Langmatz

Fuse boxes EK480 & EK580

General product information

Our expertise for the networks of
today and tomorrow

www.langmatz.de

▲ Plastic granulate

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Langmatz –
Our expertise for the networks of today and tomorrow

The specialist for technical system solutions

Langmatz technical system solutions are considered the gold standard of modern infrastructure in telecommunications and energy networks. Langmatz customers include energy providers, local councils, public utilities, and telecommunication companies.

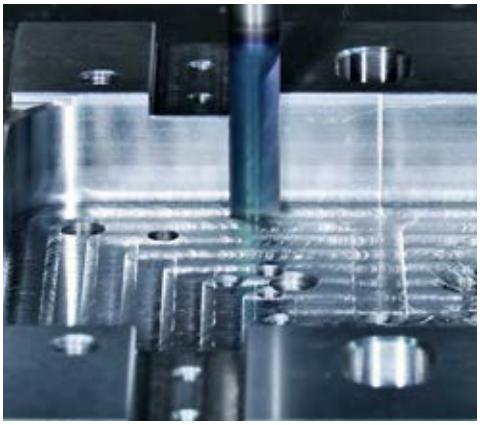
"Made in Germany" is our guiding principle. One of our greatest strengths is that we carry out all processes at our sites in Germany. From design and development supported by the latest 3D printing technology, prototype and mould making to production and installation.

Our quality management system (QMS) forms the daily basis for meeting our challenging goals. As standards are often not enough for us, we have evolved extensive testing processes and integrated special testing methods into our quality processes. These include regular checks in our material and product testing laboratory, which is equipped with a special static load hydraulic press for manholes.

The core elements of our corporate strategy include qualified employees, national supply chains, and manufacturing in Germany with state-of-the-art production facilities.

▲ Metal processing

▲ Housing production



▲ Mould and tool making

▲ Product and materials testing laboratory

Ongoing digitalisation requires technologically mature systems for the networked towns and cities of today. We are one of the most innovative companies in Germany and, as such, we are the perfect partner to implement your projects.

Your partner Langmatz –
Individual system solutions from the German Alps

A fundamental structural transformation is taking place in towns, cities and rural areas. Digitalisation, climate protection and the energy and mobility transition require new concepts for a functional urban infrastructure in which people enjoy living. This approach has given rise to the idea of the Smart City and the Smart Village – the vision of digitally networked environments. Langmatz has looked into these requirements in detail and developed pioneering solutions for energy and data connectivity, as well as transport infrastructure. In doing so, we have placed great importance on ensuring that our systems boast a high level of security, can be integrated seamlessly into the townscape, and are particularly user-friendly.

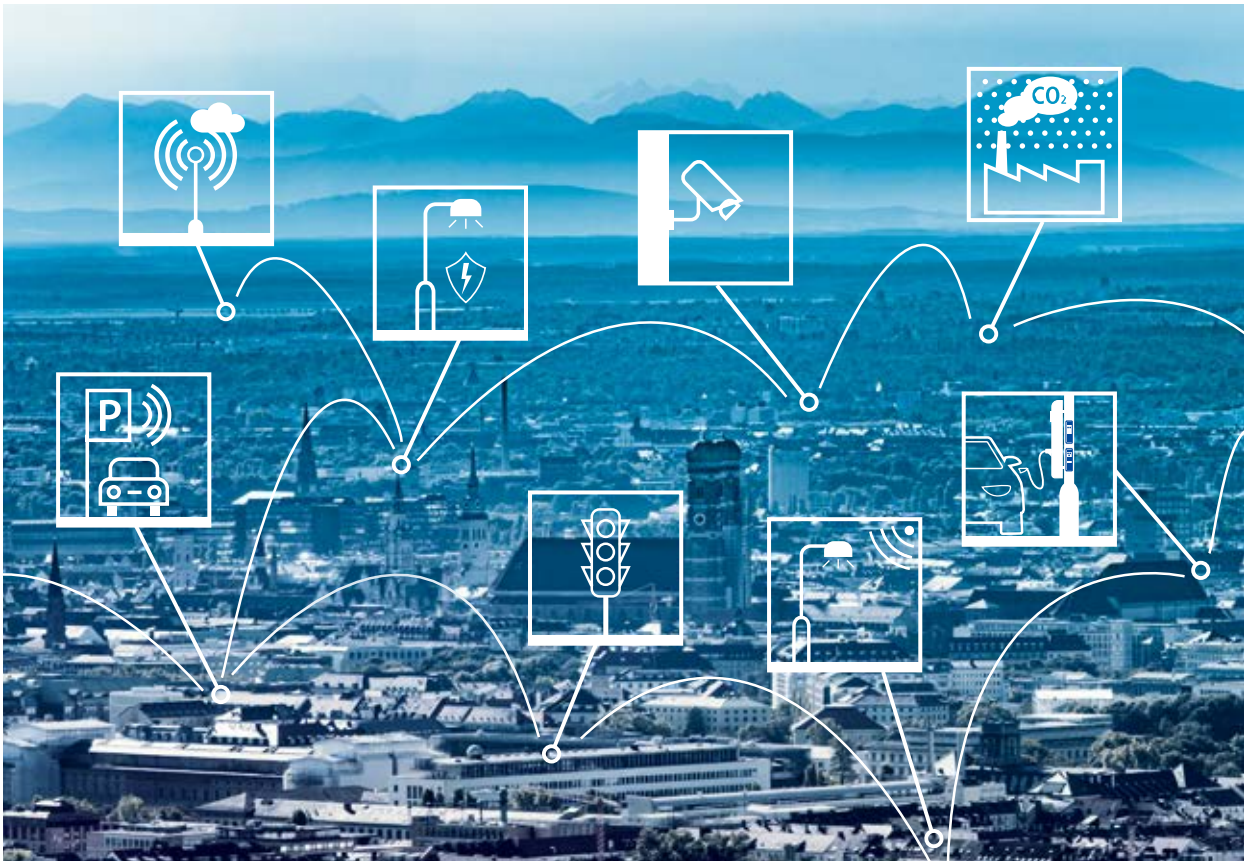
We offer a broad-based portfolio of high-quality products for the many different requirements of the cities and towns of today and tomorrow:

