KAISER Connectivity.
Solutions for professional broadband expansion.

KAISER

Future Gigabit Networks.
Advantages of fibre optic cables.

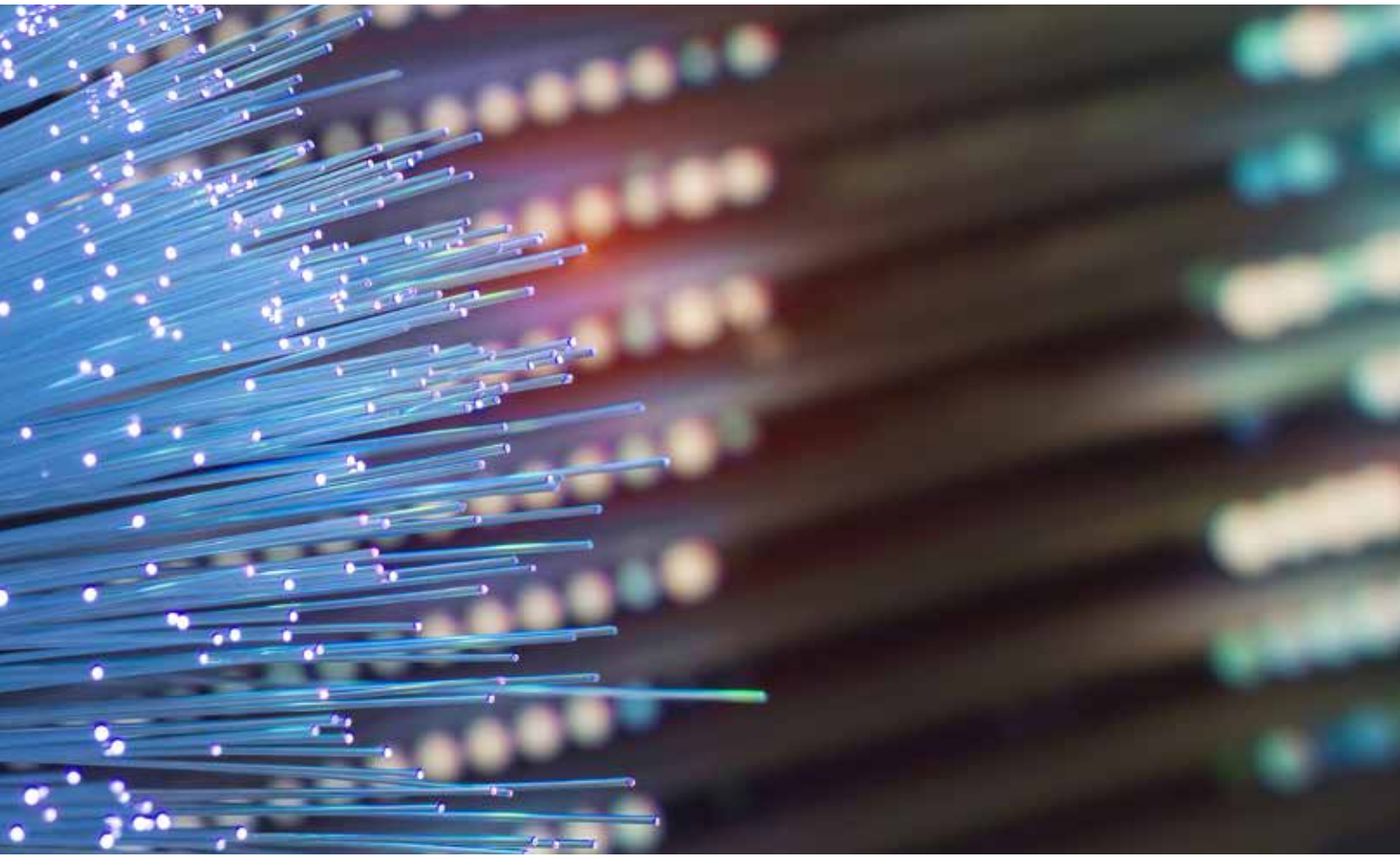
The digital transformation of the economy and society requires fast broadband networks that allow real-time transmissions at speeds in the gigabit range and secure, high-quality Internet connections. The aim is to create gigabit networks that cover as much of Germany as possible by 2025 in order to secure Germany's competitiveness and future viability. A modern infrastructure with fibre optic lines is indispensable for this. In addition to high-speed Internet, this technology can also be used to transmit HD and 4K television programs, IP telephony and streaming services such as online gaming or video telephony simultaneously and almost in real time.

The data is transmitted in the form of light signals that are insensitive to electromagnetic interference (EMI). In addition, a high level of eavesdropping security is guaranteed compared to copper-based line networks. With fibre optic lines, there is also no significant signal attenuation with increasing line length, which in classic copper lines causes the data transmission rate to drop with each metre of line. In global data traffic, this means a significant increase in the amount of data and the speed at which data can be transmitted.

Fibre optic lines enable a consistently high bandwidth in both downstream and upstream with the lowest latency times. This is already a fundamental prerequisite for applications in industry, trade and commerce, in healthcare as well as in public authorities and the education sector, and the key to new future services and business models. This is how digitization can reach its full growth potential.

The advantages of fibre optic technology at a glance

- High availability with guaranteed bandwidths up to 1 Gigabit
- Fastest Internet connections compared to classic transmission technologies
- No loss of speed due to signal attenuation over longer distances
- Insensitive to electromagnetic interference (EMC)
- High eavesdropping security compared to conventional copper lines



Requirements

Product solutions

Street distribution (network level 3)

Building distribution (network level 4)

What matters.
Connecting the "last mile".

KAISER supports network operators, planners, system integrators and general contractors in setting up an efficient and future-proof fibre optic infrastructure so that gigabit networks can be rolled out quickly. After all, only a secure and high-performance communications network can form the backbone of an economically and ecologically successful society. Especially for companies, schools and hospitals, and increasingly also for private individuals, high network transmission rates are important for smooth telecommunications and data-heavy online activities.

To this end, KAISER has developed an innovative product portfolio for street distribution (network level 3) and building distribution (network level 4), which considerably simplifies the workflows involved in fibre optic laying and installation and reduces overall costs. A complete fibre-based installation thus becomes economical for every subscriber line.

The "last mile" stands for the connection between a distribution point (DP) and a building (FTTB/Building), an apartment (FTTH/Home) or the workplace (FTTD/Desk). In doing so, the fibre optic is run directly or as close to the end user as possible in order to mitigate performance limitations of conventional copper or coaxial cables. The branching of individual fibre optic connection lines from the main line in the street distribution (network level 3) is more complex than it appears at first glance. In addition, there are various options for laying fibre optics right into the building. The crucial question for planners and network operators is how the local loop can be provided technically and economically as well as without compromising the data transmission rate.

Economical solutions from KAISER for the "last mile" in a fibre optic network include well thought-out distribution and building entry points as well as secure building distributors.

The high capital expenditure for the development of even the last few metres with a fibre optic line often led some network operators to continue to rely on a hybrid network architecture consisting of fibre optic lines up to the distribution point and copper or coaxial cable to the local loop. However, KfW subsidies for fibre-optic connections are now only available for the fibre-based part of the network.

With the intelligent solutions from KAISER, pure fibre optic networks are now becoming economical for all parties involved, offering a future-oriented perspective for the needs and requirements of the digital age in the overall economic and social interest.

Pg. 8

Underground distribution closure

The fibre optic cable is laid underground from the distribution closure through a micro pipe to the cellar.

Fibre optic cabling in FTTB/H concept.

Recommended wiring method in single-family home (SFH) and Multi-dwelling units.

Pg. 32

Building distributor

The fibre optic cables are laid from the building distributor to the respective residential units.

Pg. 26

Building entry point (BEP)

The fibre optic cable arriving from the network distributor, is processed in the BEP or building distributor; LC / APC connector and LC / APC coupling.

Building entry

Multi-section building entry, single penetration into masonry - micro-pipe installation.

Pg. 20

Mains distributor

Above ground

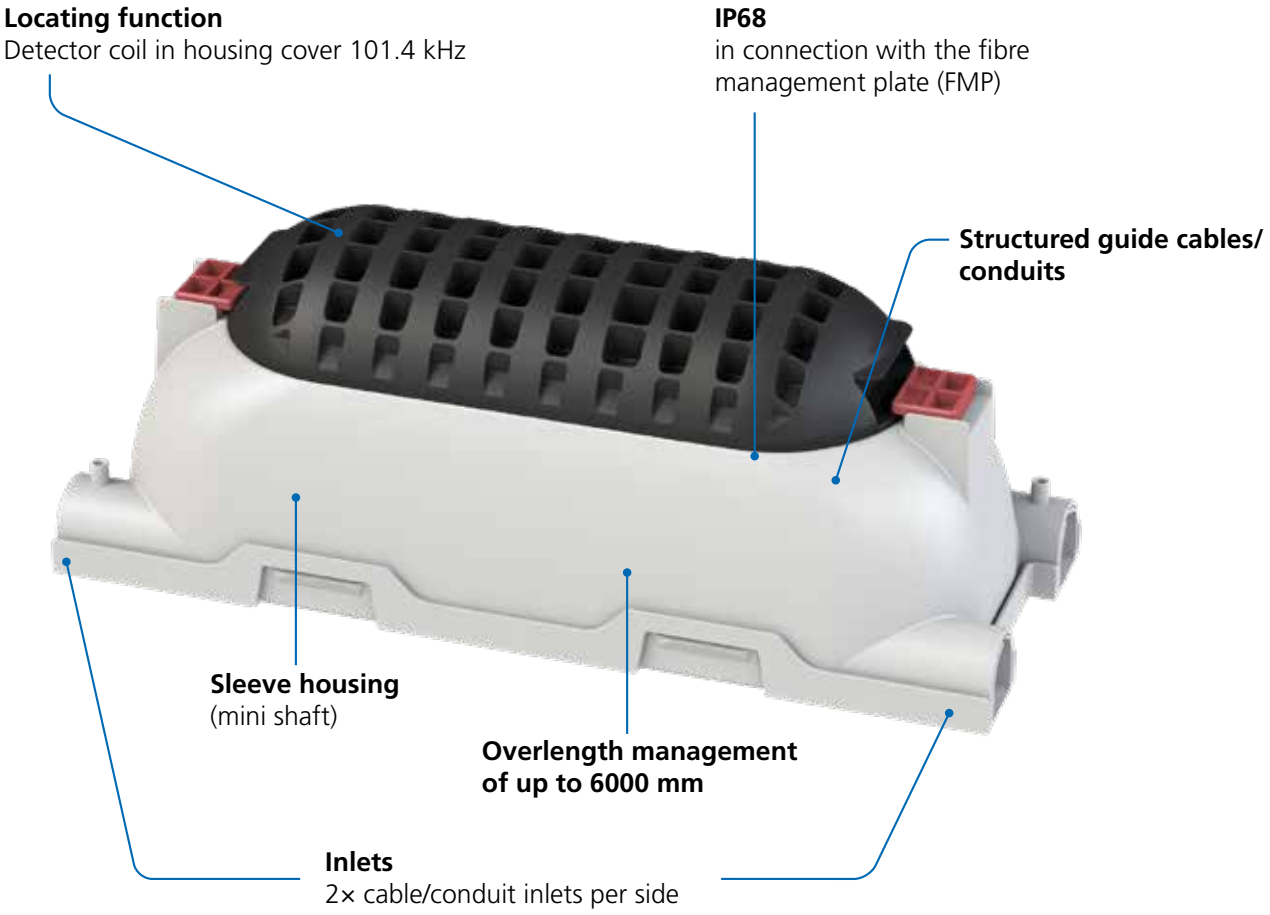
Fibre optic cable from the network distributor is laid underground through a micro conduit to the cellar.

