

Accessories for FTTO Installation Components

A Multitude of Installation Options – Simply
Illustrated

Version 2.0



What This Guide Sets Out to Achieve

As a specialist for fiber optic based transmission systems, MICROSENS offers the broadest portfolio of network components designed for professional integration in wall ducts, underfloor systems, walls and desks currently available on the market.

We offer an extensive portfolio of installation accessories for installing our components. This document contains recommendations on how to expand an existing installation or realise a brand-new setup.

Our goal is to identify the perfect accessories for the given installation environment (e.g. cable duct and socket from manufacturer xy) in order to achieve optimal mechanical stability and an installation which conforms to all the current standards whilst guaranteeing an attractive design.

MICROSENS installation systems – no compromises!

Contents

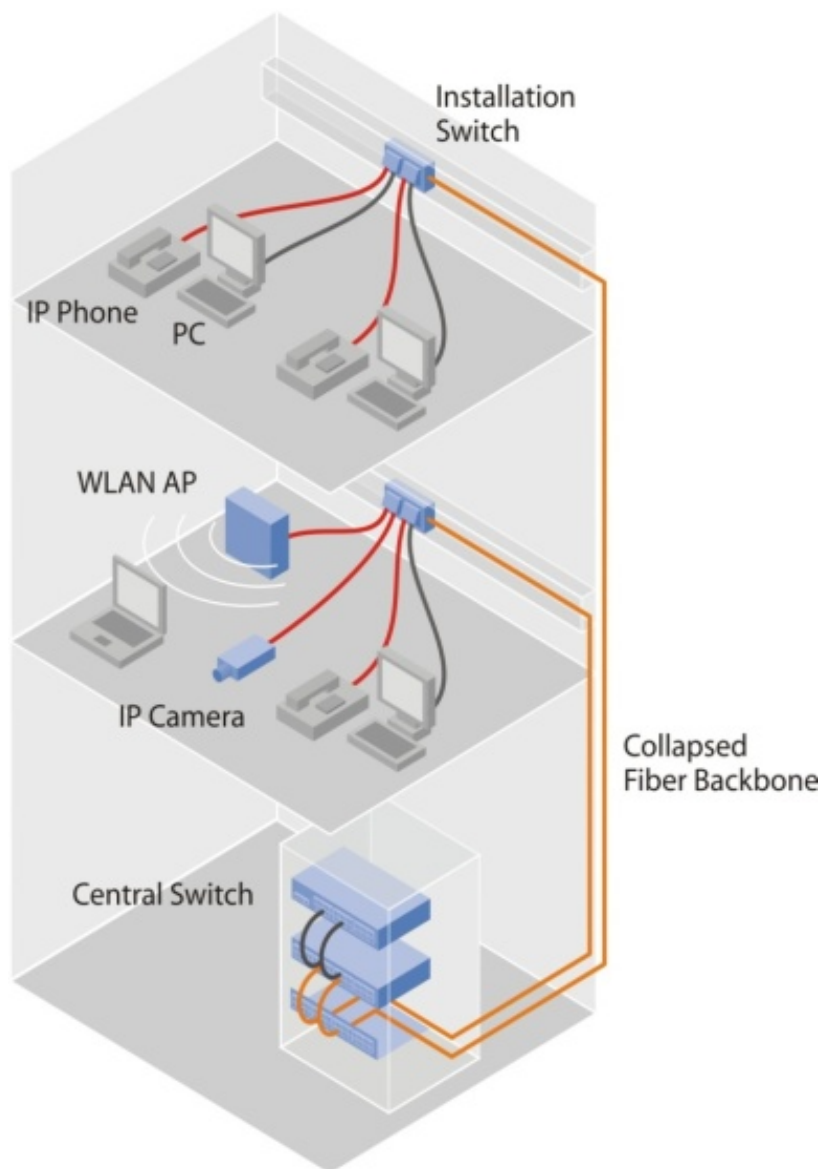
1.	Introduction Fiber To The Office (FTTO)	4
2.	Introduction System 45 x 45	5
3.	Duct-Installation	7
3.1	Installation Set with Universal Device Support for Ducts with an Anchor Rail.....	8
3.2	Installation Set for Front-Locking tehalit Ducts	9
3.3	Ducts with Standard E2 Sockets.....	11
3.4	tehalit Wall Ducts.....	12
3.5	OBO BETTERMANN Wall Ducts	15
3.6	Device Casing Overview Sorted by Duct Manufacturer	17
4.	Power Supply Installation	23
4.1	Installation in Wall Ducts	23
4.1.1	Installation on C-Rail	23
4.1.2	Installation in Front-Locking tehalit Ducts	23
4.1.3	Installation in E2 Socket	24
5.	Underfloor Installation	25
5.1	Installation Sets for Ackermann Underfloor Systems	26
5.2	Ackermann Sockets.....	27
5.3	electraplan Supply Units	29
5.4	PUK Underfloor Systems	30
6.	Wall Installation	31
6.1	Installation Set for Hollow Wall Installation	32
6.2	Installation Set for Concealed Wall Installation	33
6.3	Installation Set for KAISER Device Casings	34
6.4	Alternative Hollow Wall, Concealed and Surface Mounting Sockets	35
6.5	Universal, Modular Aluminium-Chassis	36
6.6	RAPID 45 Surface Installation Set	37
6.7	Metal Surface Chassis.....	38
7.	Furniture Installation	39
7.1	Furniture Inlet Casing.....	40
7.2	Retractable & Modular Aluminium-Pillar	41
8.	Industrial Installation	43
8.1	Hat Rail Installation.....	43
9.	System 45 x 45 Accessories	45
9.1	Blind Covers.....	45
9.2	Power Sockets.....	45
9.3	Cable Feeds	45
9.4	Further System 45 x 45 Installation Components.....	46
9.5	Mounting Options for MS140131	46

1. Introduction Fiber To The Office (FTTO)

Fiber To The Office (FTTO) is a standard compliant and decentralised networking concept for modern office environments that intelligently combines the benefits of fiber optic and copper based cabling technologies.

In contrast to a classic Structured Cabling Network (SCN), FTTO deploys fiber optic cables throughout – all the way from the central wiring closet to the workplace. Copper cabling is only used to connect IP terminal equipment via MICROSENS installation switches.

Intelligent energy usage and low space requirements compared to copper cabling noticeably impact economic results. FTTO completely cuts out the costs of maintaining expensive technical rooms on each floor, with their high space and cooling requirements. For more information on our FTTO concept, please refer to <http://www.microsens.com/business-segments/enterprise-networks/fiber-to-the-office/>.