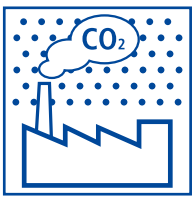
- ▲ Polycarbonate manholes
- ▲ Underground distribution systems
- ▲ Outdoor cabinets and outdoor pedestals
- ▲ Building cable & pipe entry systems
- ▲ Fuse boxes
- ▲ Pedestrian signal requesting devices
- ▲ Radio ripple control receivers

Your partner Langmatz –
For pioneering solutions

Smart City – What drives us

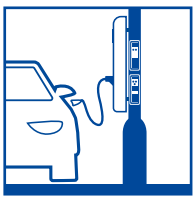
Cities, municipalities and utilities wish to improve the quality of life of citizens with new digital solutions. However, digital infrastructures and smart technologies require cabinets and housings that meet specific requirements. Together, we will find the right solution for your application.

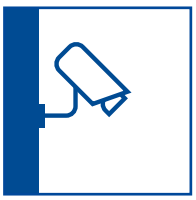




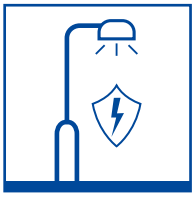
Air quality monitoring

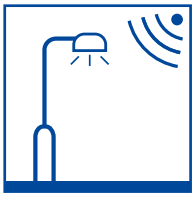
Data communication


Charging infrastructure


Public security

Intelligent parking


Lighting protection


Lighting control

Traffic control

The housings –
For standard and custom solutions

ESIPHA housings make the difference

Discover the versatile ESIPHA portfolio. Our housings provide reliable protection for your power and data transmission components against moisture, dust, vandalism and other environmental influences.

High-quality materials and durable designs are at the heart of our products, which together with ingenious functions ensure extremely smooth system operation. The uncomplicated installation of our housings further simplifies the process and contributes to efficiency.

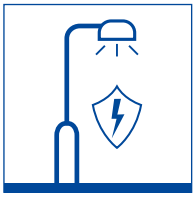
Rely on Langmatz housings for reliable protection and smooth system operation. Our solutions are designed for the highest quality and ease of use to meet your needs.

Smart housing solutions –
For your pole applications

Our housings are versatile and can be used flexibly in poles of various sizes. They reliably protect your power and data transmission components from moisture, dust, vandalism and other environmental influences. High-quality materials, durable designs and ingenious functions ensure cost-efficient operation of the installation, while easy assembly further simplifies the process.

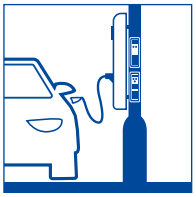
Lighting protection

To optimise the longevity and reliability of the lighting systems in use, our housings provide effective protection for both conventional and LED lighting against potentially damaging influences such as overcurrent, overvoltage and residual current. This ensures a longer service life and reliable performance of your lighting systems.



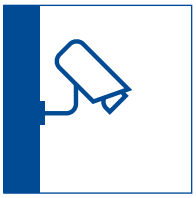
Charging infrastructure

The ESIPHA product line enables the protection and precise measurement of charging station infrastructure. Thanks to unobtrusive integration in lamp posts, they ensure invisible security that can be installed effortlessly.



Video surveillance on poles

The housings enable customised integration and protection for video surveillance technology, including secure accommodation of data connections, power supplies and converters.