Distribution closure
Underground for fibre management plate (FMP)

For the underground branching of cable and conduit systems, the distribution closure is used in combination with the fibre management plate (FMP) by KAISER.

The distribution closure has been designed for the greatest possible customer benefit. All fibre management plates (FMP) from KAISER are compatible and can be mounted dust- and waterproof in the housing cover. In addition, the distribution closure has an IP68 protection class and protects the fibre optic splice connections against dirt and water ingress.

- Flexibility in the management of fibre optic networks
- Plug & Play installation
- Flexibility in the FTTB/H concept



Notes

Due to the diving bell principle, the splice connections in the fibre management plate (FMP) are protected against external influences in an air bubble - the diving bell principle. A detector coil installed in the housing cover simplifies subsequent location of the distribution closure (frequency 101.4 kHz).

The distribution closure has 4 inlets/outlets, which massively simplifies laying and branching of the cable and conduit systems, since bending radii and cable paths are maintained. In addition, the blowing of the glass fibre into the micro-duct system is optimized.

Distribution closure, housing underground for FMP

· Scope of delivery: distribution closure, sand seal

Network level	3
Installation type	Underground
Protection class	IP68
Overlength management	max. 6,000 mm
Chemical resistance	Yes
Vibration resistance	Yes
Impact resistance	IK07
Halogen-free	Yes
Number of cable / conduit inlets	4
Cable / conduit inlet features	Sandproof
Cable / conduit inlet bending strength	Yes
Cable / conduit inlet Ø	38× 7.0 mm, 2×14 / 10 mm buried cables / conduit bundle
Housing closure	Locking
Locate	101.4 kHz detection coil in cover
Standard	EN 124-1:2015 Group 2
Ground cover (min.)	300 mm
Max. installation depth	1,800 mm
Temperature range storage	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C
Length ×Width ×Height	900 × 350 × 300 mm
Colour	Black / Grey
Art. No.	**AT29030**

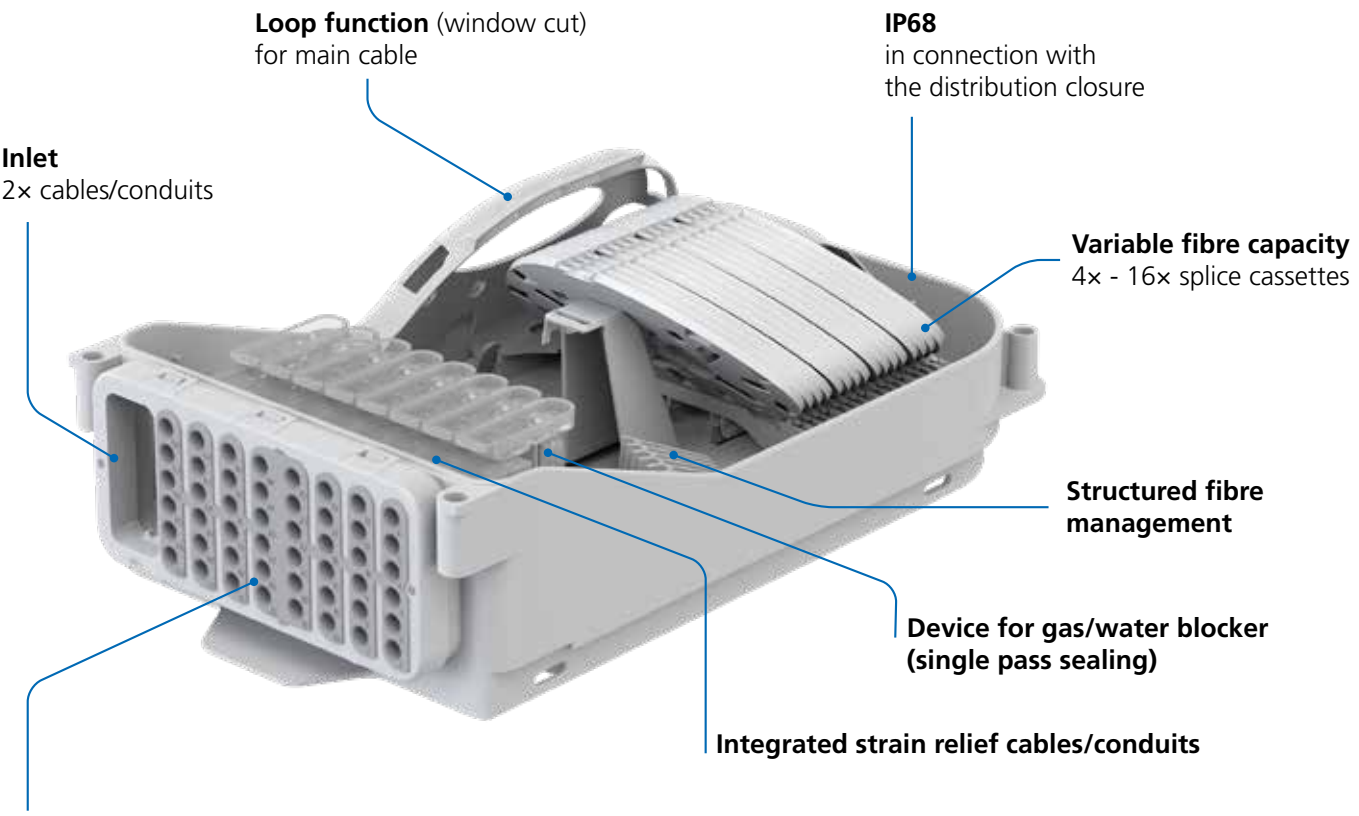
Underground distribution closure

Underground branching of cable and duct systems for the structured routing of cables and ducts with overlength management of up to 6 meters.

Fibre management plate (FMP)

The innovative product design of the fibre management plate is suitable for installation in the underground distribution point distribution closure (AT29030) and enables simple, fast and therefore time-saving assembly.

- Flexibility in the management of fibre optic networks
- Plug & Play installation
- Flexibility in the FTTX concept



Notes

The cable / conduit insertion of the fibre management plate is designed for the most common cable and micro-conduit diameters on the market.

In addition, the fibre management plate can be used for cascading. For cascading, the variant with window cutout (WC=window cut) is used.

The sheath of the main cable is removed to the specified length, the loose wires are placed in the overlength tray of the fibre management plate and returned. The fibres that are spliced to customer cables in the fibre management plate can be stored in the splice cassette.

Fibre management plate (FMP), CSS, 192 fibres

· Scope of delivery: FMP including splice cassettes, 4× mounting screws, sealing material, moisture absorber

Network level	3	3	3
Installation type	Underground	Underground	Underground
Protection class (in supply sleeve)	IP68	IP68	IP68
Halogen-free	Yes	Yes	Yes
Number of fibres	**192**	**192**	**192**
Number of splice cassettes	16	16	16
Splice cassettes height	4 mm	4 mm	4 mm
Loop function (window cut)	**Yes**	**No**	**Yes**
Loop length (splice cassette)	300 mm	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	2	2	2
Cable / conduit inlet Ø	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm
Number of cable / conduit breakout openings	**No**	**1**	**2**
Cable / conduit breakout opening Ø	**No**	**M12/16/20/25**	**M20/M25**
Number of cable / conduit outlets	**48**	**48**	**24**
Cable / conduit outlet Ø	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	380×220×130 mm	380×220×130 mm	380×220×130 mm
Colour	Transparent / Grey	Transparent / Grey	Transparent / Grey
Art. No.	**AT29351**	**AT29344**	**AT29333**

Fibre management plate (FMP), CSS, 96 fibres

· Scope of delivery: FMP including splice cassettes, 4× mounting screws, sealing material, moisture absorber

Network level	3	3	3	3
Installation type	Underground	Underground	Underground	Underground
Protection class (in supply sleeve)	IP68	IP68	IP68	IP68
Halogen-free	Yes	Yes	Yes	Yes
Number of fibres	**96**	**96**	**96**	**96**
Number of splice cassettes	8	8	8	8
Splice cassette height	**8 mm**	**8 mm**	**4 mm**	**4 mm**
Loop function (window cut)	**Yes**	**No**	**Yes**	**No**
Loop length (splice cassette)	300 mm	300 mm	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	2	2	2	2
Cable / conduit inlet Ø	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm
Number of cable / conduit breakout openings	**No**	**1**	**No**	**1**
Cable / conduit breakout opening Ø	**No**	**M12/16/20/25**	**No**	**M12/16/20/25**
Number of cable / conduit outlets	**48**	**48**	**48**	**48**
Cable / conduit outlet Ø	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	380×220×130 mm	380×220×130 mm	380×220×130 mm	380×220×130 mm
Colour	Transparent / Grey	Transparent / Grey	Transparent / Grey	Transparent / Grey
Art. No.	**AT29354**	**AT29342**	**AT29353**	**AT29343**

Fibre management plate (FMP), HS, 96 / 48 fibres

· Scope of delivery: FMP including splice cassettes, 4× mounting screws, sealing material, moisture absorber