Application Outline FTTO Concept

2. Introduction System 45 x 45

Future-orientated cabling concepts are distinguished primarily by their flexibility. With System 45 x 45, MICROSENS provides the most compact installation solution for active network components currently available on the market.

The System 45 x 45 is based on the basic dimensions of 45 x 45 mm. This design is distributed worldwide and allows the use of national and international installation systems. Alongside standard wall duct and underfloor installation, desk and laboratory installation as well as room pillar and concealed installation are now widespread.

The main advantage of the System 45 x 45 is its cost efficiency compared to traditional systems – cutting installation costs by around 50%. The components no longer need to be fastened with screws, but are simply snapped into specially-designed device supports or sockets. This considerably reduces installation time.

The installation components offered by MICROSENS come in two different designs: horizontal and vertical. The devices are supplied for a perfect fit – no need to make any alterations or waste time putting the equipment together onsite. This not only reduces installation times but also significantly increases the durability of the components.



MICROSENS Gigabit Ethernet
Micro Switch Generation 6



Micro Switch in cable duct
with 45 mm track

System 45 x 45 – never has it been easier or quicker to install and integrate your equipment!

Fitting Micro Switch in Adapter Plate



Fasten adapter plate on socket



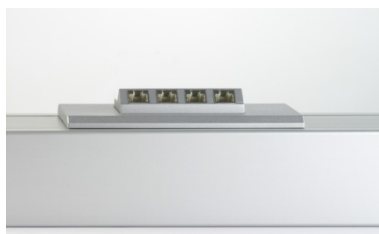
Insert Micro Switch into adapter plate (angled) upon connection of network and power



Insert switch into the allocated adapter plate openings



Click switch into adapter plate



Snap plastic cover into switch

3. Duct-Installation

For wall duct installation where the track or socket is not fitted with a 45 mm rail, MICROSENS offers a series of adapters. The art of combining device supports or sockets with the desired wall ducts requires additional information which MICROSENS will be providing on the following pages.

Installation Example MS140029



Adapter plate + E2 Socket
in OBO BETTERMANN GEK BR-Duct



Insert switch



Apply cover frame

3.1 Installation Set with Universal Device Support for Ducts with an Anchor Rail

MICROSENS' MS140040BR2 installation set is suitable for all wall ducts with an anchor rail located along the back of the cable duct – be it a C-rail, 35 mm combi-rail or 35 mm top-hat rail.

This universal set, which replaces the device casing, has an open design, offering plenty of room for power and network connections. The set provides a variable height-adjustment (47, 50, 52 or 55 mm) to compensate for different inner duct heights. No further installation components are required.

The cover frame is designed to overlap the area cut out of the upper duct section (duct cover).

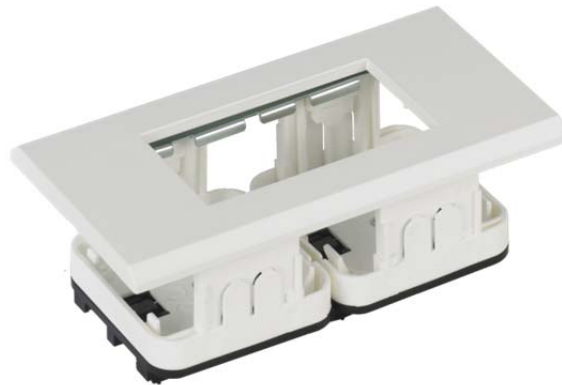




Image	Remark	Art. No.
	Installation set consisting of cover frame (168 x 85 mm), adapter plate and 2x device support, pre-assembled	
	Colour: pure white	MS140040BR2
	Colour: Aluminium lacquered	MS140040BR2-AL
	Colour: graphite	MS140040BR2-GT
	Cover frame, single	
	Colour: pure white	MS140070-RW
	Colour: Aluminium lacquered	MS140070-AL
	Colour: graphite	MS140070-GT

*Further colours upon request



Assembly on C-rail tehalit duct



Assembly on Combi-Rail GEK duct

3.2 Installation Set for Front-Locking tehalit Ducts

The MS140040F set is ideal for all front-locking wall ducts manufactured by Hager (tehalit). This set, which replaces the device casing, has an open design, offering plenty of room for power and network connections. No further installation components are required.

The cover frame fits flush with the upper duct, i.e. it does not overlap the cut-out section.

The set consists of a triple-socket bracket with a matching cover, including a 45 x 45 blind cover which is required to install an installation switch.



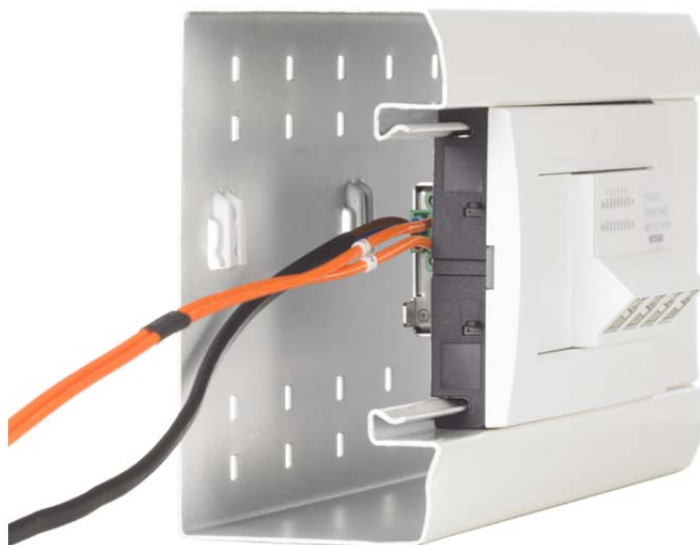
Image	Remark	Art. No.
	Installation set consisting of cover frame (183 x 80 mm), front-locking device support, 1x blind cover	
	Colour: pure white	MS140040F
	Colour: Aluminium lacquered	MS140040F-AL
	Colour: graphite	MS140040F-GT

* Further colours upon request



Finished installation in tehalit duct

Please refer to page 10 for an additional image depicting an MS140040F.



MICROSENS GBE G6 Switch + MS140040F installed in tehalit duct



3.3 Ducts with Standard E2 Sockets

MICROSENS offers an installation set – MS140029 – for installing MICROSENS installation components in ducts, resp. sockets not fitted with a matching 45 mm installation track.

