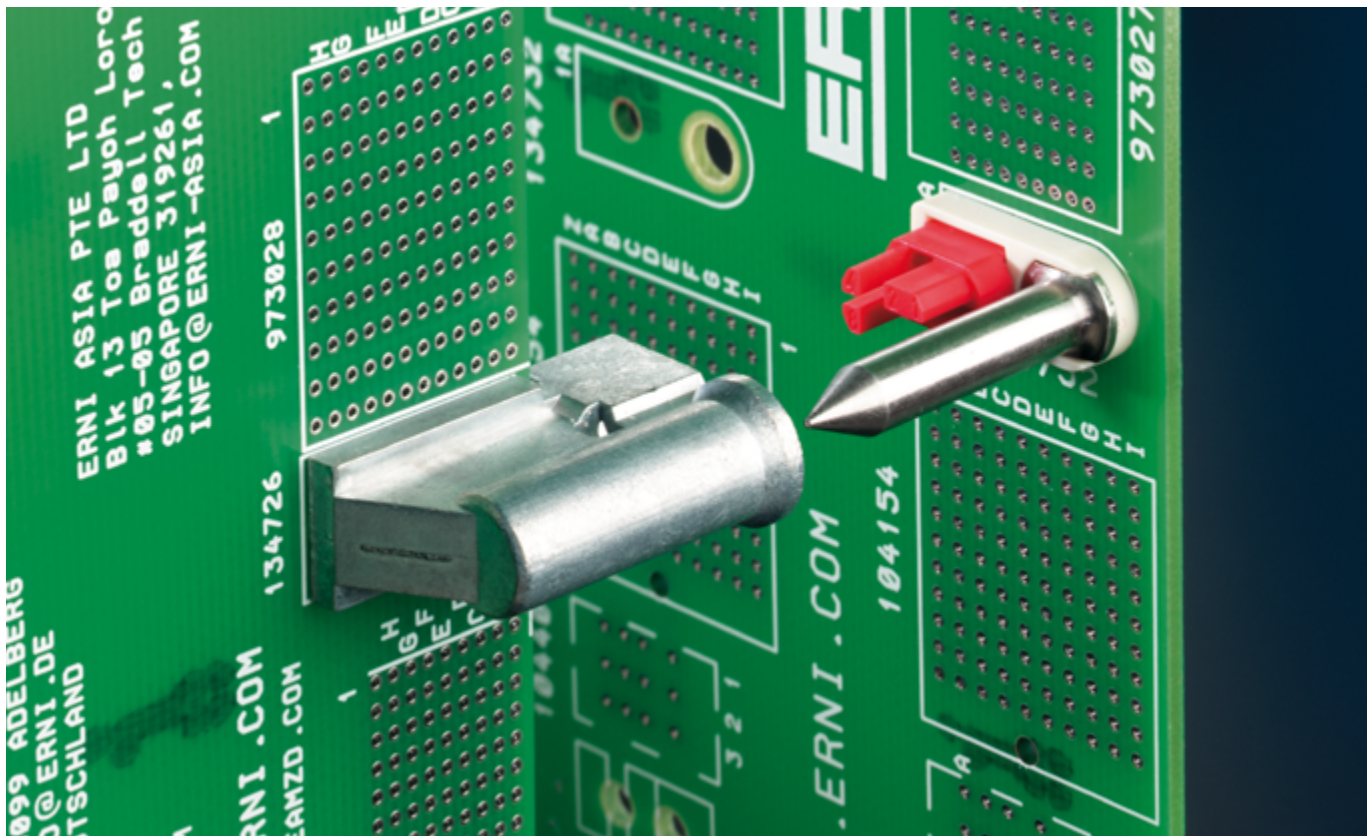


# ERNI

## Pre-Alignment Modules

Provides reliable connection, coding and grounding of plug-in cards



ERNI has developed a solution to the dilemma posed by high pin-count hard-metric (HM) connectors and the need for precision connector mating combined with sufficient play between subrack guide rails and printed-circuit board (PCB) cards. The answer is ERNI's pre-alignment module.