More solutions –
For the smart city

Data communication on poles

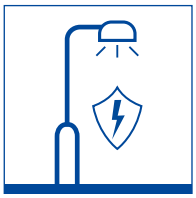
In addition to pole video monitoring, the ESIPHA housings can also be used for seamless integration of operating equipment such as power supplies, optical distribution and termination boxes and LoRaWAN modules for optimised data communication.

Lighting control

The integration of various communication devices enables precise control of lighting. This includes technologies such as radio ripple control receivers, DALI and LoRaWAN.

Supply and fuse protection for electrical operating equipment and consumers

ESIPHA housings ensure a safe power supply for various applications such as Christmas lights, marketplace sockets, power supply units and more. With the highest safety standards, we ensure continuous power supply to various consumers.



ESIPHA EK480 –
Product features of the standard and base units

The EK480 fuse box is specially designed for poles. We offer it in two models: ready-to-install as a standard variant or the base device for custom configuration. Both meet the requirements for high-quality electronics in lighting systems. Our patented design includes replaceable overvoltage protection elements. These protect against surge voltages and extend the life of the electronics.

Continuous development ensures that the EK480 fulfils the latest standards. In this way, we offer a reliable solution that combines functionality and safety.

Product features of the standard and base units

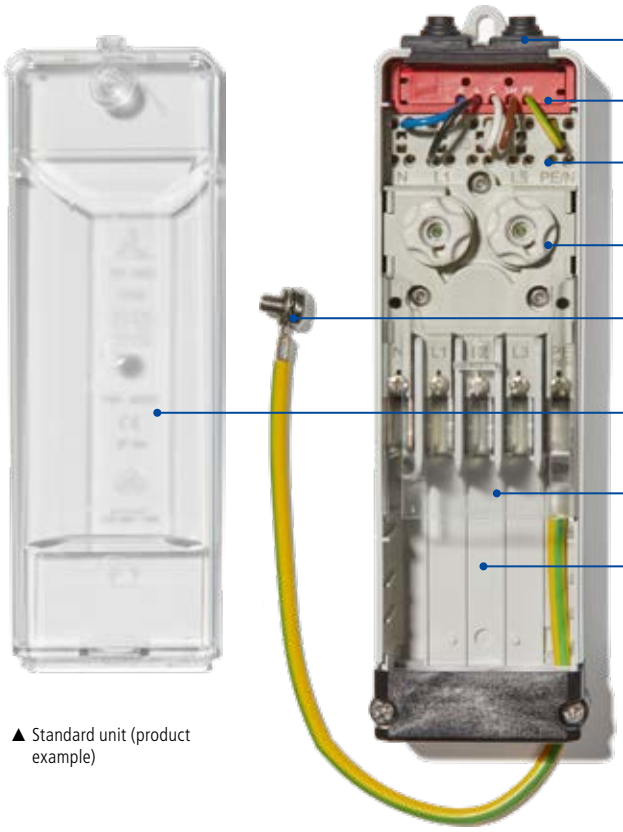
▲ Easy to install
- Spring clamp technology (plug-in technology; fast, tool-free & reliable installation of the cores to the light)
- For light connection – maintenance-free
- Optimum installation due to large terminal compartment
- Can be opened without tools – simple piercing of the sealing skin with the cable

▲ Stability and reliability
- Thanks to the sliding cover; captive, transparent protection against contact – for simplified wiring check
- Sturdy housing made of impact-resistant, solid-coloured polyamide

General technical data

Designation	ESIPHA EK480 fuse box
Dimensions	Housing length: 277 mm, fastening length: 265 mm, housing width: 80 mm, installation depth: 66 mm
Inner pole diameter from	89 mm
Housing material	Polyamide
Housing colour	RAL 7035 light grey
Design	DIN 43628, VDE 0660 Part 505
Protection rating	IP 54 according to DIN VDE 0470
Protection class	II
Cover	Transparent or grey
Clamping technology	Sliding/spring clamp technology
Cable connection	1 – 3 cables (5 x 6 – 16 mm^2) TN-S or TN-C system
Strain relief	For 1 – 3 cables (diameter 16 – 24 mm)
Outlet terminals	1 – 2 cables / 5 x 1 – 2.5 mm^2
Fuses	1 – 3 fuses D01 / E14 – max. 16 A / 400 V
Network configurations	TT / TNC / TNS

Design of standard units – Supplied ready for installation



▲ Standard unit (product example)

Stepped grommets: quick sealing of the outlet side, tool-free piercing

Option: DEHN surge protection

Outlet conductor: quick installation thanks to screwless spring clamp technology

Option: with 2 or 3 fuses (2 A, 4 A, 6 A 10 A or 16 A)