The set consists of two components, an adapter plate with a 45 x 45 track, which can be used to insert an Micro Switch without the need for any further tools, and a cover frame which fits the switch perfectly.

Installation requires a MICROSENS adapter set and an original E2 socket supplied by the respective cable duct manufacturer (not included). A table listing all compatible E2 sockets is available on page 17f.










Image	Remark	Art. No.
	Universal installation set for E2 device casings consisting of adapter plate and cover frame	
	Colour: pure white	MS140029
	Colour: Aluminium lacquered	MS140029-AL
	Colour: graphite	MS140029-GT
	Cover frame, single	
	Colour: pure white	MS140070-RW
	Colour: Aluminium lacquered	MS140070-AL
	Colour: graphite	MS140070-GT














* Further colours upon request




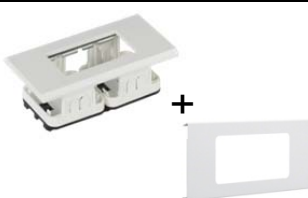



Micro Switch with cover, installed in E2 device casing



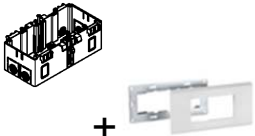
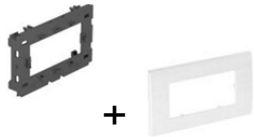
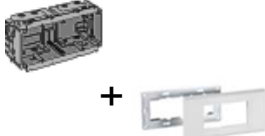
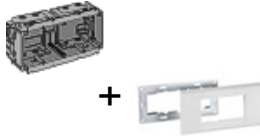
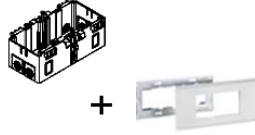

3.4 tehalit Wall Ducts


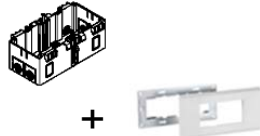
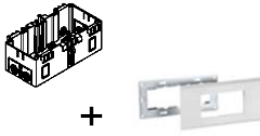


Duct	Socket/ Device Support	Suitable MICROSENS Installation Set	Image
tehalit.BRS duct profiles with 70 mm height, 80 mm top, moulded parts, front-locking device installation Type: BRS65xxx	Included in MICROSENS set	MS140040F	
tehalit.BRS duct profiles with 85 mm height, 80 mm top, moulded parts, front-locking device installation Type: BRS85xxx	Included in MICROSENS set	MS140040F	
tehalit.BRS duct profiles with 100 mm height, 80 mm top, moulded parts, front-locking device installation Type: BRS100xxx	Included in MICROSENS set	MS140040F	
tehalit.BRA duct profiles with 70 mm height, 80 mm top, moulded parts, front-locking device installation Type: BRA65xxx(ohne 65b)	Included in MICROSENS set	MS140040F	
tehalit.BR duct profiles with 70 mm height, moulded parts, C-Profile device installation Type: BR70100	Included in MICROSENS set	MS140040BR2	
tehalit.BR duct profile double compartment, moulded parts, C-Profile device installation Type: BR70214	Included in MICROSENS set	MS140040BR2	
tehalit.BRN duct profiles 70 mm height, moulded parts, C-Profile device installation Type: BRN70xxx	Included in MICROSENS set	MS140040BR2	

Duct	Socket/ Device Support	Suitable MICROSENS Installation Set	Image
tehalit.BRHN duct profiles with 70 mm height, moulded parts, C-Profile device installation Type: BRHN70xxx	Included in MICROSENS set	MS140040BR2	
tehalit.BRH duct profiles with 70 mm height, moulded parts, C-Profile device installation Type: BRHN70132	Included in MICROSENS set	MS140040BR2 Add cover frame MS140075-RW	 + 
tehalit.BR duct profiles with 70 mm height, Moulded parts, C-Profile device installation Type: BR70130	Included in MICROSENS set	MS140040BR2 Add cover frame MS140075-RW	 + 
tehalit.BR duct profiles with 85 mm height, moulded parts, C-Profile device installation Type: BR85130	Included in MICROSENS set	MS140040BR2 Add cover frame MS140075-RW	 + 
tehalit.BRS duct profiles with 70 mm height, 120 mm top, moulded parts, C-Profile device installation Type: BRS65xxxB	Included in MICROSENS set	MS140040BR2 Add cover frame R9282xxx (by Hager)	 + 
tehalit.BRS duct profiles with 85 mm height, 120 mm top, moulded parts, C-Profile device installation Type: BRS85210B	Included in MICROSENS set	MS140040BR2 Add cover frame R9282xxx (by Hager)	 + 
tehalit.BRS duct profiles with 100 mm height, 120 mm top, moulded parts, C-Profile device installation Type: BRS100210B	Included in MICROSENS set	MS140040BR2 Add cover frame R9282xxx (by Hager)	 + 

Duct	Socket/ Device Support	Suitable MICROSENS Installation Set	Image
tehalit.BRA duct profiles with 70 mm height, 120 mm top, moulded parts, C-Profile device installation Type: BRA65xxxB	Included in MICROSENS set	MS140040BR2 Add cover frame BRA1202Rxxx (by Hager)	
tehalit.BRH duct profiles with 70 mm height, moulded parts, C-Profile device installation Type: BRH70172	Included in MICROSENS set	MS140040BR2 Add cover frame R6492xxx (by Hager)	
tehalit.BR duct profiles with 70 mm height, moulded parts, C-Profile device installation Type: BR70170	Included in MICROSENS set	MS140040BR2 Add cover frame L917290xx (by Hager)	
tehalit.BR duct profiles with 85 mm height, moulded parts, C-Profile device installation Type: BR85170	Included in MICROSENS set	MS140040BR2 Add cover frame L917290xx (by Hager)	
tehalit.BR duct profile double compartment, moulded parts, C-Profile device installation Type: BR70214	Included in MICROSENS set	MS140040F	


