx. 105 mm)
- mounting: DIN-rail DIN EN 50022

Please note:
For protocol adaptation of the systems knowledge of an advanced programming language is necessary.

To use the KNX-Gate the framework .NET 2.0 must be installed on the system.

OEM gateways:
Adaptation to an external system on request.

Individual versions also to customer's specification

The KNX/EIB technology allows the integration of all systems in a bus system.

The components of the KNX/EIB system are sold via the leading KNX/EIB manufacturers and can be procured via the electric wholesale.

Prices and technical information can be found in the catalogues of the manufacturers or contact the electric wholesale.

visualisation and control

Minitableau MT 701 colour touch with glass and aluminium frame **new**

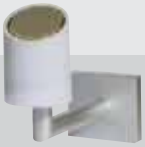
Minitableau MT 701 econ and Info Display

room operation with KNX/EIB

design Jung FD design, Jung RCD 2000, design Gira SmartSensor, room thermostat

analog technique and weather station with KNX/EIB

weather station, extension module, Combi Sensor, weatherstation compact



Terms and Conditions of Sale, Delivery and Payment with effect from 01.08.2007

§ 1 Validity

These terms and conditions are valid in so far as no agreement to the contrary has been made in writing. Any conflicting or deviating terms and conditions on the part of the customer are not binding for us even if we have not explicitly opposed them or if we have executed the delivery without objection.

§ 2 Conclusion of contract – written form

(1) Our offers are without obligation unless otherwise stated in writing. An order is not deemed to have been accepted until it has been acknowledged by us in writing.

(2) All agreements, declarations and other data are invalid unless made in writing; telephone calls must be confirmed in writing. Confirmation by telecommunication is sufficient to meet the requirement of the written form.

§ 3 Scope of deliveries and services

(1) The documents, drawings, weight specifications, samples etc. attached to our offer are only approximately decisive in so far as nothing to the contrary is derived from the offer.

(2) The right is explicitly reserved to modify the design, the layout, the material selected and the production process even after acknowledgement of the order has been dispatched, as long as the price and/or the essential performance data or the delivery time are not changed as a result and the customer can reasonably be expected to accept this.

§ 4 Delivery times

(1) The delivery time specified by us in the acknowledgement of the order is without obligation unless otherwise agreed in writing. Deliveries are explicitly subject to our obtaining delivery correctly and on time ourselves. The delivery time starts with the date on which our acknowledgement of the order is dispatched, but not before complete clarification of all issues relating to technical details.

(2) The delivery time is extended if unforeseeable and/or unavoidable and/or exceptional events occur, in particular strikes of any kind and failure on the part of our suppliers to deliver to us on time, even if these events do not occur until a delay has already set in. The customer must be notified of this in writing without delay.

(3) If shipment is delayed at the request of the customer or for other reasons beyond our control, the customer bears the resulting additional costs as well as the risk of accidental loss or of accidental deterioration of the goods to be delivered from the time when he is advised that the goods are ready for shipment.

(4) If the goods are stored at our factory (or on the premises of a person authorized by us), we are entitled to charge at least 0.5% of the price of the consignment for each month or part therefore during which the goods are stored. We reserve the right to further claims.

(5) The right to make deliveries in instalments or prematurely is reserved on principle.

(6) In the event of a delay in delivery for which we are liable, the customer is entitled to claim compensation for default at a rate of up to 3% of the value of the delivery per complete week, but not more than 15% in total. If the customer sets us a deadline appropriate to the circumstances in the event of delayed delivery and if this deadline expires without delivery being made, the customer is entitled to opt for compensation instead of fulfilment and to withdraw from the contract. The precondition for demanding compensation instead of fulfilment is that the breach of obligation for which we are responsible is not trivial.

(7) The above ruling does not apply if the contract is for delivery by a fixed date as defined by § 376 German Commercial Code (HGB). The same applies if the customer has lost interest in the transaction due to the delay.

(8) The adherence by us to the delivery time is subject to the punctual and correct fulfilment of the customer's contractual duties, in particular of his financial obligations.

§ 5 Passing of the risk, shipment, packaging

(1) The risk is passed to the customer from the time the goods leave our factory or our distribution depot respectively (Incoterms 2000), even in the case of delivery by instalments.

(2) The goods are shipped at the customer's risk and expense. If no shipping instructions are given by the customer, we select the least expensive means of transport and the least expensive route.