Option: grounding cable with captive M8 screw

Patented transparent sliding cover for protection against contact

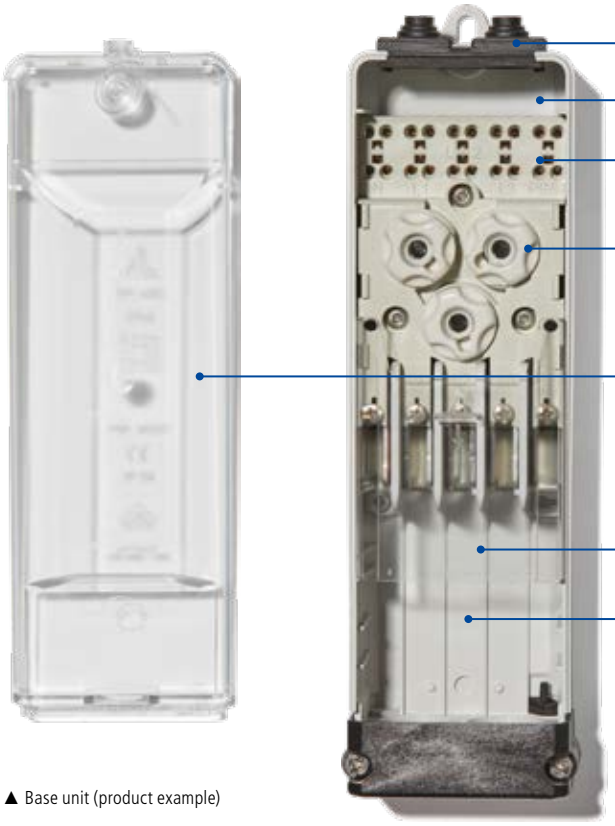
Transparent plastic cover

Large and installation-friendly inlet area with sliding wire clamps, safe with stranded wires

▲ **Following options are installed ready for installation:**

- With 2 or 3 fuses
- Grounding cable with captive M8 screw
- Overvoltage protection
- PEN bridge

Design of base units – Empty units, for custom configuration



▲ Base unit (product example)

Stepped grommets: quick sealing of the outlet side, tool-free piercing

Installation space for overvoltage protection

Outlet conductor: quick installation thanks to screwless spring clamp technology

With 2 or 3 fuses (2 A, 4 A, 6 A 10 A or 16 A)

Transparent plastic cover

Patented transparent sliding cover for protection against contact

Large and installation-friendly inlet area with sliding wire clamps, safe with stranded wires

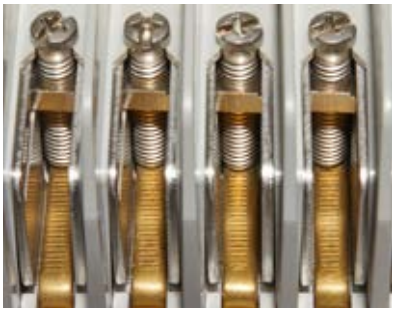
▲ **Accessories:**

- Fuses
- Grounding cable; captive M8 screw
- Overvoltage protection
- PEN bridge

Housing functions in detail

Our engineers have developed convincing solutions for functions. Thanks to many years of experience, our products are easy to install and flexible in use.

▲ Spring clamp technology



▲ Sliding wire clamps

▲ Sliding cover

Inlet and outlet flexibility

With our various solutions, it is possible to feed 1 to 3 cables in and out, of course protected against dust and splash water.

▲ Standard strain relief for 1 – 3 cables; cross-section from 7.5 – 19 mm

▲ Stepped grommets

▲ Practical example – ESIPHA EK480

ESIPHA EK480 –
Overview of standard units

Standard models with overvoltage protection

Units – No. of fuses	Description	Article number	Packaging unit
2 fuses (G2S)	For TNC network with overvoltage protection and 2x 6 A Neozed fuses, with screw caps and grounding cable with captive M8 screw	044802504	20
2 fuses (G2S)	For TNS network with overvoltage protection and 2x 6 A Neozed fuses, with screw caps and grounding cable with captive M8 screw	044802500	20
3 fuses (G3S)	For TNS network with overvoltage protection and 3x 6 A Neozed fuses, with screw caps and grounding cable with captive M8 screw	044803500	20

Standard models without overvoltage protection (assembled)

Units – No. of fuses	Fuse	PEN bridge	Grounding wire	Article number	Packaging unit
2 fuses (G2S)	4 A	No	No	044802900/004	20
		No	Yes	044802900/014	20
		Yes	No	044802900/104	20
		Yes	Yes	044802900/114	20
	6 A	No	No	044802900/006	20
		Yes	No	044802900/106	20
		No	Yes	044802900/016	20
		Yes	Yes	044802900/116	20
3 fuses (G3S)	4 A	No	No	044803900/004	20
		No	Yes	044803900/014	20
		Yes	No	044803900/104	20
		Yes	Yes	044803900/114	20
	6 A	No	No	044803900/006	20
		No	Yes	044803940	20
		Yes	No	044803900/106	20
		Yes	Yes	044803900/116	20