3.5 OBO BETTERMANN Wall Ducts

Duct	Socket/ Device Support	Suitable MICROSENS Installation Set	Image
Rapid 80 Device installation duct (plastic, steel or Aluminium, various sizes and variants)	Front-locking device device installation socket by OBO BETTERMANN Type: 71GD7	MS140029	
Rapid 45 Device installation duct (plastic, steel or Aluminium, various sizes and variants)	No socket required, the Micro Switch fits the 45 mm rail of the Rapid45 ducts without any further adapter	Not required	
BK70xxx (older models)	Socket for PVC ducts series GEK by OBO BETTERMANN Type: 2390 8T2	MS140029	
GEK 70xxx ducts (older models)	Not required	MS140035	
GES 70xxx ducts (older models)	GED-2	MS140029	
GEA 70xxx ducts PVC (older models)	GED-2	MS140029	
BS70xxx (older models)	Socket for PVC ducts series GEK by OBO BETTERMANN Type: 2390 8T2	MS140029	
BBA70xxx (older models)	Not required	MS140040BR2	


Duct	Socket/ Device Support	Suitable MICROSENS Installation Set	Image
BBST70xxx (older models)	Not required	MS140040BR2	
BS90xxx (older models)	Socket for PVC ducts series GEK by OBO BETTERMANN Typ: 2390 8T2	MS140029	
GEA 55110 S (older models)	Socket for PVC ducts series GEK by OBO BETTERMANN Typ: 2390 8T2	MS140029	
GEA 55135 O (older models)	Socket for PVC ducts series GEK by OBO BETTERMANN Typ: 2390 8T2	MS140029	
6 WIK 2 (older model by Ackermann)	Not required	MS140040BR2	

3.6 Device Casing Overview Sorted by Duct Manufacturer



Baukulit

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	KFR/44	<ul style="list-style-type: none"> • Front-locking socket • Manufacturer Spelsberg 	MS140029
	362-104		
	44 mm height		




Dahl

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	GK/D	<ul style="list-style-type: none"> • For Dahl GKB and LKO ducts • No longer available 	MS140029

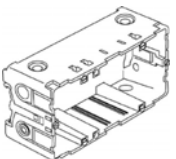

GGK

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	GED 50/2	<ul style="list-style-type: none"> • For installation of 80 mm devices in cable routing duct systems and device installation duct systems with DIN-mounting rails 	MS140040BR2 * replaces socket
	KFR/44	<ul style="list-style-type: none"> • Front-locking socket • Manufacturer Spelsberg 	MS140029
	362-104		
	44 mm height		

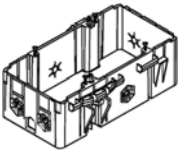


Hager (tehalit)

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	L4719SCHW EAN = 4 012740 264549 142 x 71 x 55	<ul style="list-style-type: none"> For wall ducts from 100 mm top and C-rail, e.g. BR70130 	MS140029 * MS140040BR2 is recommended for new installations
	G2738 EAN = 4 012740 885379 142 x 64 x 55	<ul style="list-style-type: none"> For wall ducts from 80 mm top and C-rail, e.g. BR70100 and BR 70214 	MS140029 * MS140040BR2 is recommended for new installations
	G2860 EAN= 4012740220057 142 x 64 x 42	<ul style="list-style-type: none"> Device installation socket, front-locking, duplex (polyamide) halogenfree, old No. G2705 	MS140029




Kleinhuis

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	KED265 142 x 71 x 59	<ul style="list-style-type: none"> For BS- ducts with 80 mm and 112 mm cable top 	MS140040BR2 * replaces socket
	KD2/50 382 450 01 142 x 71 x 59	<ul style="list-style-type: none"> For BS- ducts with 80 mm and 112 mm cable top Manufacturer Spelsberg 	MS140040BR2 * replaces socket
	KED65D	<ul style="list-style-type: none"> For BS- ducts with 80 mm and 112 mm cable top 2 units required per switch 	MS140029



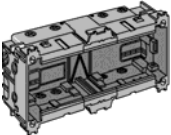

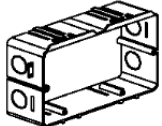
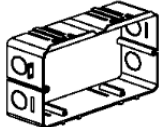
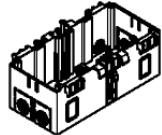
Niedax

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	GDHR 50-2 142 x 82 x 52	<ul style="list-style-type: none"> Front-locking, device installation ducts GK78, installation width 78 mm, steel/Aluminium 	MS140029
	KD2 Cam Lock 12 mm 362 404 01	<ul style="list-style-type: none"> Front-locking, device installation ducts GK78, installation width 78 mm, steel/Aluminium 44 mm height Manufacturer Spelsberg 	MS140029
	KD2/52 (type 52 mm) 382 052 01 142 x 70 x 56	<ul style="list-style-type: none"> For device installation ducts GK100, installation width 110 mm, steel Manufacturer Spelsberg 	MS140040BR2 * replaces socket



Nowaplast

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	KD2/52 382 052 01 142 x 70 x 56	<ul style="list-style-type: none"> Wall ducts PVC/Aluminium/steel FB device installation ducts, HSG device installation ducts Manufacturer Spelsberg 	MS140040BR2 * replaces socket
	KD2 Hook Lock 362 104 01 44 mm height	<ul style="list-style-type: none"> Front-locking, BR wall ducts, installation width 80 mm, BR-PVC, BR-Aluminium, BR-Steel profiled Manufacturer Spelsberg 	MS140029
	KD2 Cam Lock 12 mm 362 194 01	<ul style="list-style-type: none"> Front-locking, BR wall ducts, installation width 80 mm, BR-PVC, BR-Aluminium, BR-Steel profiled Manufacturer Spelsberg 	MS140029



**OBO
BETTERMANN**

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	71GD2 35172NV 160 x 74 x 42,5	<ul style="list-style-type: none"> • Front-locking 	MS140029
	71GD3 35172PV 150 x 74 x 47,5	<ul style="list-style-type: none"> • Front-locking 	MS140029
	71GD7 37087BV 142 x 76 x 51	<ul style="list-style-type: none"> • Front-locking, for S990 cover range 	MS140029
	71GD9 142 x 76 x 51	<ul style="list-style-type: none"> • front-locking, for S990 cover range 	MS140029
	7GD8Z 35172V4 142 x 71 x 62	<ul style="list-style-type: none"> • Type 55 mm for 110 mm duct systems with C-rail 	MS140029 * MS140040BR2 is recommended for new installations
	GED-2 (PVC) 6257 60 5 141 x 78 x 48	<ul style="list-style-type: none"> • Steel/Aluminium wall ducts series GES/GEA 	MS140029
	GED-2 HF (ABS) 6257 62 5 141 x 78 x 48	<ul style="list-style-type: none"> • Steel/Aluminium wall ducts series GES/GEA 	MS140029
	2390/8T2 6270 77 8 141 x 81 x 52	<ul style="list-style-type: none"> • PVC wall ducts series GEK 	MS140029