Network level	3	3	3	3
Installation type	Underground	Underground	Underground	Underground
Protection class (in supply sleeve)	IP68	IP68	IP68	IP68
Halogen-free	Yes	Yes	Yes	Yes
Number of fibres	**96**	**96**	**96**	**48**
Number of splice cassettes	**8**	**8**	**8**	**4**
Splice cassette height	8 mm	8 mm	8 mm	8 mm
Loop function (window cut)	**Yes**	**No**	**Yes**	**Yes**
Loop length (splice cassette)	300 mm	300 mm	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm	30 mm
Splice protector holder	Heat shrink tubing	Heat shrink tubing	Heat shrink tubing	Heat shrink tubing
Number of cable / conduit inlets	2	2	2	2
Cable / conduit inlet Ø	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm
Number of cable / conduit breakout openings	**No**	**1**	**2**	**2**
Cable / conduit breakout opening Ø	No	M12/16/20/25	M20/M25	M20/M25
Number of cable / conduit outlets	**48**	**48**	**24**	**24**
Cable / conduit outlet Ø	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	380×220×130 mm	380×220×130 mm	380×220×130 mm	380×220×130 mm
Colour	Transparent / Grey	Transparent / Grey	Transparent / Grey	Transparent / Grey
Art. No.	**AT29352**	**AT29341**	**AT29332**	**AT29331**

Cover plug cable/ conduit outlet for fibre management plate (FMP)

· Scope of delivery: cover plug

Network level	3 / 4
Suitable for	FMP / FMB
Protection class	IP68
Halogen-free	Yes
Cable / conduit outlet Ø	3.0 - 8.0 mm
Temperature range storage	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C
Colour	Black
Art. No.	**AT29397**

Sealing ring for fibre management plate (FMP)

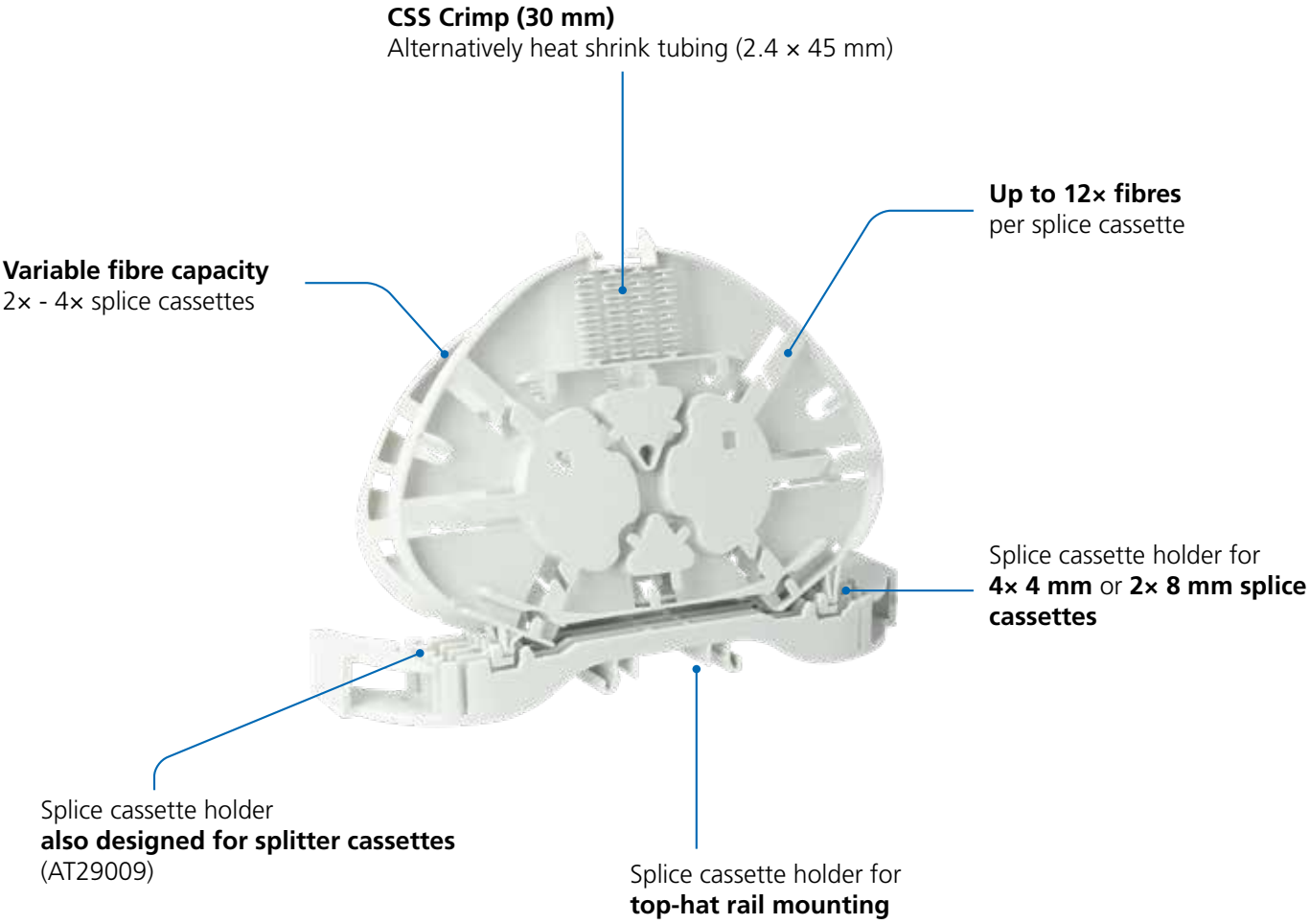
· Scope of delivery: sealing ring

Network level	3
Suitable for	FMP
Protection class	IP68
Halogen-free	Yes
Temperature range storage	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C
Colour	Grey
Art. No.	**AT29040**

Splice cassette

The splice cassette slot is modular and allows insertion of 4 mm and 8 mm splice cassettes. The splice cassettes can be mounted in all fibre management plates.

The cassettes are designed for either CSS crimp splice protection / mini shrink tubing (30 mm) or shrink tubing (45 mm). The portfolio also includes a cassette cover with laser warning and a specially developed splitter cassette for installing additional passive splitters in the fibre management plates in PON networks.



Splice cassette with holder

· Scope of delivery: cassette, holder



Network level	3 / 4	3 / 4	3 / 4
Suitable for	Fibre management plate (FMP)	Fibre management plate (FMP)	Fibre management plate (FMP)
Number of fibres	**24**	**48**	**24**
Type	Splice	Splice	Splice
Number of splice cassettes	**2**	**4**	**2**
Splice cassettes height	**8 mm**	**4 mm**	**8 mm**
Splice protector holder	**CSS** Crimp	**CSS** Crimp	**HS** Heat shrink tubing
Loop length (splice cassette)	300 mm	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm
Halogen-free	Yes	Yes	Yes
Mounting options	Top-hat rail, combination rail, C-rail	Top-hat rail, combination rail, C-rail	Top-hat rail, combination rail, C-rail
Temperature range storage	-10 °C / +50 °C	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	150 × 110 × 8 mm	150 × 110 × 4 mm	150 × 110 × 8 mm
Colour	Grey	Grey	Grey
Art. No.	**AT29008**	**AT29004**	**AT29012**

Splitter cassette, 8 mm

· Scope of delivery: splitter cassette

Type	Splitter
Number of splice cassettes	1
Splice cassettes height	8 mm
Loop length (splice cassette)	300 mm
Bending radius (splice cassette)	30 mm
Halogen-free	Yes
Mounting options	On splice cassettes holder
Temperature range storage	-10 °C / +50 °C
Temperature range installation	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C
Length × Width × Height	150 × 110 × 8 mm
Storage space splitter dimensions	60 × 18 × 4 mm
Colour	Grey
Art. No.	**AT29009**

Cover for splice cassette

· Scope of delivery: 1× cover 2 mm

End stops for splice cassettes bracket

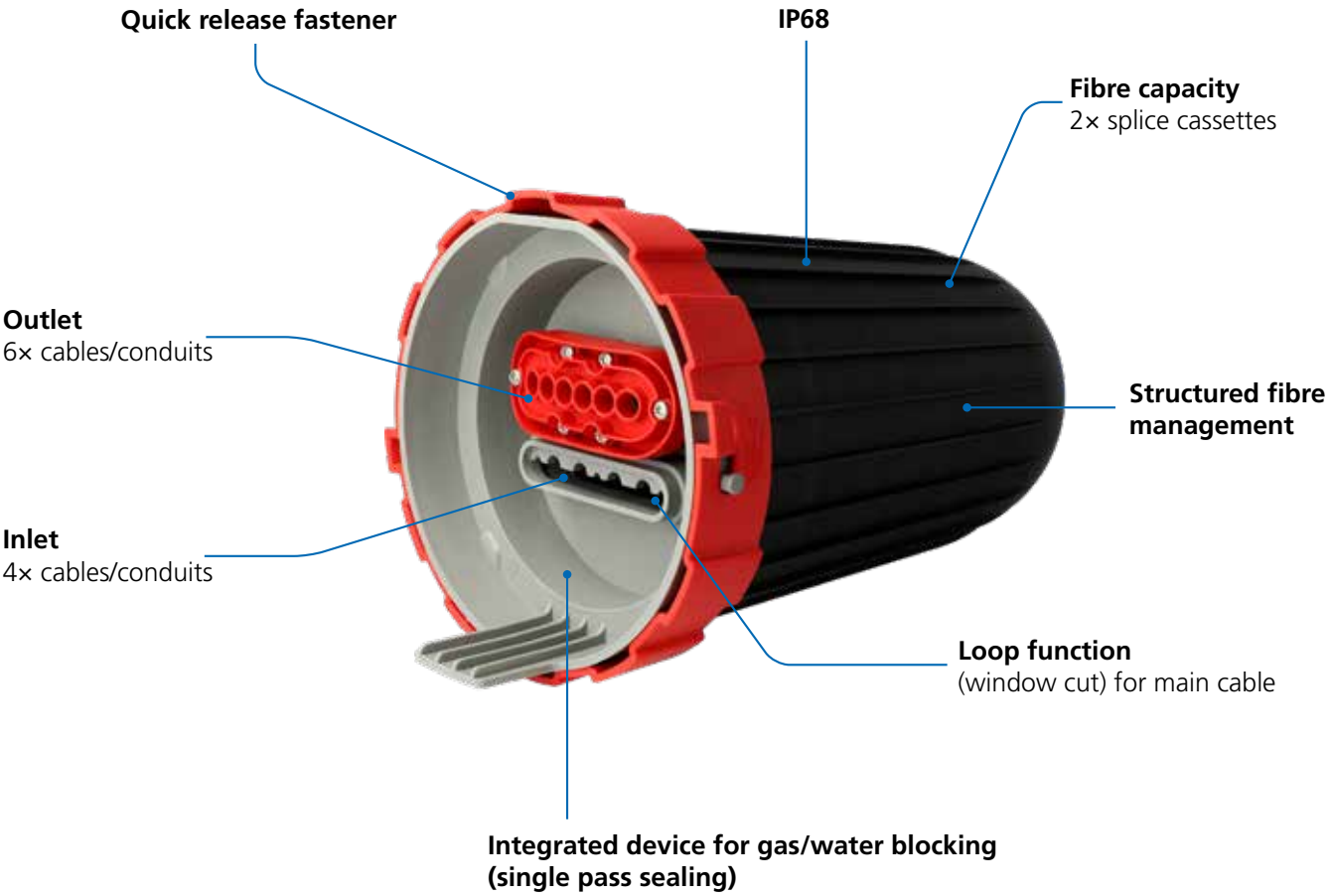
· Scope of delivery: 2× end stops

Type	**Cover**	**End stops**
Halogen-free	Yes	Yes
Mounting options	**On universal splice cassette**	**Standard mounting rail (35.0 - 7.5 mm)**
Temperature range storage	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C
Colour	Grey	Grey
Art. No.	**AT29003**	**AT29005**

Midi fibre dome (MFD)

The midi fibre dome (MFD) can be buried and is suitable for connecting or extending FTTB/H networks in rural expansion areas where few subscriber lines are connected over long distances compared to the urban environment.