ESIPHA EK480 –
Overview of base units

Base units without overvoltage protection or fuses

Units – No. of fuses	Description	Article number	Packaging unit
2 fuses (G2S)	All network configurations, without overvoltage protection or fuses, with screw caps, no grounding cable	044802900	1
3 fuses (G3S)	All network configurations, without overvoltage protection or fuses, with screw caps, no grounding cable	044803900	1
3 fuses (G3S) with grey cover and cover screw	All network configurations, without overvoltage protection or fuses, with screw caps, no grounding cable, with grey cover and cover screw, cannot be combined with overvoltage protection	044803901	1

Base units with overvoltage protection and fuses

Units – No. of fuses	Description	Article number	Packaging unit
2 fuses (G2S)	For TNS network with overvoltage protection without fuses, with screw caps and grounding cable with captive M8 screw	044802910	1
3 fuses (G3S)	For TNS network with overvoltage protection without fuses, with screw caps and grounding cable with captive M8 screw	044803910	1
2 fuses (G2S)	For TT network with overvoltage protection without fuses, with screw caps	044802920	1
3 fuses (G3S)	For TT network with overvoltage protection without fuses, with screw caps	044803920	1
2 fuses (G2S)	For TNC network with overvoltage protection without fuses, with screw caps and grounding cable with captive M8 screw	044802930	1
3 fuses (G3S)	For TNC network with overvoltage protection without fuses, with screw caps and grounding cable with captive M8 screw	044803930	1

ESIPHA EK480 –
Modular principle for custom configuration

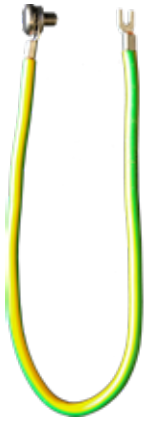
Our modular system allows you to put together the equipment you require yourself. You can select the fuse sets and accessories as separate order items.

Accessories for base units

▲ Empty unit – Base housing

▲ Accessories – Fuses

▲ Accessories – PEN bridge



▲ Accessories
– Grounding cable

ESIPHA EK580 –
Empty housing details

The EK580 housing builds on the existing features and introduces a few innovations. It is characterised by flexible expansion possibilities and offers a variety of inlet and cable outlet options. But that is not all: The EK580 housing is now also taller to fit perfectly with standard circuit breaker housings. In this way, we set new standards for adaptability and benefit-oriented innovation.

Product features – Housing

- ▲ 6 variants (3 housing lengths & 2 cover heights)
- ▲ Protection rating: IP54
- ▲ Protection class II
- ▲ Design according to standard: DIN 43628
- ▲ Suitable for pole door openings 300 x 100 mm and 400 x 100 mm
- ▲ Housing bottom with 5 mm grid for flexible positioning of top hat rails

▲ Housing size **S**
for up to 4 horizontal pitches depending on the overall height

▲ Housing size **M**
for up to 8 horizontal pitches depending on the overall height

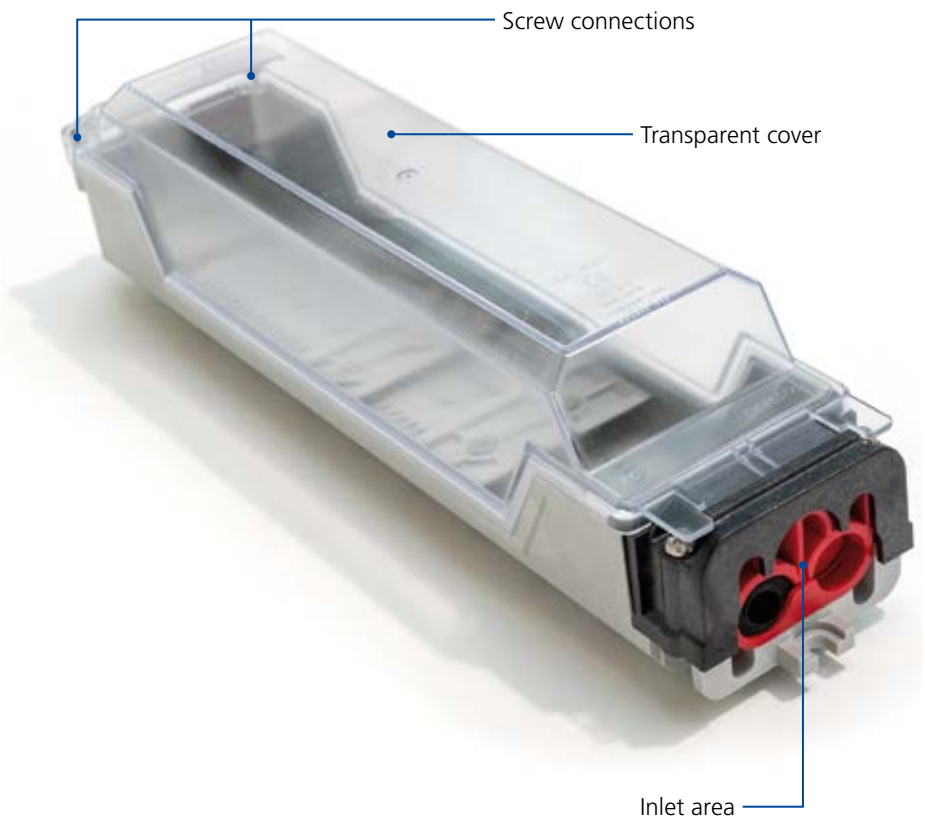
▲ Housing size L
for up to 12 horizontal pitches depending on the overall height