Rehau

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	KD2/55	<ul style="list-style-type: none"> Wall ducts PVC/Aluminium/steel, signo BK, BS, BA, FBK window sill ducts Manufacturer Spelsberg 	MS140040BR2
	382 055 01		* replaces socket
	142 x 70 x 59		
	KD2 Hook Lock	<ul style="list-style-type: none"> Wall ducts PVC/Aluminium/steel, signo BK, BS, BA Manufacturer Spelsberg 	MS140040BR2
	362 104 01		* replaces socket
	142 x 70 x 59		


Spelsberg

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	TA55-2	<ul style="list-style-type: none"> Type 55 mm for 110 mm duct systems with C-rail 	MS140040BR2
	392 055 01		* replaces socket
	142 x 70 x 61		
	TA50-2 (Type 50 mm)	<ul style="list-style-type: none"> For FB device installation ducts PVC 	MS140040BR2
	392 050 01		* replaces socket
	142 x 70 x 56		

Stago

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	KFR/44	<ul style="list-style-type: none"> Front-locking socket Manufacturer Spelsberg 	MS140029
	362-104		
	44 mm height		

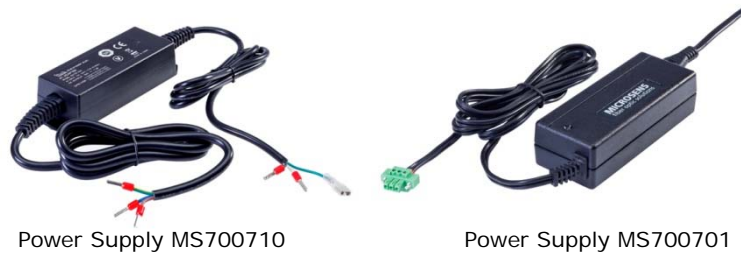
Van Geel

Image	Type/Article No.	Remark	Suitable MICROSENS Installation Set
	KFR/44	<ul style="list-style-type: none">• Front-locking socket• Manufacturer Spelsberg	MS140029
	362-104		
	44 mm height		

* The sides of some sockets are fitted with a mechanism for screw fastening which is required to fix the socket in place in the duct. The sides of these device casings should not be altered. However, as the switch requires sufficient space to take up the cabling, we recommend alternatively using an MS140040BR2 set (device casing not required).

4. Power Supply Installation

Installation components with Power-over-Ethernet functionality require 48 VDC (resp. a 54 VDC power supply for PoE+). This is generally achieved by using an external power supply which is integrated during installation.



4.1 Installation in Wall Ducts

4.1.1 Installation on C-Rail

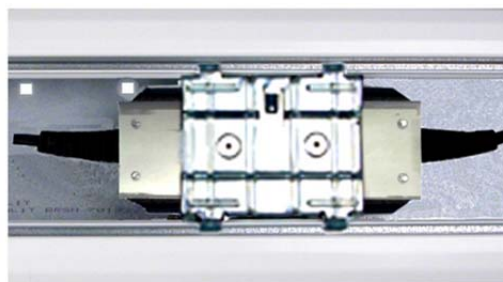
MICROSENS offers its own adapter for C-rail installation. The image below shows an example of such an installation. First, the installation set is fixed to the C-rail and then the power supply is screwed on. The bracket can be ordered by quoting the product number **MS140075-10** which corresponds to the MS700710 power supply.



Power supply MS700710 installed with MS140075-10 in C-rail

4.1.2 Installation in Front-Locking tehalit Ducts

MICROSENS offers a special installation set for front-locking tehalit ducts. The bracket and corresponding power supply are simply snapped onto the assembly track and covered using one of the manufacturer's standard wall duct covers. This installation set can be ordered by quoting the following product number: **MS140075-10F**.





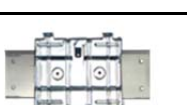

Power supply MS700710 installed with front-locking mounting in tehalit duct

4.1.3 Installation in E2 Socket

Normally a standard E2 wall duct socket is used to house a power supply. This is then simply covered up using the upper duct section, facilitated by the fact that the sockets are generally available in different heights (e.g. 50 and 55 mm). Covering up a socket with the smallest installation depth using the upper duct section does not generally pose a problem. A socket overview is available on page 17f.



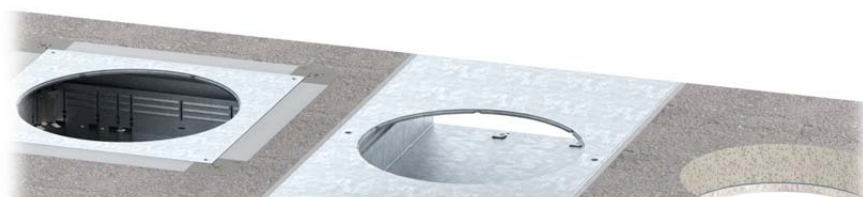
Power supply installed in a standard socket

Image	Remark	Art. No.
	Installation set for power supply installation MS700701 in wall ducts with C-rail, with metal strap for strain relief	MS140075-1
	Installation set for power supply installation MS700710 in wall ducts with C-rail	MS140075-10
	Installation set for front-locking Hager (tehalit) wall ducts 80 mm cover width, for power supply MS700710	MS140075-10F
	Installation set for MS140040UP/HW and OBO ducts in combination with power supply MS700710, set consisting of mounting plate, power supply mounting, cover frame and 3x blind cover	MS140074-OBO
	Power supply installation set for cable duct socket, set consisting of mounting plate, power supply mounting, cover frame and 3x blind cover	MS140076

5. Underfloor Installation

With the introduction of underfloor installation in modern office environments, it is now easy to install inconspicuous power outlets, passive data connections and active installation components throughout – with minimal space requirements.

For underfloor installation we recommend using a vertical MICROSENS installation component model. These models offer optimum cabling management technology without RJ-45 cables getting in the way of neighbouring installation units. The TP connector cables point directly up through the openings in the floor tank cover.



OBO BETTERMANN underfloor device outlet with MICROSENS Gigabit G6 Micro Switch including MS140027 installation set

5.1 Installation Sets for Ackermann Underfloor Systems

The MS140026 and MS140027 sets are needed to install MICROSENS System 45 x 45 installation components in an OBO BETTERMANN underfloor system. Both sets can accommodate three 45 x 45 modules. Which set is required, depends on the specific device outlet in question.