- Easy and quick installation
- Universally applicable
- Ordered assembly sequence



Notes

The midi fibre dome (MFD) is suitable for cable and conduit systems. A total of up to 6× customer connections per midi fibre dome (MFD) can be implemented. The window cut-out offers the option of cascading, the main cable can thus be routed further from the midi fibre dome (MFD) to the next branch point. Furthermore, the midi fibre dome (MFD) is equipped with universal watertight cable / conduit inlets and integrated strain relief. The midi fibre dome (MFD) has an IP68 rating and is protected against dust and water ingress.

Midi fibre dome (MFD)

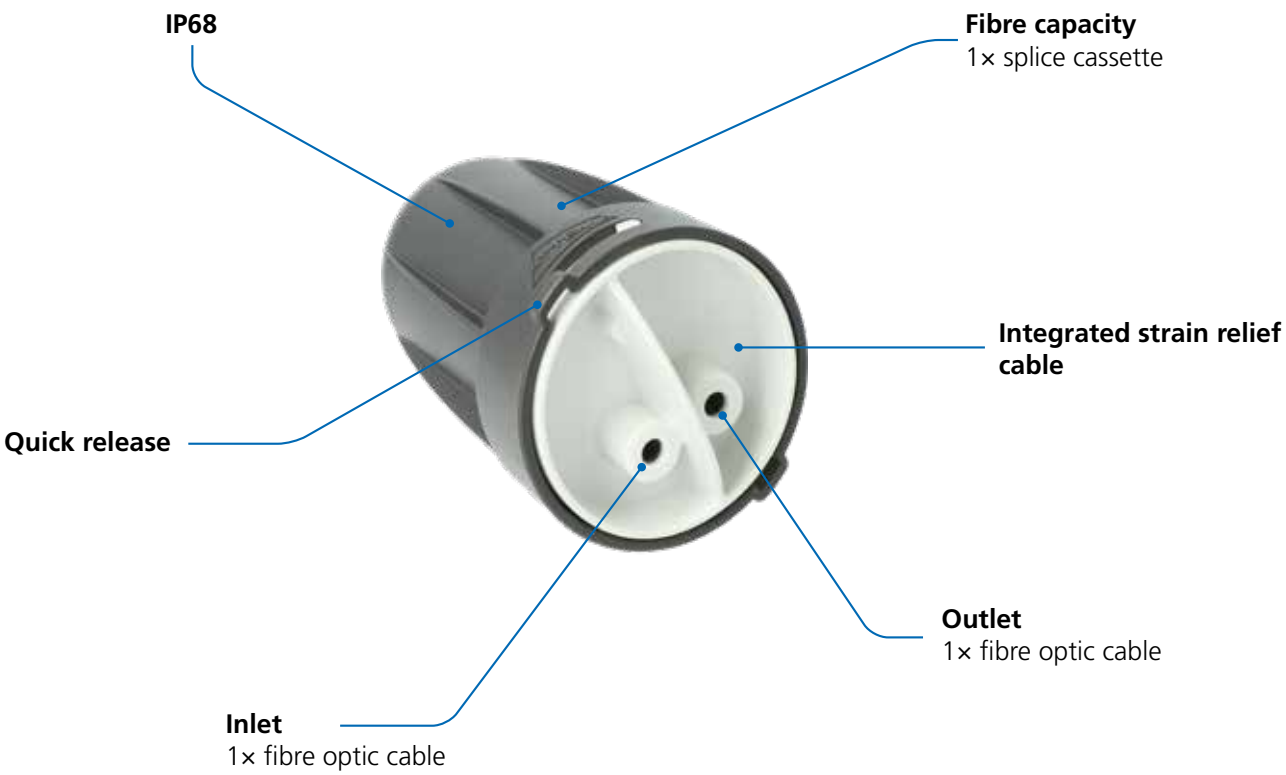
· Scope of delivery: midi fibre dome, sealing material

Network level	3	3
Installation type	Underground	Underground
Protection class	IP68	IP68
Chemical resistance	Yes	Yes
Vibration resistance	Yes	Yes
Impact resistance	IK09	IK09
Halogen-free	Yes	Yes
Number of fibres per splice cassette	12	12
Number of splice cassettes	2	2
Loop function (window cut)	Yes	Yes
Loop length (splice cassette)	300 mm	300 mm
Bending radius (splice cassette)	22.5 mm	22.5 mm
Splice protector holder	**CSS crimp / Mini heat shrink tubing**	**Heat shrink tubing**
Cable / conduit inlet features	Sand / waterproof	Sand / waterproof
Cable / conduit inlet bending strength	Yes	Yes
Number of cable / conduit inlets	4	4
Cable / conduit inlet Ø	2.5 - 8.0 mm	2.5 - 8.0 mm
Number of cable / conduit outlets	6	6
Cable / conduit outlet Ø	2.5 - 8.0 mm	2.5 - 8.0 mm
Housing closure	Rotary lock	Rotary lock
Standard	EN 124-1:2015 Group 2	EN 124-1:2015 Group 2
Temperature range storage	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range installation	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width	360 × 190 mm	360 × 190 mm
Colour	Black / Red	Black / Red
Art. No.	**AT29293**	**AT29292**

Compact fibre dome (CFD)

The compact fibre dome is a proven and robust solution for conveniently and quickly connecting, extending or repairing directly buried fibre optic connection/customer cables both above and below ground. For above-ground installation, the mounting bracket can be used for surface mounted installation.

- Easy and quick installation
- Universally applicable
- Ordered assembly sequence



Compact fibre dome (CFD)

· Scope of delivery: compact fibre dome

Network level	3	3	3
Installation type	Underground / Above ground	Underground / Above ground	Underground / Above ground
Protection class	IP68	IP68	IP68
Chemical resistance	Yes	Yes	Yes
Vibration resistance	Yes	Yes	Yes
Impact resistance	IK09	IK09	IK09
Halogen-free	Yes	Yes	Yes
Version	**Cable, CSS, HS**	**Conduit, HS**	**Mast, CSS, HS**
Number of fibres	**2**	**6**	**2**
Number of splice cassettes	1	1	1
Loop length (splice cassette)	230 mm	230 mm	230 mm
Bending radius (splice cassette)	22.5 mm	22.5 mm	22.5 mm
Splice protector holder	**CSS crimp / Mini heat shrink tubing**	**Heat shrink tubing**	**CSS crimp / Mini heat shrink tubing**
Number of cable / conduit inlets	2	2	2
Cable / conduit inlet features	Sand / waterproof	Sand / waterproof	Sand / waterproof
Cable / conduit inlet bending strength	Yes	Yes	Yes
Cable / conduit inlet Ø	**5.0 - 6.5 mm**	**7.0 - 8.0 mm**	**3.0 - 6.5 mm**
Housing closure	Rotary lock	Rotary lock	Rotary lock
Standard	EN 124-1:2015 Group 2	EN 124-1:2015 Group 2	EN 124-1:2015 Group 2
Temperature range storage	-10 °C / +50 °C	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range installation	-10 °C / +50 °C	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width	155 × 85 mm	155 × 85 mm	155 × 85 mm
Colour	Black / White	Black / Grey	Black / Black
Art. No.	**AT29017**	**AT29018**	**AT29020**

Mounting bracket for compact fibre dome (CFD)

· Scope of delivery: Mounting bracket

Network level	3
Installation type	Surface-mounted
UV resistance	Yes
Length × Width × Height	175 × 90 × 85 mm
Colour	Black
Art. No.	**AT29027**

Mains distributor

The mains distributor by KAISER is suitable for installation in streets or street intersections. The advantage over underground distribution points is quick and easy access. Subsequent splicing, cable or conduit laying can be carried out without great effort.

The fibre management plate with cover has protection class IP65 and is protected against dust and water ingress.

- Flexibility in the management of fibre optic networks
- Plug & Play installation
- Flexibility in the FTTX concept

Notes

The construction of the mains distributor is divided into two parts, one part of the distributor is buried in the ground and thus provides stability and support. The housing material used is stainless steel with a 60 - 80 µm polyester powder coating.

The overlength management of the cable or conduit systems of up to 6.30 m takes place in the main part of the distributor, the overlength is routed around the fibre management plate. Furthermore, fastening systems for the cable and conduit systems are pre-assembled. A device for universal locks (profile half cylinder) is available. The distributor has a stainless mounting wall to mount all fibre management boxes (FMB) from KAISER.