Housing sizes

Size	Length overall	Fastening length	Housing length	Width	Height	Pole inside ø	Horizontal pitches
S	243	232	208	82	77/82	100/106	S = up to 4
M	288	277	253	82	77/82	100/106	M = up to 8
L	368	357	333	82	77/82	100/106	L = up to 12

Housing functions in detail

Our engineers have developed convincing solutions for functions. Many years of experience and intensive communication with our customers ensure that our products are easy to install and flexible in use.



▲ Transverse top hat rail mounting

▲ Reinforcements on the back provide additional housing stability with low weight

▲ Screw connection for quick opening and secure closure of the cover (can be sealed)

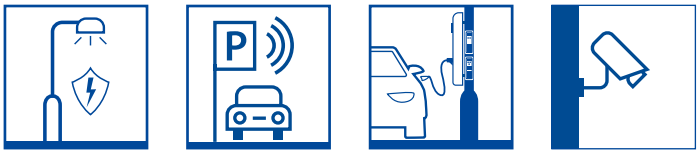
Inlet and outlet flexibility

The flexible installation space also requires flexibility in the inlet and outlet area. With our various solutions, it is possible to feed 1 to 3 cables in and out (protected against dust and splash water).

▲ Our standard strain relief for 1 – 3 cables – cross-section from 7.5 – 19 mm

▲ We also offer 2 to 4 standard openings on the outlet side (with stepped grommets and cable glands) as well as the possibility of making individual openings in the front plate.

ESIPHA EK580 –
Fuse box application examples



Applications

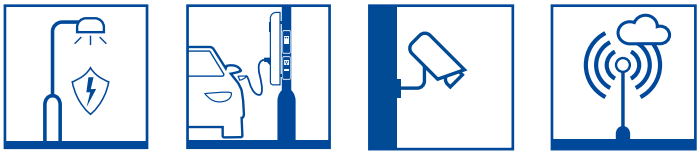
▲ EK580 for street lighting and additional RCD for fuse protection of a pole socket

Technical details

▲ Input terminal block with sliding wire clamps for connecting and looping up to three 5 x 16 m² input cables
- Optional: Input and output terminals individually adaptable

▲ Fuse protection of the light with DO1 6 A
▲ RCBO for fusing an additional pole socket (e.g. Christmas lights)
▲ Outlet terminals N and PE (standard)

▲ ESIPHA EK580 – Application example



Application examples

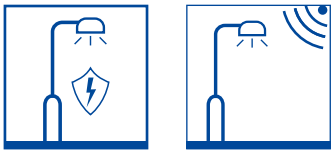
▲ EK580 for street lighting and additional consumption metering and fuse protection of a pole socket

Technical details

▲ Input terminal block with sliding wire clamps for connecting and looping up to three 5 x 16 m² input cables
- Optional: Input and output terminals individually adaptable

▲ Fuse protection of the light with DO1 6 A
▲ Outlet terminals N and PE (standard)

▲ ESIPHA EK580 – Application example



Applications

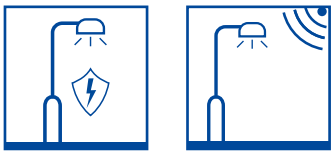
▲ EK580 for fuse protection of street lighting with overvoltage protection - 1-phase + control phase -
▲ Contacts for DALI control integrated

Technical details

▲ Input terminal block with sliding wire clamps for connecting and looping up to three 5 x 16 m² input cables
- Optional: Input and output terminals individually adaptable

▲ Fuse protection of street lighting with DO1 fuse & overvoltage protection
▲ Fuse protection of the control phase with DO1 & additional overvoltage protection
▲ Outlet terminals with push-in technology

▲ ESIPHA EK580 – Application example



Applications

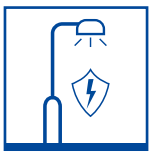
▲ EK580 with 3-phase fuse protection & additional 3-phase overvoltage protection
▲ Contacts for DALI control integrated