Image	Remark	Art. No.
	Installation set consisting of socket (165 mm length), device support and 1x 45 mm blind cover Scope of delivery: parts pre-assembled	MS140026
	Installation set consisting of socket (208 mm length), device support, 1x 45 mm blind cover, 1x socket cover Scope of delivery: parts pre-assembled	MS140027
	Replacement-/individual part for MS140026 consisting of device support and blind cover	MS140024
	Replacement-/individual part for MS140027 consisting of device support, 45 mm blind cover, socket cover	MS140025
	Replacement-/individual part for MS140027 consisting of one device support	MS140027-1

5.2 Ackermann Sockets

Socket	Image	Remark	Suitable MICROSENS Installation Set
GES2		For installation of MS140026 (1x)	MS140026
GES4		For installation of MS140026 (up to 2x)	MS140026
GES6		For installation of MS140026 (up to 3x)	MS140026
GESR7		For installation of MS140026 (up to 2x) and MS140027 (1x)	MS140026 MS140027
GES9		For installation of MS140027 (up to 3x)	MS140027
GRAF9		For installation of MS140027 (up to 3x)	MS140027

MICROSENS GBE G6 Switch in OBO BETTERMANN Floor Tank



Floor tank (open)








Floor tank (closed)

5.3 electraplan Supply Units

All the electraplan supply units listed below can be used in combination with a GTVR400 device casing. This casing is fitted with a 45 mm snap-on rail to which all MICROSENS installation components can be simply attached – without the need for further tools.

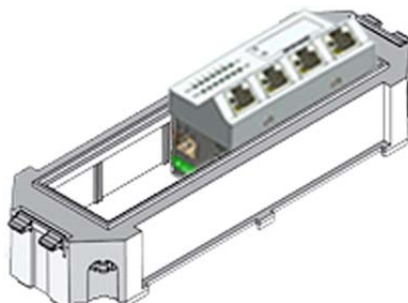
For older electraplan supply units ("hinged cover"), which were available until 2008, you will need to use an MS140021 set which includes a device casing specially designed to match this particular model.





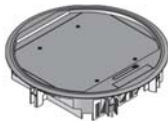
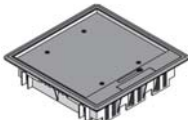

Supply Unit	Image	Remark
VR10		For installation of GTVR400 (1x)
VR12		For installation of GTVR400 (up to 3x)
VANR12		For installation of GTVR400 (up to 3x)
VQ12		For installation of GTVR400 (up to 3x)
EKQ12		For installation of GTVR400 (up to 3x)

5.4 PUK Underfloor Systems


All the PUK underfloor systems listed below can be used in combination with an **MS140121-KU** installation set. The set includes a casing which is fitted with a 45 mm snap-on rail to which all 45 x 45 installation components can be simply attached – without the need for further tools.



Supported Underfloor Systems

Type	Image	Remark
UEKD2-R		For installation of MS140121-KU (up to 2x)
UEBD2-R		
UEKD2-V		For installation of MS140121-KU (up to 2x)
UEBD2-V		
UEKD3-R		For installation of MS140121-KU (up to 3x)
UEBD3-R		
UEKD3-V		For installation of MS140121-KU (up to 3x)
UEBD3-V		
UEKDD-V-E		For installation of MS140121-KU (up to 3x)

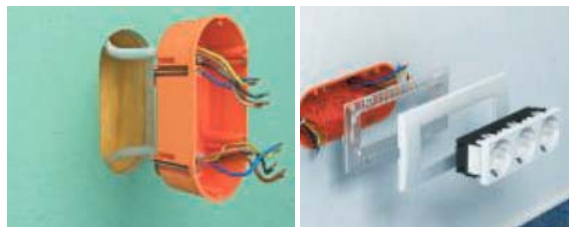
Ordering Information

Image	Remark	Art. No.
	Installation set for PUK (three-part), consisting of device casing and 2x 45 mm blind cover	MS140121-KU

6. Wall Installation

It is important to distinguish between the following types of wall installation:

- **Hollow wall installation:** For a hollow wall installation the socket is inserted into an opening which has been specially drilled to size. The device support, switch and cover frame are then mounted accordingly.



- **Concealed installation:** This option involves plastering the socket into the wall whilst using a cover to prevent the inside of the socket from dirt. The device support, switch and cover frame are then mounted accordingly.



- **Surface mounting:** Surface mounting includes all installations carried out on top of the actual wall surface. The big advantage of this type of installation is the low expenditure required.



6.1 Installation Set for Hollow Wall Installation

This hollow wall installation set consists of four components specially designed for compatibility with our System 45 x 45 and offering plenty of space for integrating MICROSENS installation components. This set is designed with a triple 45 mm frame, allowing for easy access when connecting up power and fiber optic cables. The set also includes one blind cover.

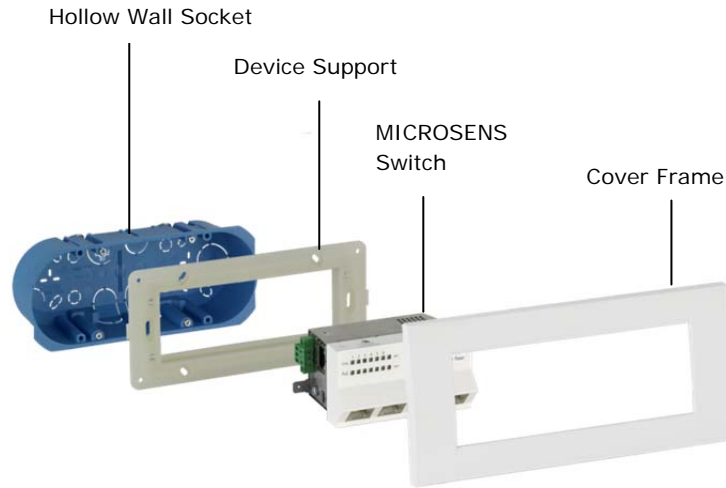


Image	Remark	Art. No.
	Hollow wall socket triple, support plate, cover frame and blind cover Socket dimensions: 184 x 67 x 50	MS140040HW
	Installation set for triple OBO UP-, OBO HW, device casing or bticino triple concealed casing, set consisting of support plate, cover frame and blind cover	MS140040S

* Further colours upon request



Micro Switch with cover installed in a hollow wall socket

6.2 Installation Set for Concealed Wall Installation

This concealed wall installation set consists of four components specially designed for compatibility with our System 45 x 45 and offering plenty of space for integrating MICROSENS installation components. This set is designed with a triple 45 mm frame, allowing for easy access when connecting up power and fiber optic cables. The set also includes one blind cover.