Mains distributor, CSS

· Scope of delivery: mains distributor, FMB including splice cassettes, 4× stainless steel bolts, sealing material, moisture absorber

Network level	3	3	3
Installation type	Above ground	Above ground	Above ground
Protection class	IP65	IP65	IP65
Chemical resistance	Yes	Yes	Yes
Vibration resistance	Yes	Yes	Yes
Impact resistance	Yes	Yes	Yes
Halogen-free	Yes	Yes	Yes
Number of fibres	**192**	**192**	**96**
Number of splice cassettes	**16**	**16**	**8**
Splice cassettes height	**4 mm**	**4 mm**	**8 mm**
Loop function (window cut)	**Yes**	**No**	**No**
Loop length (splice cassette)	300 mm	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	2	2	2
Cable / conduit inlet Ø	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm
Number of cable / conduit breakout openings	**No**	**1**	**1**
Cable / conduit breakout opening Ø	**No**	**M12/16/20/25**	**M12/16/20/25**
Number of cable / conduit outlets	**48**	**48**	**48**
Cable / conduit outlet Ø	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm
Fastening option	Screw attachment	Screw attachment	Screw attachment
Temperature range storage	-10 °C / +50 °C	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range installation	-10 °C / +50 °C	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	1170 × 500 × 250 mm	1170 × 500 × 250 mm	1170 × 500 × 250 mm
Colour	Grey (RAL 7035)	Grey (RAL 7035)	Grey (RAL 7035)
Art. No.	**AT29321**	**AT29313**	**AT29312**

Mains distributor, HS

· Scope of delivery: mains distributor, FMB including splice cassettes, 4× stainless steel bolts, sealing material, moisture absorber

Network level	3	3
Installation type	Above ground	Above ground
Protection class	IP65	IP65
Chemical resistance	Yes	Yes
Vibration resistance	Yes	Yes
Impact resistance	Yes	Yes
Halogen-free	Yes	Yes
Number of fibres	**96**	**48**
Number of splice cassettes	**8**	**4**
Splice cassettes height	8 mm	8 mm
Loop function (window cut)	**No**	**Yes**
Loop length (splice cassette)	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm
Splice protector holder	Heat shrink tubing	Heat shrink tubing
Number of cable / conduit inlets	2	2
Cable / conduit inlet Ø	4.5 - 8.3 mm	4.5 - 8.3 mm
Number of cable/conduit breakout openings	**1**	**2**
Cable / conduit breakout opening Ø	**M12/16/20/25**	**M20/M25**
Number of cable / conduit outlets	**48**	**24**
Cable / conduit outlet Ø	3.0 - 8.0 mm	3.0 - 8.0 mm
Fastening option	Screw attachment	Screw attachment
Temperature range storage	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range installation	-10 °C / +50 °C	-10 °C / +50 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	1170 × 500 × 250 mm	1170 × 500 × 250 mm
Colour	Grey (RAL 7035)	Grey (RAL 7035)
Art. No.	**AT29311**	**AT29316**

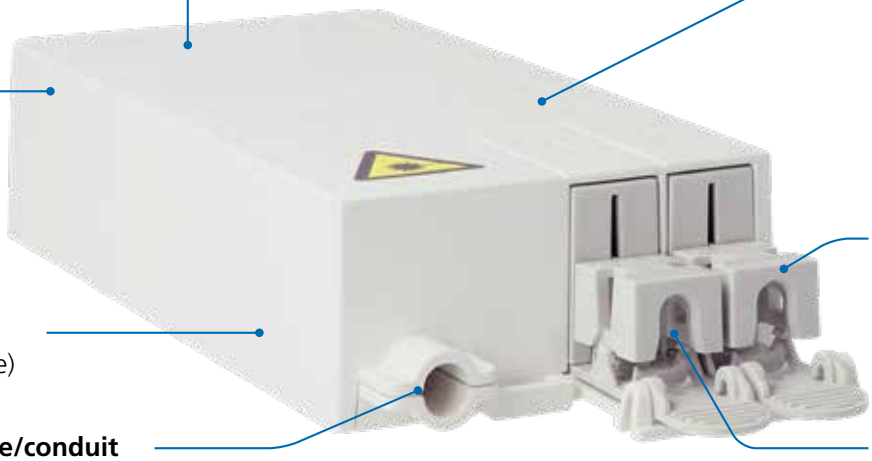
The construction of the mains distributor is divided into two parts, one part of the distributor is buried in the ground and thus provides stability and support. The overlength management of the cable or conduit systems of up to 6.30 m takes place in the main part of the distributor.

Fibre termination unit (FTU)

The smart fibre termination unit serves as a link between the passive fibre optic network and the Network Termination Unit (NTU, fibre modem).

The fibre termination unit by KAISER has a universal fibre interface and is therefore compatible with all common fibre modems of the network operators.

- Compact design
- Simple and safe plug connection with plug-in module
- Time saving due to systematic assembly sequence



Fibre terminating unit (FTU), 2× SC/APC simplex, CSS, HS

· Scope of delivery: FTU, 2× SC/APC simplex coupling

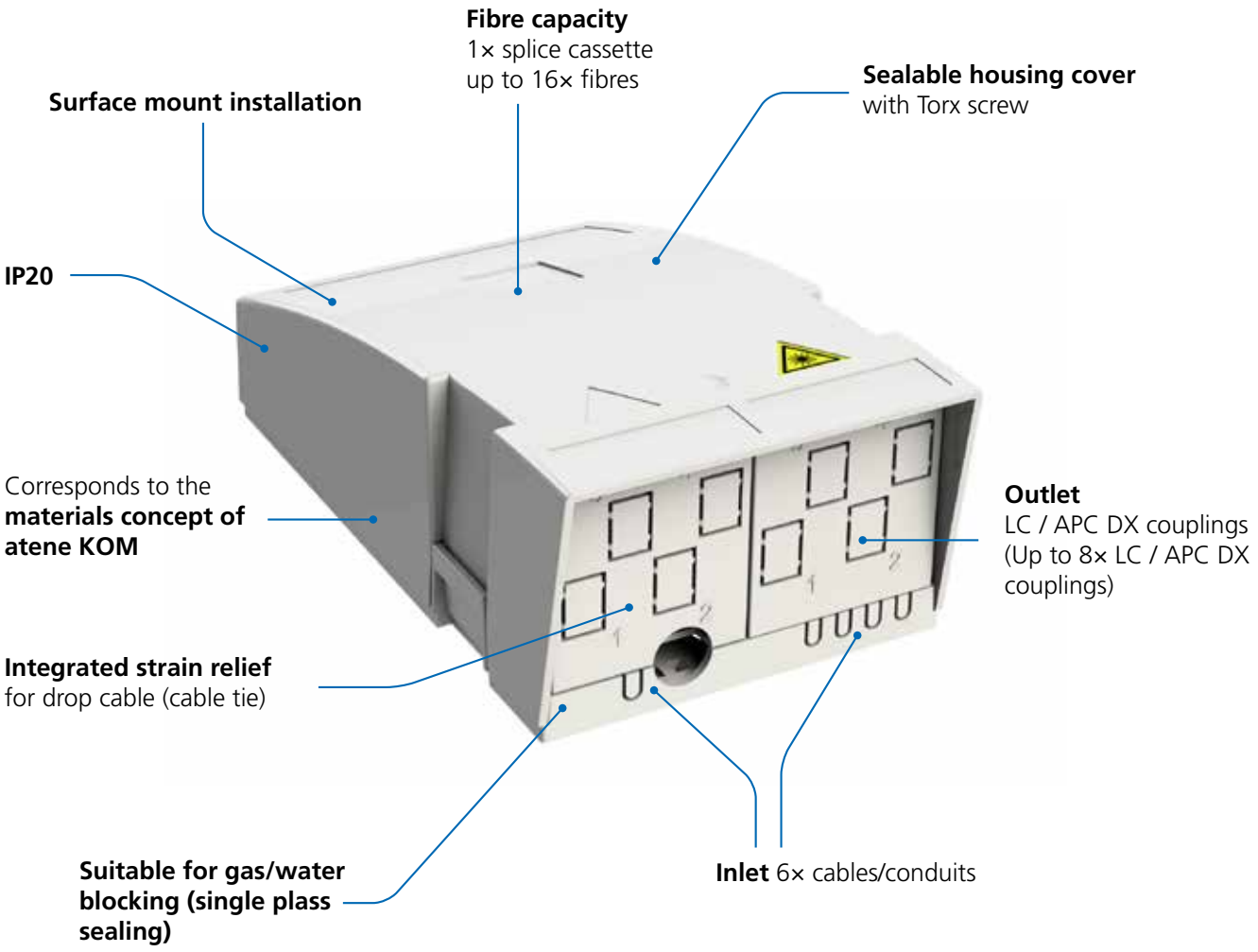
Network level	3
Installation type	Surface-mounted
Protection class	IP20
Halogen-free	Yes
Number of fibres	2
Number of splice cassettes	1
Number of couplings	2
Loop length (splice cassette)	250 mm
Bending radius (splice cassette)	R = 23 mm
Splice protector holder	CSS Crimp / Mini shrink tubing / heat shrink tubing
Number of cable / conduit inlets	1
Cable slot connection cable	Ø max. 8.0 mm
Temperature range storage	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C
Length × Width × Height	150 × 80 × 38 mm
Colour	White
Art. No.	**AT29100**

Building entry point (BEP)

The building entry point is a compact fibre termination unit. Mechanical protection (CSS crimp) of the splice connection and easy installation are guaranteed. In addition, the building entry point has up to 8× SC / simplex, LC / duplex, E2000 coupling breakouts.

Different variant of the building entry point (BEP) have been approved by "atene KOM" for funding projects.

- Compact design
- Simple and safe plug connection with plug-in module
- Time saving due to systematic assembly sequence



Notes

The safety spring of the coupling is engaged on the inside and can only be removed by fully opening the building entry point. In addition, there is the option of sealing the building entry point to prevent unauthorised opening. The screw attachment is made with the Torx screw system.