(3) Packaging is charged at cost price unless otherwise agreed.

(4) We reserve the right to take out a transport insurance policy. In the event of damage in transit, settlement shall be made in accordance with the terms of our insurance policy against submission of the following documents:
a) ascertainment of the facts by the transport company (e. g. forwarder's receipt),
b) original consignment note,
c) transfer of the claims arising from the damage incurred.

(5) The customer is under obligation to notify us in writing within 8 days of receipt of the consignment of any damage occurring in transit. The damaged parts are to be returned carriage paid to our Lüdenscheid factory or carriage paid to our respective distribution depot.

§ 6 Prices, terms of payment, securities

(1) Our prices are calculated ex works or ex respective distribution depot (in accordance with Incoterms 2000).

(2) Our prices are based on the cost factors relevant at the time of the offer being submitted (acknowledgement of the order). If they change between the time of the contract being concluded and shipment of the goods, we reserve the right to modify the price in reasonable proportion to the increased costs.

(3) All payments by the customer must be made with no deduction whatsoever onto our bank account in Lüdenscheid by the specified dates. Netting options are due to the customer only when claims are undisputed or have been established with legal force. In these cases the customer also has a right of retention. He furthermore has a right of retention if the right of retention is based on a defective delivery for which we are liable. In these cases the right of retention may be exercised only in proportion to the defect.

(4) If the customer's economic circumstances undergo changes capable of casting doubt on the fulfilment of the financial obligations after the date of dispatch of our acknowledgement of the order, we are entitled to withhold delivery of the goods or to demand security. If the customer fails to meet our request for the furnishing of security within a reasonable time, we are entitled to withdraw from the contract.

(5) We grant 2 % discount if payment is made within 10 days of the date of the invoice. No discount is granted on payments made in arrears or by bill of exchange. The maximum credit term is 30 days net cash.

(6) Our agents and sales representatives are not authorized to accept payments or means of payment unless they have collection authority.

(7) Bills of exchange and cheques are accepted only in payment; all bank, discount and collection charges are charged to the customer. Payments made by bill of exchange or by cheque are deemed to have been made only when the respective sum has been credited to our account.

(8) If the customer defaults in payment, we are entitled to charge default interest at a rate of 8 % above the respective base lending rate.

§ 7 Warranty for defects

(1) In the event of defects, we are liable to the extent of rectifying faults in design, production, colour, quality or other aspects of workmanship at our discretion free of charge within a reasonable period, either by eliminating the defect free of charge or by supplying a non-defective item. Any replaced parts are to be returned to us on request; to this extent the rules governing withdrawal from the contract are applicable.

(2) We accept liability for defects that have occurred and have been reported in due time in goods and parts delivered on the basis of reference samples and acceptance samples only if the delivered parts deviate from the reference samples and acceptance samples submitted to and approved by the customer. Failure on the part of the customer to carry out an adequate performance test of such a sample places the onus on the customer and releases us from liability for defects as well as from any other liability.

(3) Our liability for defects is subject to the customer having given detailed written notice of any patent defects according to § 377 German Commercial Code (HGB) within 6 days of having received the goods. Latent defects must be reported in detail in writing within the same period, calculated from the time of their becoming patent.

(4) Our liability for defects is moreover subject to the goods having been faultlessly installed, commissioned and utilized under strict observance of our operating instructions.

(5) In the event of subsequent fulfilment being a failure, the customer is entitled to assert his right to terminate the contract or to reduce the purchase price in case of substantial defects.

(6) If the damage has been caused with intent or through gross negligence, the statutory regulations shall apply. In so far as we have culpably infringed an essential contractual obligation, we are liable to pay compensation for the damage, including compensation instead of fulfilment; our liability is limited to foreseeable damage. The same applies if the customer asserts claims for compensation rather than fulfilment.

(7) The liability to pay compensation under the terms of the German Product Liability Act remains unaffected, as does the liability to pay compensation for personal injury, be it physical injury or impairment of health, including the death of a person.

(8) The limitation period is 24 months, calculated from the date of delivery.

(9) In the production of electronic modules in which components manufactured by third parties are processed, our liability for defects is limited to our assigning our claims against the respective components supplier to the customer if requested in writing to do so. Any liability on our part is precluded, however, if the customer is capable of recovering his losses from the respective components supplier.

(10) In the case of items made to order, a 10 % excess or short delivery is deemed to be contractually agreed.