According to the IEC 61076-4-101 standard, a 2mm HM connector may have hundreds of contacts. At the same time, the plug-in board connectors and backplane connectors must mate precisely in order to avoid damage. On the other hand, there must be play between the cards and rails to avoid compression stress on the PCB.

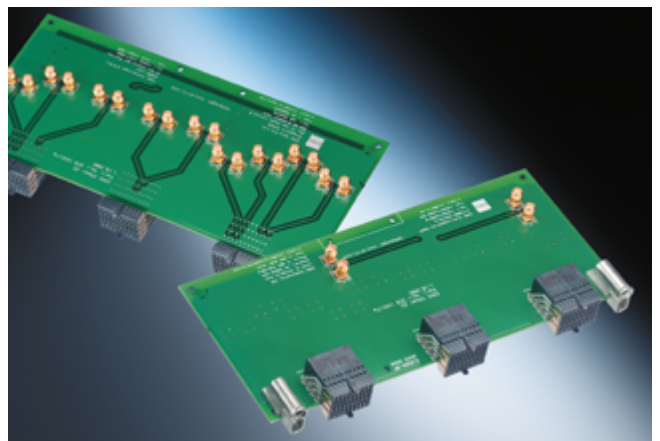
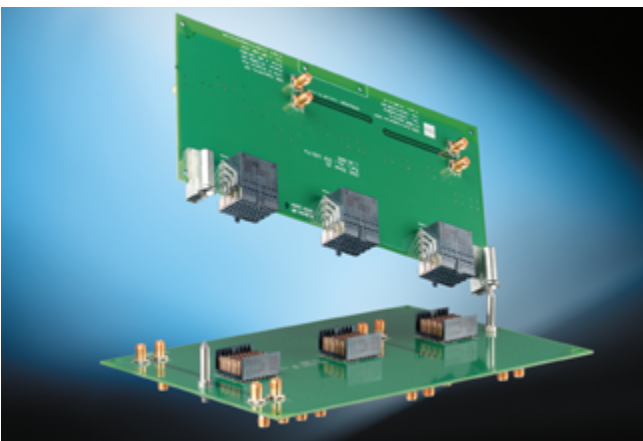
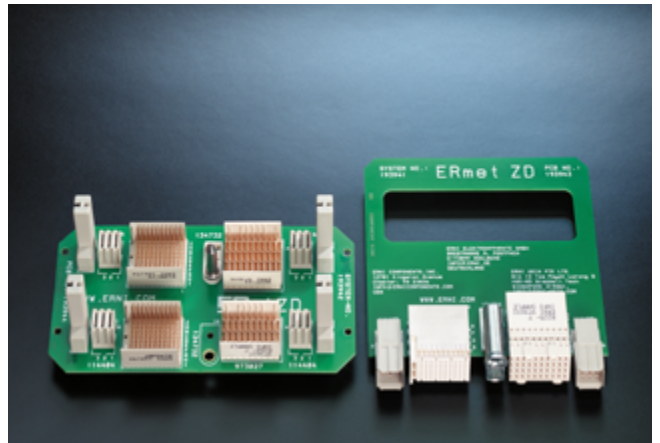
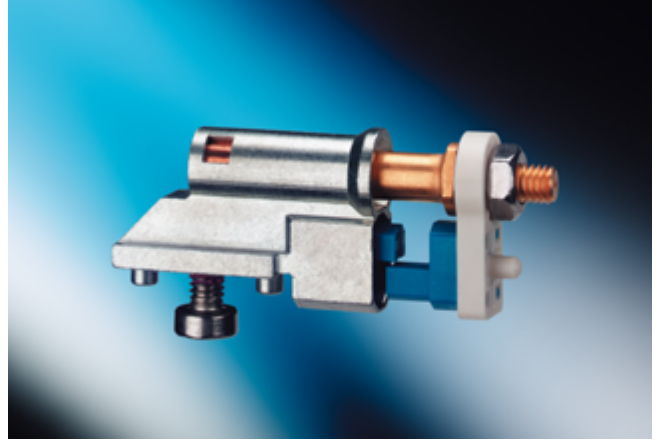
ERNI's pre-alignment module consists of solid metal guides and new guiding systems that offer several optional functions. For example, there is a kit available with an integrated socket for HM "coding" keys. Thus no coding on the connector side is needed, which offers more room for signal contacts. In addition, there are flattened pre-alignment pins designed to match their mating connector counterparts. Using an octagonal pattern, it will support eight additional coding options.