Building entry point (BEP), LC / APC duplex, CSS

· Scope of delivery: BEP, LC / APC duplex coupling



Network level	3	3	3
Installation type	Surface-mounted	Surface-mounted	Surface-mounted
Protection class	IP20	IP20	IP20
Number of fibres	**2**	**4**	**8**
Number of splice cassettes	1	1	1
Number of couplings	**1**	**2**	**4**
Coupling version	LC/APC DX	LC/APC DX	LC/APC DX
Atene KOM approved	No	No	No
Halogen-free	Yes	Yes	Yes
Loop length (splice cassette)	250 mm	250 mm	250 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable/conduit inlets	6	6	6
Cable/conduit inlet Ø	1× 8.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 8.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 8.0 mm, 1× 4.5 mm, 4× 4.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	153 × 91 × 61 mm	153 × 91 × 61 mm	153 × 91 × 61 mm
Colour	White	White	White
Art. No.	**AT29211**	**AT29212**	**AT29214**

Building entry point (BEP), LC/APC duplex, shutter, CSS

· Scope of delivery: BEP, LC/APC duplex coupling



Network level	3	3	3
Installation type	Surface-mounted	Surface-mounted	Surface-mounted
Protection class	IP20	IP20	IP20
Number of fibres	**2**	**4**	**6**
Number of splice cassettes	1	1	1
Number of couplings	**1**	**2**	**3**
Coupling version	LC/APC DX, shutter	LC/APC DX, shutter	LC/APC DX, shutter
Atene KOM approved	Yes	Yes	Yes
Halogen-free	Yes	Yes	Yes
Loop length (splice cassette)	250 mm	250 mm	250 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable/conduit inlets	6	6	6
Cable/conduit inlet Ø	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	153 × 91 × 61 mm	153 × 91 × 61 mm	153 × 91 × 61 mm
Colour	White	White	White
Art. No.	**AT29221**	**AT29222**	**AT29223**

Building entry point (BEP), LC/APC duplex, shutter, CSS

· Scope of delivery: BEP, LC/APC duplex coupling

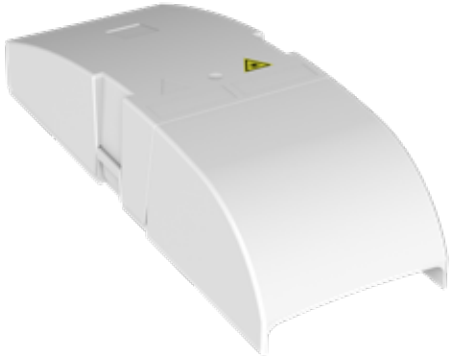
Network level	3	3
Installation type	Surface-mounted	Surface-mounted
Protection class	IP20	IP20
Number of fibres	**10**	**14**
Number of splice cassettes	1	1
Number of couplings	**5**	**7**
Coupling version	LC/APC DX, shutter	LC/APC DX, shutter
Atene KOM approved	Yes	Yes
Halogen-free	Yes	Yes
Loop length (splice cassette)	250 mm	250 mm
Bending radius (splice cassette)	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable/conduit inlets	6	6
Cable/conduit inlet Ø	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	153 × 91 × 61 mm	153 × 91 × 61 mm
Colour	White	White
Art. No.	**AT29225**	**AT29227**

Building entry point (BEP), shutter, pre-terminated

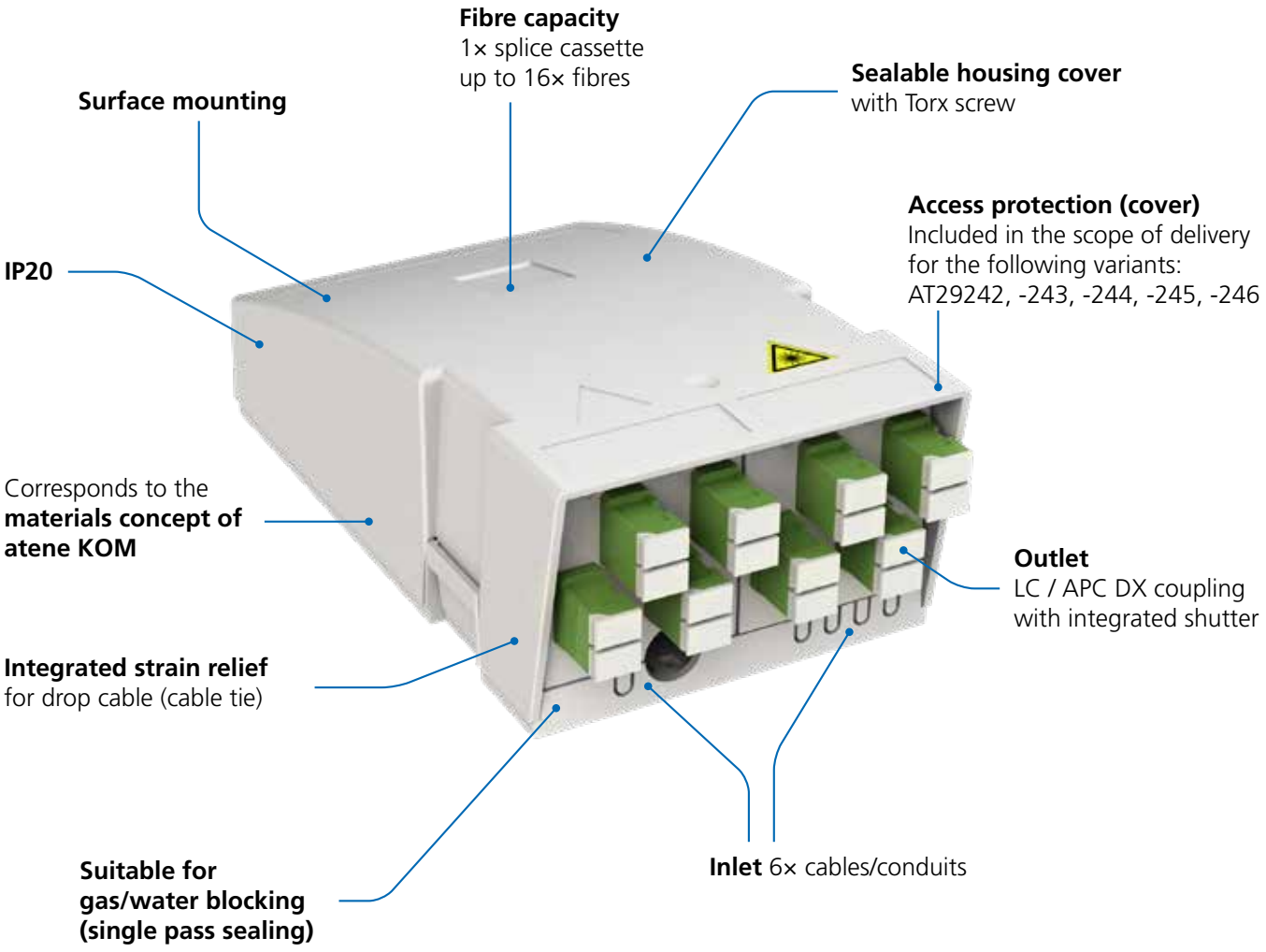
The building entry point is a compact fibre termination unit. Mechanical protection (CSS crimp) of the splice connection and easy installation are guaranteed. In addition, the building entry point has up to 8× SC / simplex, LC / duplex, E2000 coupling breakouts.

Different variant of the building entry point (BEP) have been approved by "atene KOM" for funding projects.

- Compact design
- Simple and safe plug connection with plug-in module
- Time saving due to systematic assembly sequence



Building entry point (BEP) with access protection (cover)



Notes

The safety spring of the coupling is engaged on the inside and can only be removed by fully opening the building entry point. In addition, there is the option of sealing the building entry point to prevent unauthorised opening. The screw attachment is made with the Torx screw system.

Building entry point (BEP), LC/APC duplex, shutter, CSS, pre-terminated

· Scope of delivery: BEP, LC/APC duplex coupling, ready to splice


Network level	3	3
Installation type	Surface-mounted	Surface-mounted
Protection class	IP20	IP20
Number of fibres	**2**	**6**
Number of splice cassettes	1	1
Number of couplings	**1**	**3**
Coupling version	LC/APC DX, shutter	LC/APC DX, shutter
Number of pigtails	**2**	**6**
Pigtail version	LC/APC SX	LC/APC SX
Atene KOM approved	Yes	Yes
Halogen-free	Yes	Yes
Loop length (splice cassette)	250 mm	250 mm
Bending radius (splice cassette)	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	6	6
Cable/conduit inlet Ø	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	153 × 91 × 61 mm	153 × 91 × 61 mm
Colour	White	White
Art. No.	**AT29245**	**AT29241**