Technical details

▲ Input terminal block with sliding wire clamps for connecting and looping up to three 5 x 16 m² input cables
- Optional: Input and output terminals individually adaptable

▲ Fuse protection via 3-phase DO1 fuse switch disconnector
▲ 3-phase overvoltage protection
▲ Outlet terminals with push-in technology

▲ ESIPHA EK580 – Application example



Applications

▲ EK580 with fuse protection and radio ripple control receiver (RRCR) for lighting control

Technical details

▲ Input terminal block with sliding wire clamps for connecting and looping up to three 5 x 16 m^2 input cables
- Optional: adaptable input terminals

▲ Miniature fuses

▲ Radio ripple control receiver can be equipped with up to 3 mechanical relays (25 A or 40 A)

Accessories

▲ **Remote antenna – EK295**
- Mountable on top hat rail
- Steel strip mountable on pole
- Holes for wall installation

▲ Remote antenna – EK295

▲ ESIPHA EK580 – Product example

We are here for you! We will stand by you and your partners with commitment and a wide assortment of products – no matter what your requirements are. Together we will find the right ESIPHA EK580 fuse box for you.

Please do not hesitate to contact us to benefit from our experience.

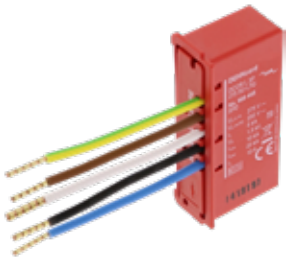
Langmatz
Our expertise for
the networks of today
and tomorrow

DEHN surge protection –
Suitable for ESIPHA EK480 / EK580

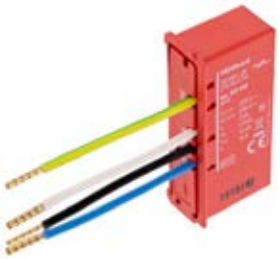
DEHNcord (EK480 and EK580)

- ▲ Two- or three-pole surge protection with monitoring device and disconnector
- ▲ Visual error display
- ▲ Versions with function to switch off the load circuit in the event of a fault & protection of the control phase
- ▲ Use in cable terminal boxes, underground systems, cable ducts and device installation boxes

Type	DEHN website
DEHNcord L 3P 275 SO LTG (with protected control phase)	
DEHNcord L 2P 275 SO LTG	
DEHNcord 3P TT 275 FM	



▲ DCOR L 3P 275 SO LTG



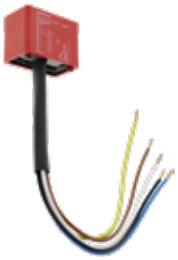
▲ DCOR L 2P 275 SO LTG

▲ DCOR 3P TT 275 FM

Alternative:

- ▲ Universal retrofit version in IP 65 design
- ▲ Wiring from outside into any cable terminal box via sheathed cable
- ▲ Compact design also for outdoor use

Type	DEHN website
DCOR L 3P 275 SO IP (with protected control phase)	
DCOR L 2P 275 SO IP	