A further reasonable additional option is the electrical contact model. Shielding is low resistant because of gold plating, and therefore allows electric current to flow with 40A at 20°C

through a large diameter. A corresponding derating curve is available. This large pin diameter enables a wide capture range of >2mm. The PCB is adequately centred and guided as a result of the appropriate length.

The pre-alignment pin with fastening thread is fastened on the backplane and is available for PCB thicknesses of 2.5 to 6mm, and 6 to 8mm. The guide bush is mounted on the daughter card with an M4 or M5 screw. The PCB thickness for the daughter card can be 1.6 to 3.5mm, or 3.5 to 5.5mm.

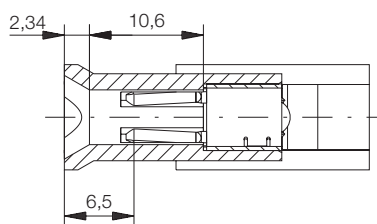
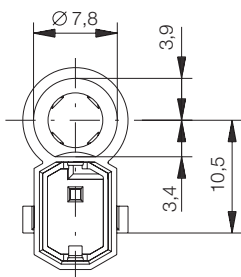
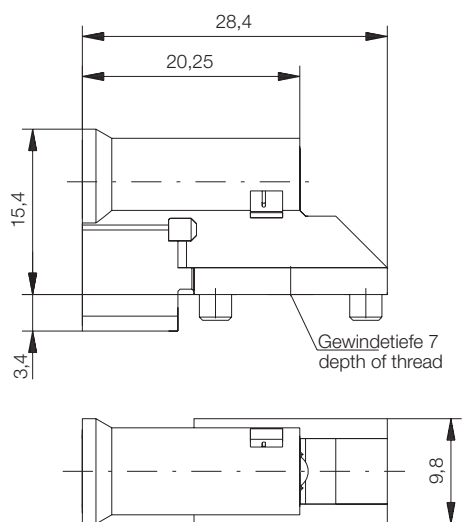
## Applications



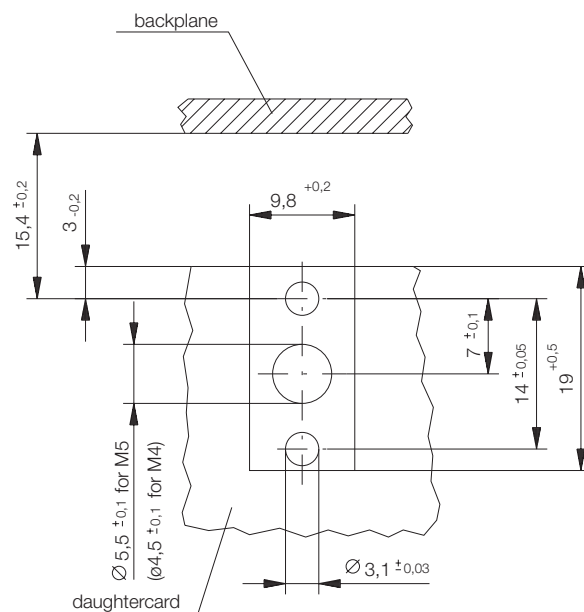
## Pre-alignment Modules with Electrical Contact