Building entry point (BEP), LC/APC duplex, shutter, CSS, pre-terminated

· Scope of delivery: BEP, LC/APC duplex coupling, ready to splice

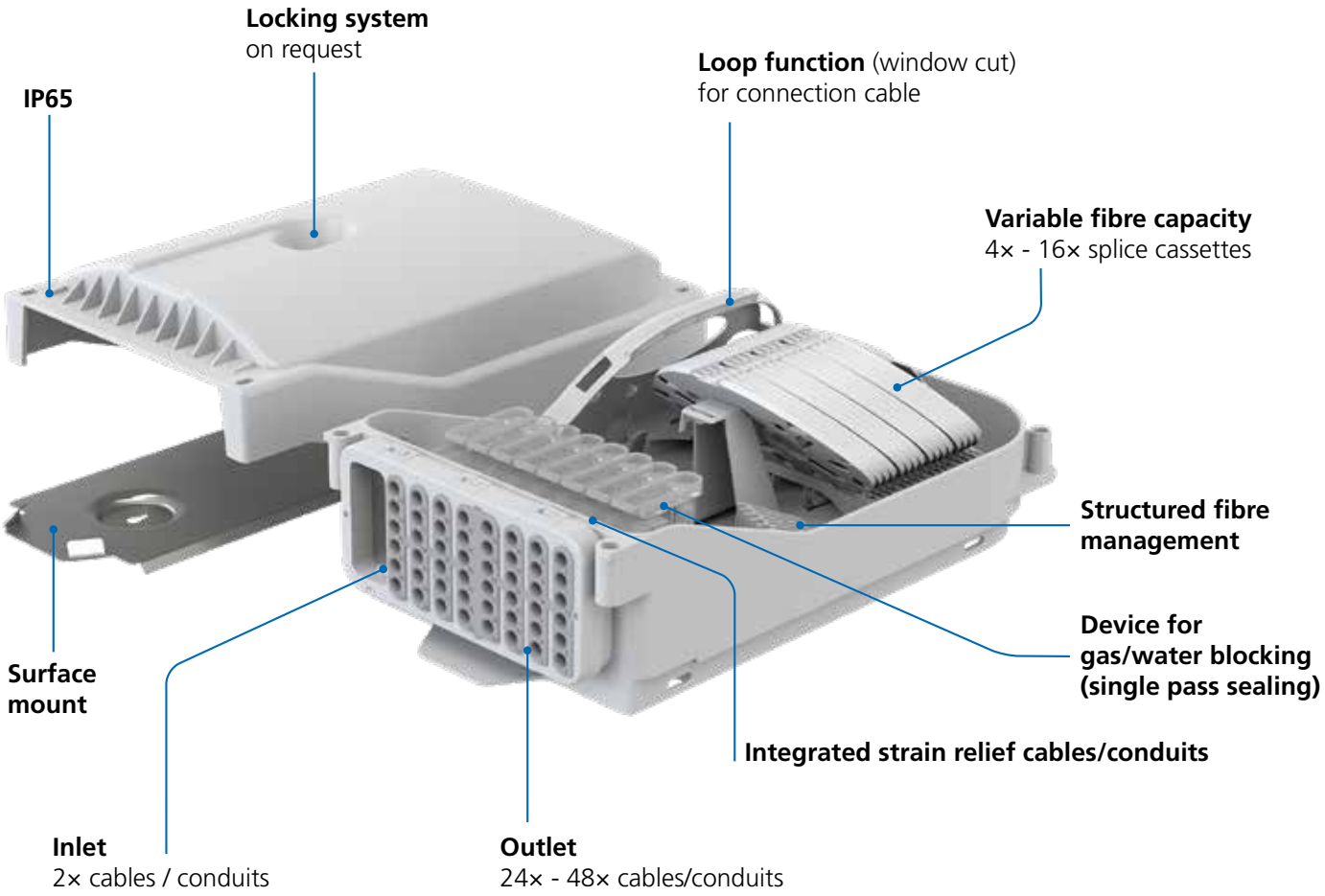



Network level	3	3	3	3
Installation type	Surface-mounted	Surface-mounted	Surface-mounted	Surface-mounted
Protection class	IP20	IP20	IP20	IP20
Number of fibres	**10**	**12**	**14**	**16**
Number of splice cassettes	1	1	1	1
Number of couplings	**5**	**6**	**7**	**8**
Coupling version	LC/APC DX, shutter	LC/APC DX, shutter	LC/APC DX, shutter	LC/APC DX, shutter
Number of pigtails	**10**	**12**	**14**	**16**
Pigtail version	LC/APC SX	LC/APC SX	LC/APC SX	LC/APC SX
Atene KOM approved	Yes	Yes	Yes	Yes
Halogen-free	Yes	Yes	Yes	Yes
Loop length (splice cassette)	250 mm	250 mm	250 mm	250 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	6	6	6	6
Cable/conduit inlet Ø	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm	1× 10.0 mm, 1× 4.5 mm, 4× 4.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	153 × 91 × 61 mm	153 × 91 × 61 mm	153 × 91 × 61 mm	153 × 91 × 61 mm
Colour	White	White	White	White
Art. No.	**AT29242**	**AT29246**	**AT29243**	**AT29244**

Building distributor

The fibre management plate can be used as a surface-mounted building distributor with the help of the mounting device and the cover if required. The fibre management box (FMB) has protection class IP65 and is protected against dust and water ingress.

- Flexibility in the management of fibre optic networks
- Plug & Play installation
- Flexibility in the FTTX concept



Building distributor, CSS

· Scope of delivery: FMB including splice cassettes, 4× mounting screws, sealing material, mounting bracket

Network level	4	4	4	4
Installation type	Surface-mounted	Surface-mounted	Surface-mounted	Surface-mounted
Protection class	IP65	IP65	IP65	IP65
Halogen-free	Yes	Yes	Yes	Yes
Number of fibres	**192**	**192**	**96**	**96**
Number of splice cassettes	**16**	**16**	**8**	**8**
Splice cassettes height	**4 mm**	**4 mm**	**8 mm**	**8 mm**
Loop function (window cut)	**Yes**	**No**	**Yes**	**No**
Loop length (splice cassette)	300 mm	300 mm	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm	30 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	2	2	2	2
Cable / conduit inlet Ø	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm
Number of cable / conduit breakout openings	**No**	**1**	**No**	**1**
Cable / conduit breakout opening Ø	**No**	**M12/16/20/25**	**No**	**M12/16/20/25**
Number of cable / conduit outlets	**48**	**48**	**48**	**48**
Cable / conduit outlet Ø	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	380×220×130 mm	380×220×130 mm	380×220×130 mm	380×220×130 mm
Colour	Transparent / Grey	Transparent / Grey	Transparent / Grey	Transparent / Grey
Art. No.	**AT29372**	**AT29363**	**AT29371**	**AT29362**

Building distributor, HS

· Scope of delivery: FMB including splice cassettes, 4× mounting screws, sealing material, mounting bracket

Network level	4	4	4
Installation type	Surface-mounted	Surface-mounted	Surface-mounted
Protection class	IP65	IP65	IP65
Halogen-free	Yes	Yes	Yes
Number of fibres	**96**	**96**	**48**
Number of splice cassettes	**8**	**8**	**4**
Splice cassettes height	8 mm	8 mm	8 mm
Loop function (window cut)	**Yes**	**No**	**Yes**
Loop length (splice cassette)	300 mm	300 mm	300 mm
Bending radius (splice cassette)	30 mm	30 mm	30 mm
Splice protector holder	Heat shrink tubing	Heat shrink tubing	Heat shrink tubing
Number of cable / conduit inlets	2	2	2
Cable / conduit inlet Ø	4.5 - 8.3 mm	4.5 - 8.3 mm	4.5 - 8.3 mm
Number of cable / conduit breakout openings	**No**	**1**	**2**
Cable / conduit breakout opening Ø	**No**	**M12/16/20/25**	**M20/M25**
Number of cable / conduit outlets	**48**	**48**	**24**
Cable / conduit outlet Ø	3.0 - 8.0 mm	3.0 - 8.0 mm	3.0 - 8.0 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	380×220×130 mm	380×220×130 mm	380×220×130 mm
Colour	Transparent / Grey	Transparent / Grey	Transparent / Grey
Art. No.	**AT29373**	**AT29361**	**AT29391**

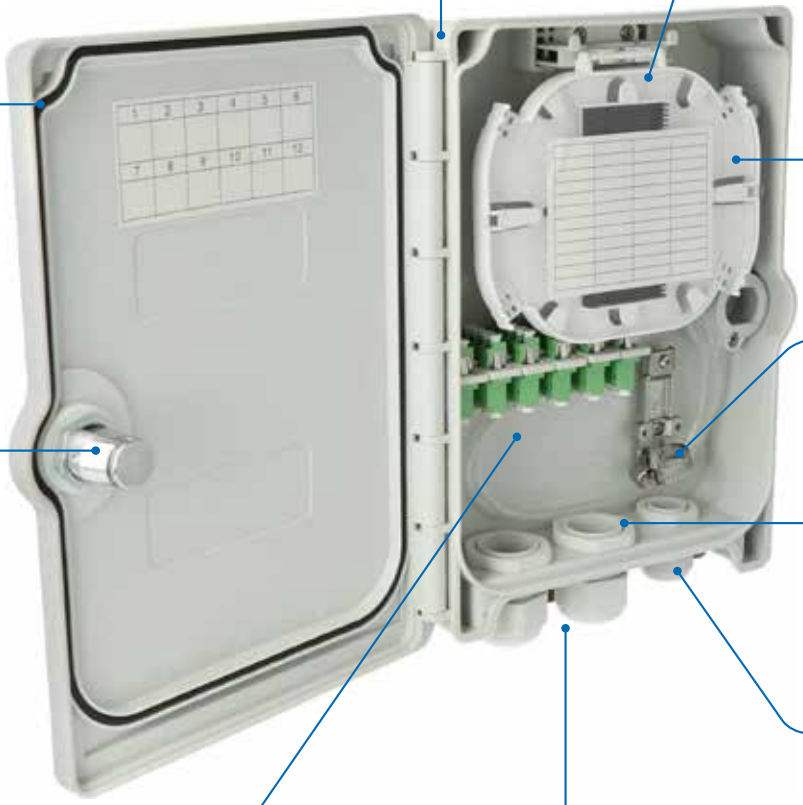
Compact building distributor

The compact building distributor from KAISER is designed for up to 24× fibres and can be supplied in different configuration levels.

The compact building distributor can also be used as a building entry point.

Various versions of the compact building distributor have been approved by "atene KOM" and are suitable for use in funding projects.

- Flexibility in the management of fibre optic networks
- Protected plug connection, internal glass fibre coupling
- Removable housing cover
- Flexibility in the FTTX concept
- Structured fibre management



Notes

Mechanical protection of the fibre management and easy installation are guaranteed. In addition, the compact building distributor has 6× LC/Quad, 6× SC/DX coupling breakouts, which can be supplied without coupling, equipped or partially equipped as required. The couplings are located inside the housing to prevent unauthorized access. The compact building distributor is lockable. In addition, there is the possibility of sealing the compact building distributor to prevent unauthorised opening.

Compact building distributor, CSS, partially equipped

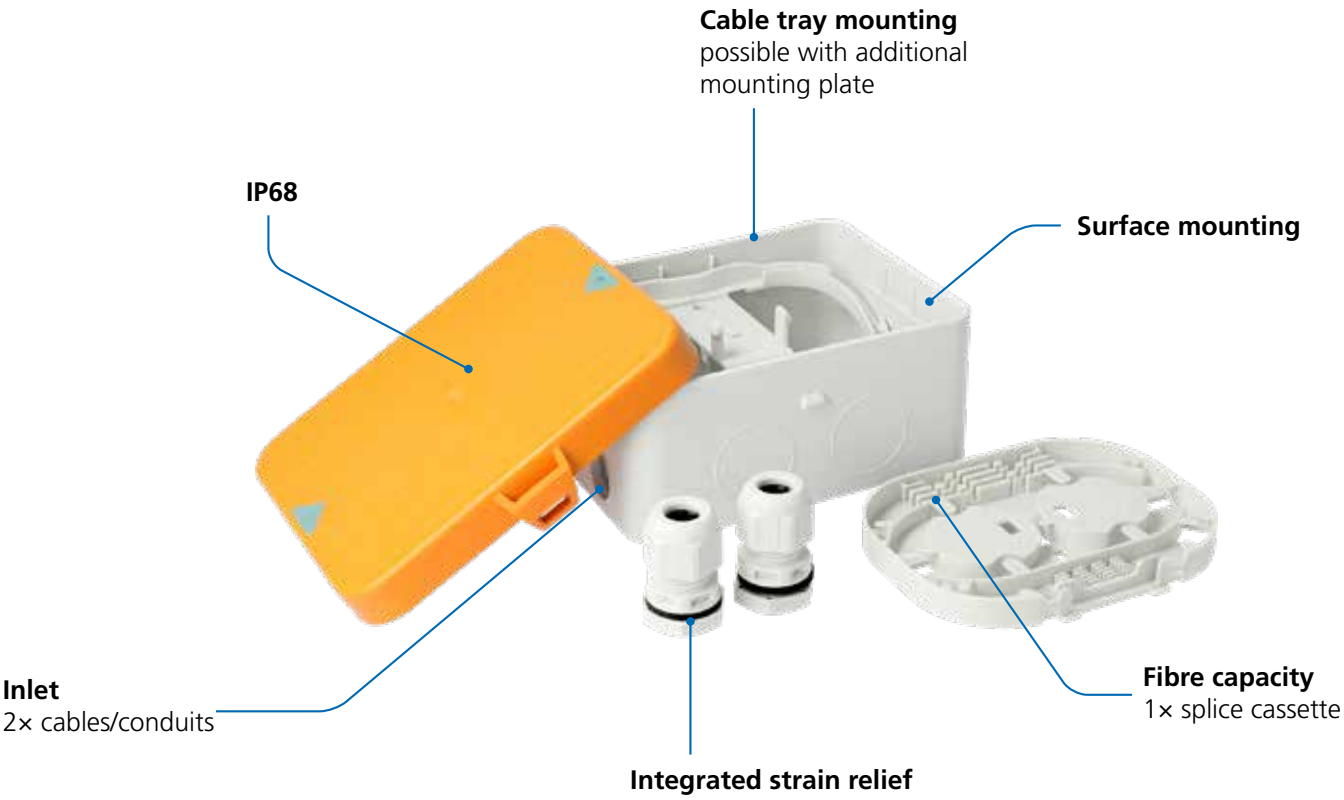
· Scope of delivery: Compact Gf-GV, LC/APC QD coupling