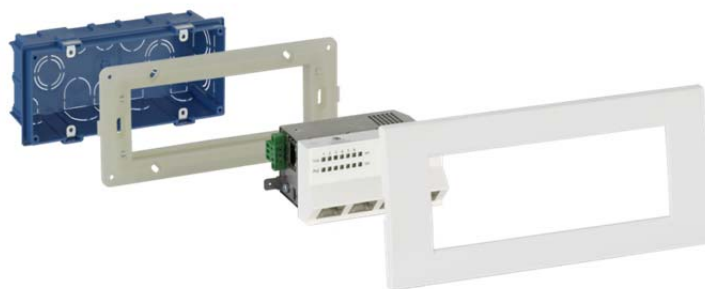


Image	Remark	Art. No.
	Hollow wall socket triple, support plate, cover frame and blind cover Socket dimensions: 180 x 67 x 53	MS140040UP
	Installation set for triple OBO UP-, OBO HW, device casing or bticino triple concealed casing, set consisting of support plate, cover frame and blind cover	MS140040S

* Further colours upon request




Micro Switch with cover installed on a hollow wall socket

6.3 Installation Set for KAISER Device Casings

This two-component set contains an adapter plate with a 45 x 45 track which can be used to insert a Micro Switch and corresponding cover frame without the need for further tools. The adapter plate has been specially developed for KAISER device casings. An overview of matching sockets is available on the next page.



Image	Remark	Art. No.
	Installation set for KAISER device casings consisting of an adapter plate and suitable duplex cover frame	MS140045


* Further colours upon request







Micro Switch with cover installed in an hollow wall socket

6.4 Alternative Hollow Wall, Concealed and Surface Mounting Sockets

F-tronic

Image	Type/Article No. Dimensions L x W x D (mm)	Remark	Suitable MICROSENS Installation Set
	E118 143 x 67 x 47	<ul style="list-style-type: none"> • Suited for hollow wall and concealed installation • When installing use core cutter with edge countersink without fail • Burr hole Ø 2x 68 mm 	MS140045

KAISER

Image	Type/Article No. Dimensions L x W x D (mm)	Remark	Suitable MICROSENS Installation Set
	9062-94 143 x 67 x 75	<ul style="list-style-type: none"> • Electronic-Socket for: hollow walls and concealed nstallation (deep version, air-tight) • Colour: orange • Burr hole Ø 2x 68 mm 	MS140045
	9062-74 143 x 67 x 75	<ul style="list-style-type: none"> • Electronic-Socket for: hollow walls and concealed nstallation (deep version, air-tight) • Colour: white • Burr hole Ø 2x 68 mm 	MS140045
	9062-02 143 x 67 x 47	<ul style="list-style-type: none"> • Electronic-Socket for: hollow walls and concealed installation • Colour: orange • Burr hole Ø 2x 68 mm 	MS140045
	9062-77 143 x 67 x 47	<ul style="list-style-type: none"> • Electronic-Socket for: hollow walls and concealed nstallation • Colour: white • Burr hole Ø 2x 68 mm 	MS140045

6.5 Universal, Modular Aluminium-Chassis

MICROSENS' versatile, modular Aluminium-chassis is the ideal solution for all workstations which cannot be supplied via a wall duct or floor tank.



Universal installation options include:

- Wall/surface mounting
- Desk installation (using a desk clamp)
- Installation underneath the desk top
- Installation in a false floor

The chassis has been specially designed for compatibility with our System 45 x 45 and can be accessed from the front and both sides. Various lengths are available, in steps corresponding to the 45 modules. Please refer to page 45f for details on matching accessories, such as cable feeders, passive module components and corresponding installation brackets.

Upon request, customer-specific configurations can be built either using MICROSENS installation components or passive power and data connection equipment.



Image	Remark	Art. No.
 MS140131-GT graphitgrau	For up to four 45 x 45 modules, includes chassis and 2x 45-blind cover	MS140131-GT/RW-4
 MS140131-RW reinweiß	For up to five 45 x 45 modules, includes chassis and 2x 45-blind cover	MS140131-xx-5
	For up to six 45 x 45 modules, includes chassis and 2x 45-blind cover	MS140131-xx-6
	For up to seven 45 x 45 modules, includes chassis and 2x 45-blind cover	MS140131-xx-7




Micro Switch in MS140131-GT-5-Chassis with table clamp

6.6 RAPID 45 Surface Installation Set

The perfect set for easily installing a MICROSENS installation switch. This model, which is simple in design and very easy to install, offers sufficient storage space to be able to perfectly hide all the required cabling.



Image	Remark	Art. No.
	Set consisting of 45 x 45 installation duct with top and endpieces for closure, dimensions 53 x 100 x 250 mm, pure white RAL9010	MS140090

*Also available in longer version (upon request)



GBE G6 switch installed in MS140090

6.7 Metal Surface Chassis

This high-quality, stainless steel chassis is ideal for surface installation. There is a range of chassis to choose from – with one to six duplex module spaces. This allows additional power outlets, resp. passive data sockets, to be installed alongside an installation switch. The chassis can be mounted either horizontally or vertically.

Please refer to page 45f for a list of components which can be integrated into these additional modules.



Image	Remark	Art. No.
	Stainless steel surface mount chassis with 1 duplex module space, acceptance of MICROSENS 45 x 45 installation components and/or passive power and data sockets in System 45 x 45 design	MS140139-1
	Stainless steel surface mount chassis with 2 duplex module spaces, please refer to MS140039-1 for further characteristics	MS140139-2
	Stainless steel surface mount chassis with 3 duplex module spaces, please refer to MS140039-1 for further characteristics	MS140139-3
	Stainless steel surface mount chassis with 4 duplex module spaces, please refer to MS140039-1 for further characteristics	MS140139-4
	Stainless steel surface mount chassis with 5 duplex module spaces, please refer to MS140039-1 for further characteristics	MS140139-5
	Stainless steel surface mount chassis with 6 duplex module spaces, please refer to MS140039-1 for further characteristics	MS140139-6



7. Furniture Installation

For users who do not have any wall ducts or floor tanks installed, resp. who have no desire to install them in arrears, this category offers a wealth of solutions. Here you will find practical easy-to-install options and attractive designs for numerous applications, including office desks, laboratories, cupboards and counter tops.