§ 8 Provision of material by the customer

(1) All materials provided by the customer are supplied free of charge. Our inspection of incoming goods covers quantity and damage in transit. The components are not controlled for quality. Unless detailed documentation with respect to handling is provided by the customer, the components are handled in the same way as our own material. To this extent, the customer renounces the requirement for an inspection of incoming goods according to § 377 German Commercial Code (HGB). We take it for granted that a corresponding inspection of outgoing goods is carried out by the customer. At the same time the customer ensures that his liability insurer or product liability insurer respectively eliminates to this extent the exclusion of cover by agreement in accordance with 7.3 of the General Liability Conditions (AHB).

(2) We are not liable for damage caused directly or indirectly by the material provided by the customer; the ruling set out in § 7, point (6) remains unaffected.

(3) Any detailed technical documentation provided by the customer with respect to the material provided will be taken into account in our materials management.

§ 9 Other claims

(1) The customer is not entitled to claims for compensation other than those dealt with in § 7. This applies regardless of the legal nature of the claim asserted. Claims deriving from the German Product Liability Act remain unaffected.

(2) Any claims based on point (1) expire by limitation in the period specified in § 7, point (8).

§ 10 Retention of title

(1) We retain the title to the goods until receipt of all payments deriving from this supply contract, including any other contracts concluded between the customer and ourselves up to the time of conclusion of the present contract. The customer is entitled to resell the reserved goods in the ordinary course of business. However, he assigns to us even now all claims against the buyer or against third parties accruing to him from the resale at the level of the respective invoice value. The customer is authorized to collect these claims even after their assignment.
Our right to collect the claim ourselves remains unaffected by this. In particular we are entitled to demand that the customer notifies us of the assigned claim, its level and its liable party, provides all data necessary for the collection and surrenders the relevant documents to us without delay, and notifies the liable party in writing of the assignment.

(2) The customer is not entitled to pledge the reserved goods not to assign them by way of security to third parties.

(3) In the event of the customer's conduct being contrary to the terms of the contract, in particular in the event of default in payment, we are entitled to take possession of the goods again. Neither the repossession nor the pledging of the goods by us implies any declaration of withdrawal from the contract. The fact is rather that withdrawal is applicable only when explicitly declared by us in writing.

(4) The customer must notify us without delay of any seizures or other interventions by third parties.

(5) If the goods are resold together with other goods not belonging to us, the claim by the customer against the buyer is deemed to be assigned at the level of the delivery price agreed between ourselves and the customer.

(6) In the event of our title being lost due to incorporation, the customer assigns the claim for compensation due to him.

(7) The treatment and processing of the reserved goods by the customer are always done on our behalf.

(8) At the customer's request, we are obliged to release securities at our discretion if the realizable value of the claims to be secured exceeds our claim by more than 10 %.

§ 11 Place of performance – place of jurisdiction – applicable law – scope of validity

(1) The place of performance for all obligations arising from this contract, including any claim for termination, is Lüdenscheid.

(2) The place of jurisdiction is Lüdenscheid. This also applies to any actions on bills of exchange or cheques, in particular to claims arising from default proceedings. As long as judicial proceedings against us are not yet pending, however, we are entitled also to sue the customer at the court responsible for his domicile.

(3) Applicable law is the law of the Federal Republic of Germany (including UN Sales Convention).

(4) These Terms and Conditions of Sale, Delivery and Payment are valid only with respect to entrepreneurs as defined by § 14 German Civil Code (BGB).

Return of goods

Returning goods generates costs and thus should be an exemption in working together as partners.
If, however, there is no other way for you than to return the goods ordered, we will be prepared to take them back, under the following preconditions: The goods are faultless and in a quality to be resold, in original packaging and the return is announced to us in writing within 4 weeks after receipt of the goods, mentioning the quantity and article number. Please understand that we have to deduct 20 % for handling and examination.

After this period of time a return of the goods is possible only after individual agreement, in this case also with a deduction of 20 % for handling and examination. Special fabrications cannot be returned!
In case of returned goods, freight charges are to be borne by the customer. In general, the return of goods requires our prior agreement. Wrong deliveries and complaints are treated according to our General Conditions of Sale.

ELKA-Elektronik GmbH
Talstraße 104
D-58515 Lüdenscheid

Tel. +49 (0) 2351 176-0
Fax.+49 (0) 2351 176-1780

sales@elka.de
www.elka.de

Edition 04/2008 91000308