Network level	4	4	4
Installation type	Surface-mounted	Surface-mounted	Surface-mounted
Protection class	IP55 (surface mounting)	IP55 (surface mounting)	IP55 (surface mounting)
Number of fibres	**4**	**20**	**24**
Number of splice cassettes	1	1	1
Number of couplings	**1**	**5**	**6**
Coupling version	LC/APC QD	LC/APC QD	LC/APC QD
Atene KOM approved	Yes	Yes	Yes
Halogen-free	Yes	Yes	Yes
Loop length (splice cassette)	250 mm	250 mm	250 mm
Bending radius (splice cassette)	23 mm	23 mm	23 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	1	1	1
Cable / conduit inlet Ø	max. 11.0 mm	max. 11.0 mm	max. 11.0 mm
Number of cable / conduit outlets	2	2	2
Cable / conduit outlet Ø	max. 12× 2 mm	max. 12× 2 mm	max. 12× 2 mm
Temperature range storage	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range installation	-10 °C / +60 °C	-10 °C / +60 °C	-10 °C / +60 °C
Temperature range during operation	-20 °C / +60 °C	-20 °C / +60 °C	-20 °C / +60 °C
Length × Width × Height	258 × 186 × 61 mm	258 × 186 × 61 mm	258 × 186 × 61 mm
Colour	Grey (RAL 7035)	Grey (RAL 7035)	Grey (RAL 7035)
Art. No.	**AT29231**	**AT29235**	**AT29236**

Splice enclosure

The splice enclosure by KAISER is suitable for extending or repairing fibre optic cables. Due to the well thought-out design, the fitter can carry out the assembly quickly and without errors.

- Simple assembly
- Time saving due to systematic assembly sequence
- Compact design



Notes

The splice enclosure has the protection class IP68 and can be used above ground in outdoor areas. Furthermore, an indoor installation is possible without any problems by surface mounting, with the additional universal mounting plate the junction box can be mounted on cable trays.

Splice enclosure, CSS, HS

· Scope of delivery: splice enclosure, 2× cable gland, splice cassette

Network level	4
Installation type	Above ground / surface mounted
Protection class	IP68
Chemical resistance	Yes
Vibration resistance	Yes
Impact resistance	Yes
Halogen-free	Yes
Number of fibres	6
Number of splice cassettes	1
Loop length (splice cassette)	200 mm
Bending radius (splice cassette)	23 mm
Splice protector holder	CSS crimp / Mini heat shrink tubing
Number of cable / conduit inlets	2
Cable / conduit inlet features	Sandproof, waterproof
Cable / conduit inlet bending strength	Yes
Cable / conduit inlet Ø	5.0 - 10.0 mm
Housing closure	Snap-in hook
Temperature range storage	-10 °C / +50 °C
Temperature range installation	-10 °C / +50 °C
Temperature range during operation	-20 °C / +60 °C
Length × Width × Height	120 × 95 × 55 mm
Colour	Grey / Orange
Art. No.	**AT29016**

Glass fibres insensitive to bending

are fibre optic cables with smaller bending radius.
While the permissible bending radii of an optical fibre are normally at least 30 mm, the bend-insensitive optical fibre cables according to the ITU-T G.657 specification are 10 mm and 7.5 mm respectively.

ITU-T G.657.A1
(Single mode fibre optic cable) bending radius 10 mm

ITU-T G.657.A2
(Single mode fibre optic cable) bending radius 7.5 mm

FTTX cabling (EN 50173-1)					
Class	Link length	Fibre class	Channel attenuation (dB)		Application
OF-5000	5,000 m	OS2	1310 nm 4.0 dB	1550 nm 4.0 dB	10GBase SR

Factors influencing the transmission rate

A key factor for the best possible transmission rate of a subscriber's internet connection is the attenuation on the fibre optic cabling route.

The following factors are decisive:

- possible losses due to scattering, absorption
- natural line losses (length), signal propagation delay
- Losses due to splice connection

Calculation of channel attenuation (single mode fibre 150 m with 2× connectors)				
Description	Attenuation standard	Length Quantity	Calculation	Loss (dB)
Fibre attenuation loss	1.00 dB/km	150 m	0.001 × 150	0.15 dB
Insertion loss per connector	0.75 dB	2	2 × 0.75	1.50 dB
Insertion loss per splice	0.30 dB	1	1 × 0.30	0.30 dB
Total channel attenuation				1.95 dB

The maximum permissible channel attenuation of 4.0 dB is not exceeded, therefore interference-free data transmission can be guaranteed. The calculated channel attenuation must be confirmed and recorded with a certifier (measuring device) after installation of the cabling.

Fibre optic connectors

Fibre optic connectors are mounted on both sides of a fibre optic cable to create a fibre optic patch cord. In addition, the plugs are connected with a coupling. The coupling is specially designed for the connectors and positions the end faces (connector end faces) against each other so that the light signal can be transmitted optimally. The connectors are polished after the manufacturing process and protected against dirt and dust with a dust cap. Before using the connectors, the front surface must be cleaned with a cleaning agent (dust-free cloth, alcohol, cleaning pen, etc.), as the slightest contamination has a great effect on the attenuation.
In the FTTX environment, only connectors with 8° APC (Angled Physical Contact) are used. The front surface is bevelled and polished. The reflections on the fibre optic cable are not transmitted through the connector, thus improving the channel attenuation.

Plug	Typical insertion loss	Ferrules diameter	Number of fibres	Standard	Locking
SC	0.2 dB	2.50 mm	1	IEC 874-13	Draw/Plug
LC	0.2 dB	1.25 mm	1	IEC 61754-20	Clamp
E2000	0.2 dB	2.50 mm	1	IEC 61754-15	Draw/Plug

Fibre recognition

The fibre optic categories and connectors are differentiated by colour. This means that the colour code can be used to draw immediate conclusions about the installed system.

Category	Connector / Coupling	Jumper cable
OS2 Single Mode	Blue	Yellow
OS2 Single Mode APC	Green	Yellow

Splice detection

The individual fibre optic lines in a fibre optic cable are defined by standard to simplify processing during splicing. In Germany, DIN VDE-0888 applies; outside Germany, IEC 60794-2 and TIA 598-B are also applicable.

Colour code (VDE-0888)			
1	Red	7	Brown
2	Green	8	Purple
3	Blue	9	Turquoise
4	Yellow	10	Black
5	White	11	Orange
6	Grey	12	Pink

Glossary

Network level 1	Wide area network
Network level 2	Regional distribution network
Network level 3	Street distribution
Network level 4	Building distribution
Network level 5	Apartment distribution
Broadband	In communications engineering, the term broadband communication describes a transmission channel whose magnitude frequency response is not constant and in which signal distortions occur as a result. Broadband channels, unlike narrowband channels, require channel equalization with adaptive filters to compensate for signal distortion.
DSL	The end customer is connected to the telecommunications network exclusively on a copper basis. In this case, the telecommunications cable runs from the main distribution frame (HVt) to the cable distribution frame Mains distributor and from there to the house connection.
Vectoring	Vectoring technology is an extension of VDSL2, with the help of vectoring the crosstalk (NEXT) between the individual wires in the copper telecommunication cable can be minimized and the transmission speed as well as the number of connected subscribers around a Mains distributor can be increased.
FTTX	Fibre to the "X", in the case of fibre optic networks, a distinction is made depending on how the end customer is connected, between FTTC (**F**ibre **t**o **t**he **C**urb), FTTB (**F**ibre **t**o **t**he **B**uilding) and FTTH (**F**ibre **t**o **t**he **H**ome).
HFC	Hybrid Fibre coax is used by cable network operators to connect cable television networks (CATV) via fibre optic cable from the cable head-end (exchange) to the end branch (fibre node). The data signals are transmitted from the end splitter via coaxial cable to the antenna socket in the house.
FTTC	Fibre to the Curb, the fibre optic line is only laid to the cable distribution frame Mains distributor/ multifunctional housing (MFG), (integrated DSLAM (Digital Subscriber Line Access Multiplexer) at the roadside. From there, the existing copper telecommunication cables Copper wire of the distribution network lead to the end customer.
FTTB	Fibre to the Building, in contrast to FTTC/VDSL, FTTB/FTTH networks consist entirely of a fibre optic infrastructure. The fibre optic line extends from the exchange (PoP) via the network distributor to the building entry point (BEP).
FTTH	Fibre to the Home, with FTTH the entire cabling in the building up to the FTO also consists of fibre optic lines.
PoP	Point of Presence, different designation for the switching station
Mains Distributor	The fibre optic network distributor is a passive distributor for cable distribution of fibre optic communication lines within a local network.
Distribution closure	The closure is a passive distribution box for cable distribution of fibre optic communication lines within a local area network .
FTU	Fibre Termination Unit
BEP	Building entry point of the network operator
Building Distributor	Fibre optic building distributor, different designation PD (primary distributor)
Floor Distributor	Fibre optic floor distributor, different designation consolidation point
FTO	Fibre optic termination outlet ends at subscriber line, different designation fibre optic subscriber outlet

Product glossary

FMP	Fibre management plate
FMB	Fibre management box
MFD	Midi fibre dome
CFD	Compact fibre dome
DP	"Distribution Point" is a distribution point between PoP and BEP, e.g. distribution closure (underground) or mains distributor (above ground)

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