7.1 Furniture Inlet Casing

This installation set is easily installed by simply inserting it into a specially-made opening set into the surface of the respective item of furniture. This space-saving and stylish solution allows a Micro Switch to be accommodated close to the user. MICROSENS offers a choice of two models depending on the depth of the inlet: One with cable outlets at the rear and one with lateral cable outlets – both solutions providing plenty of space for accommodating the cabling. An additional fixing set is also optionally available.

Examples of different installation options: Set into a desk, cupboard or counter top.

Please refer to page 45f for a list of components which can be integrated into these additional modules.



Image	Remark	Art. No.
	Integrated furniture chassis with five System 45 x 45 spaces for fitting MICROSENS 45 x 45 installation components and/or passive power or data sockets, polished chrome-plated steel cover, cable exit on rear side, for tabletops with blade thickness 10...24 mm	MS140128R-5
	Integrated furniture chassis with five System 45 x 45 spaces for fitting MICROSENS 45 x 45 installation components and/or passive power or data sockets, polished chrome-plated steel cover, cable exit on the side, for tabletops with blade thickness 10...24 mm	MS140128S-5
	Mounting set for MS140128S/R	MS140128-FAST






MS140128R/2-5 ready-to-use table installation

7.2 Retractable & Modular Aluminium-Pillar

This installation set is an excellent solution for conference rooms as the whole unit, including all the active equipment, simply retracts into the table. Due to the 45 x 45 socket rail design, all MICROSENS installation components are perfectly housed in the chassis which also offers plenty of space for additional modular components, such as power outlets. The cover is available in either graphite or silver.

Please refer to page 45f for a list of components which can be integrated into these additional modules.



Image	Remark	Art. No.
	For up to four 45 x 45 modules, set includes chassis, 2x ½ 45-blind covers and a 45-blind cover Colour: graphite	MS140122-GT-4
	For up to five 45 x 45 modules, set includes chassis, 2x ½ 45-blind covers and a 45-blind cover Colour: graphite	MS140122-GT-5
	For up to six 45 x 45 modules, set includes chassis, 2x ½ 45-blind covers and a 45-blind cover Colour: graphite	MS140122-GT-6
	For up to seven 45 x 45 modules, set includes chassis, 2x ½ 45-blind covers and a 45-blind cover Colour: graphite	MS140122-GT-7
	Cover: graphite	MS140124-GT
	Cover: silver	MS140124-AL



MS140122 pillar, retracted in table



Micro Switch installed in an MS140122-GT pillar



8. Industrial Installation

Industrial applications generally pose a special challenge when it comes to physically installing active components. MICROSENS offers a range of accessories which are ideally suited to these areas of application.

8.1 Hat Rail Installation

MICROSENS has several sets on offer which can be used to attach an Micro Switch to a hat rail (resp. distribution panel) by simply snapping the installation components onto a 35 mm DIN rail. The installation set consists of an adapter plate (different plates are used for Fast Ethernet and Gigabit Ethernet) and a plastic bracket to which a 35 mm DIN rail can be attached. The plastic bracket can be set at different 90° angles.



Image	Remark	Art. No.
	Hat rail mounting for 45 x 45 installation components (Fast Ethernet), for 35 mm DIN-rails, device mounted by screws (factory-provided) *The switch orientation follows the hat rail orientation	MS140805
	Hat rail mounting for 45 x 45 installation components (Generation 6), for 35 mm DIN-rails, device mounted using snap-in mounting *Variable orientation of the G6 switch (horizontal/vertical)	MS140805-G6







Horizontal switch installation on DIN-rail






Micro Switch vertical version + MS140805-G6 on hat rail

9. System 45 x 45 Accessories





9.1 Blind Covers

Image	Remark	Artikel No.
	Blind cover System 45 x 45, pure white	MS140033-RW
	Blind cover System 45 x 45, graphite	MS140033-GT
	Blind cover System 45 x 45, black	MS140033-BK
	Blind cover System 45 x 45, Aluminium lacquered	MS140033-AL
	Blind cover 1/2 System 45 x 45, pure white	MS140034-RW
	Blind cover 1/2 System 45 x 45, graphite	MS140034-GT











9.2 Power Sockets

Image	Remark	Artikel No.
	Schuko socket 45°, graphite, RAL 7021	MS140174-GT
	Schuko socket 45°, pure white	MS140174-RW
	Schuko socket 45°, Aluminium lacquered	MS140174-AL
	Socket with grounding terminal 45°, graphite, RAL 7021	MS140174-GT-F
	Socket with grounding terminal 45°, pure white	MS140174-RW-F
	Socket with grounding terminal 45°, Aluminium lacquered	MS140174-AL-F






9.3 Cable Feeds

Image	Remark	Artikel No.
	Opening for miniature cable duct 20 x 20 mm, graphite	MS140162-GT
	With integrated Schuko socket, graphite	MS140150-GT
	With cable conduit 2x Ø 13 mm + 4x Ø 6 mm, graphite	MS140161-GT
	With cable conduit per hood, graphite	MS140160-GT

9.4 Further System 45 x 45 Installation Components

Image	Remark	Artikel No.
	Schuko plug, male, System 45 x 45	MS140150-GT
	Schuko plug, female, System 45 x 45	MS140151-GT
	Wieland-connection, male, 1/2 System 45 x 45	MS140153-GT
	Wieland-connection, female, 1/2 System 45 x 45	MS140154-GT
	Wieland snap-in connection, 1/2 System 45 x 45	MS140155-GT
	Wieland snap-in connection, System 45 x 45	MS140156-GT
	Wieland snap-in for two connections, System 45 x 45	MS140157-GT
	GEIM SCCR002/14 Wieland-connection, male	
	GEIM SCCR001/14 Wieland-connection, female	
	Device power cable GST18-3S, female, Schuko plug, 3x 2,5mm ² black	MS190105

9.5 Mounting Options for MS140131

Image	Remark	Artikel No.
	Undertable installation set	MS140142
	Intermediate set, support for two chassis	MS140143
	Screw clamp for mounting at the switch	MS140144
	DIN-rail support	MS140145
	Support magnet, one piece. A minimum of two pieces is required.	MS140146

MICROSENS

fiber optic solutions

euromicron group

MICROSENS GmbH & Co. KG

Kueferstr. 16

59067 Hamm/Germany

Tel.: +49 2381/9452-0

Fax: +49 2381/9452-100

E-Mail: sales@microsens.com

Web: www.microsens.com