▲ DCOR L 3P 275 SO IP

▲ DCOR L 2P 275 SO IP

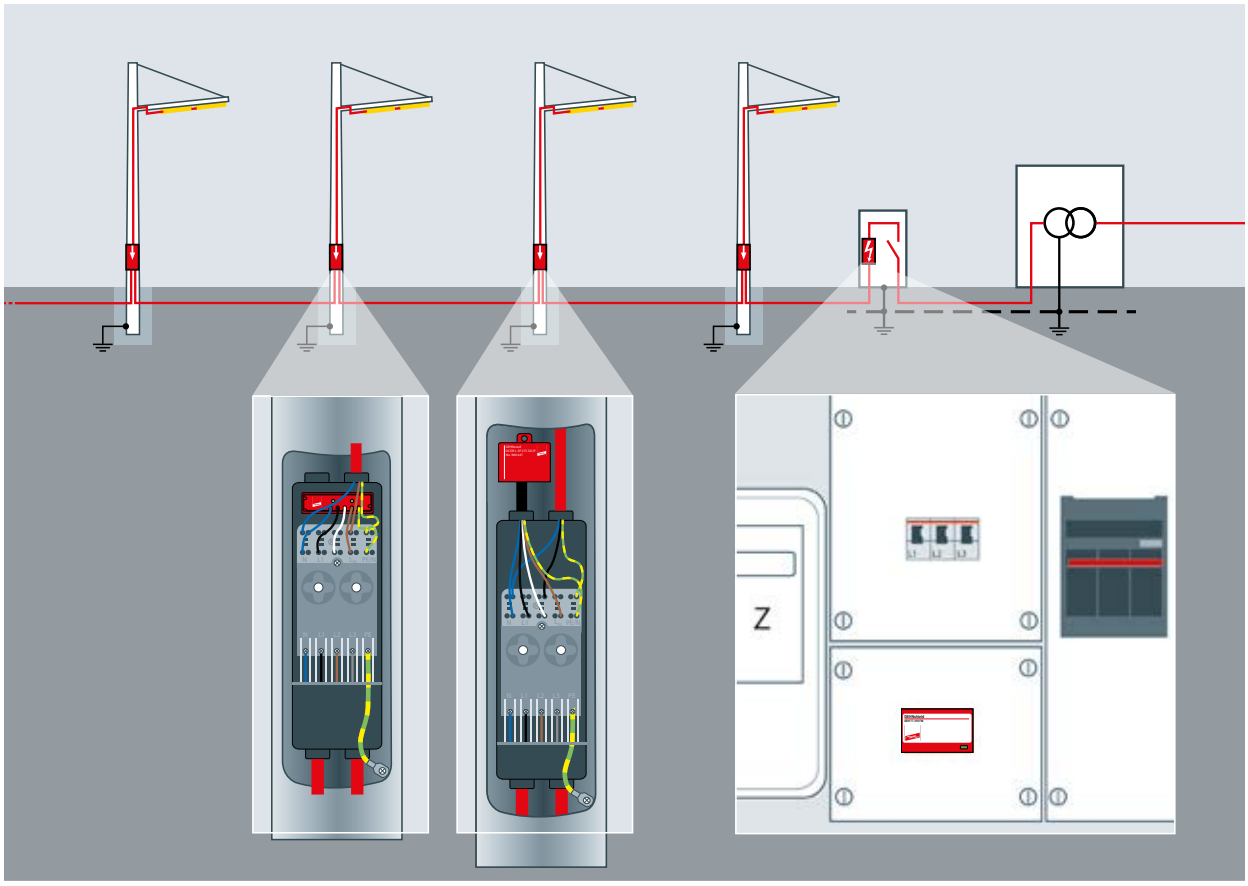
DEHNshield (for ESIPHA EK580)

- ▲ Ready-to-connect, application-optimised combined arrester type 1 + type 2 (spark gap basis)
- ▲ Space-saving spark gap technology with only 1 TE / pole enables compact design
- ▲ Meets minimum requirements for lightning current discharge capacity in accordance with VDE 0100-534
- ▲ Enables compact lightning equipotential bonding including end device protection
- ▲ Discharge capacity up to 50 kA (10 / 350 µs)
- ▲ Function / defect indication via green and red marking in the inspection window
- ▲ High follow current extinguishing capability (I_{fi} = 25 kA_{eff})

▲ DSH TT 255 FM
▲ DSH TNS 255 FM

Type	DEHN website
DSH TT 255 FM	
DSH TNS 255 FM	
DSH TNC 255 FM	

▲ DSH TNC 255 FM



▲ The surge arresters are installed in the pole fuse box and in the cable distributors of the feed

Awards

2009
German Materials Efficiency Prize
"From vehicle
roof to manhole"

2010
Environmental Prize
"From vehicle roof to manhole"

2011
Bavarian Founder Award
"Succession" category

2012
Intertraffic Innovation Award
"Charging at the light pole"

2013
WPC Innovation Award
"Product Development & Product Design" category

2015
In the Top 3 – GreenTec Awards,
"Recycling & Resources" category

2019
Inno4wood Innovation Award

2021
Top Employer German SMEs 2021

2022
F.A.Z. Institute

Notes

Our expertise for the networks of today and tomorrow

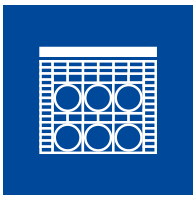
www.langmatz.de

Langmatz

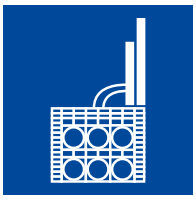
We will gladly send you further detailed product information for your planning.

Please contact your local Langmatz representative or our head office.
Data sheets and other information can be found on our website:

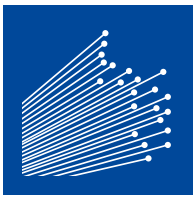
www.langmatz.de



Polycarbonate manholes



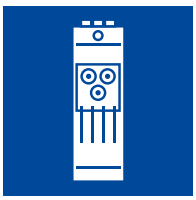
Underground distribution systems



FTTx solutions for optical fibre networks

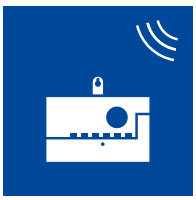
Outdoor cabinets and outdoor pedestals

Building cable & pipe entry systems



Fuse boxes

Pedestrian signal requesting devices



Radio ripple control receivers

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