### Guide Bush

#### Dimensional Drawing



#### Layout



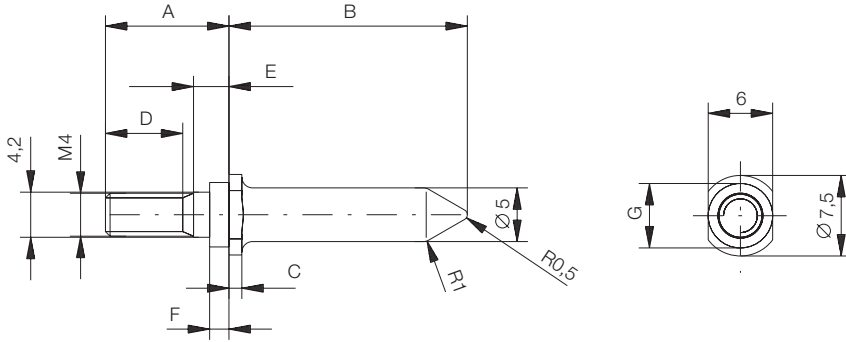
#### Ordering Informations

Description	Part Number
Guide bush with thread M4	144641
Kit (Guide bush M4, screw M4x8 with thread locker)	164307

Kit M5 on request.

## Guiding Pin Gold Plated

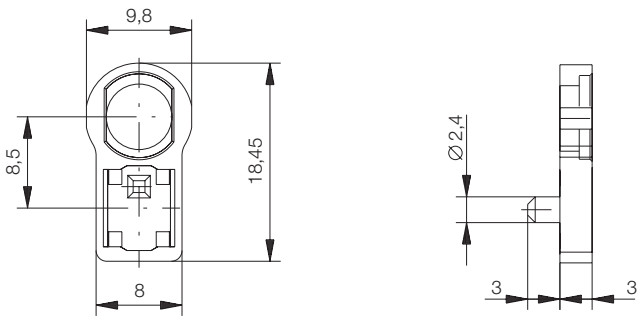
### Dimensional Drawing



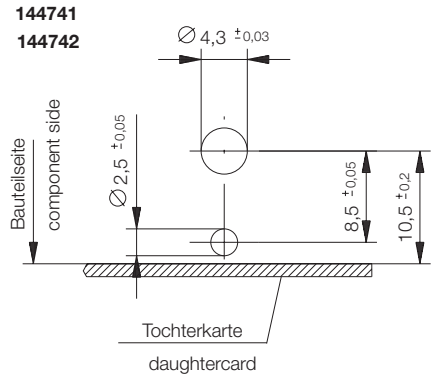
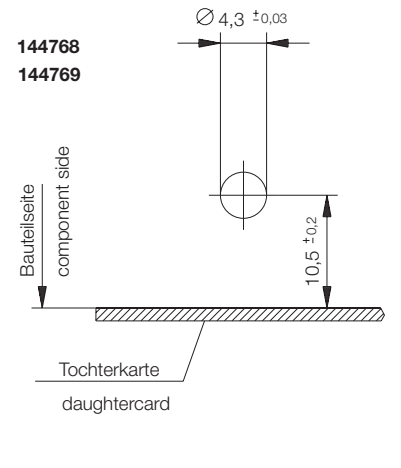
144769	12	24	3	6.5	4.5	—	—	6 - 8
144742	13.8	22.2	1.2	6.5	6.3	1.8	∅6	6 - 8
144768	9.7	24	3	7.2	1.5	—	—	2.5- 6 <sup>1)</sup>
144741	11.5	22.2	1.2	7.2	3.3	1.8	∅6	2.5- 6 <sup>1)</sup>
Ident-Nr. Part-No.	A	B	C	D	E	F	G	Backplanestärke thickness of backplane

1) unter 3.2mm zusätzlich Unterlegscheibe verwenden.  
up to 3.2mm use washer additional.

### Base Plate



### Layout



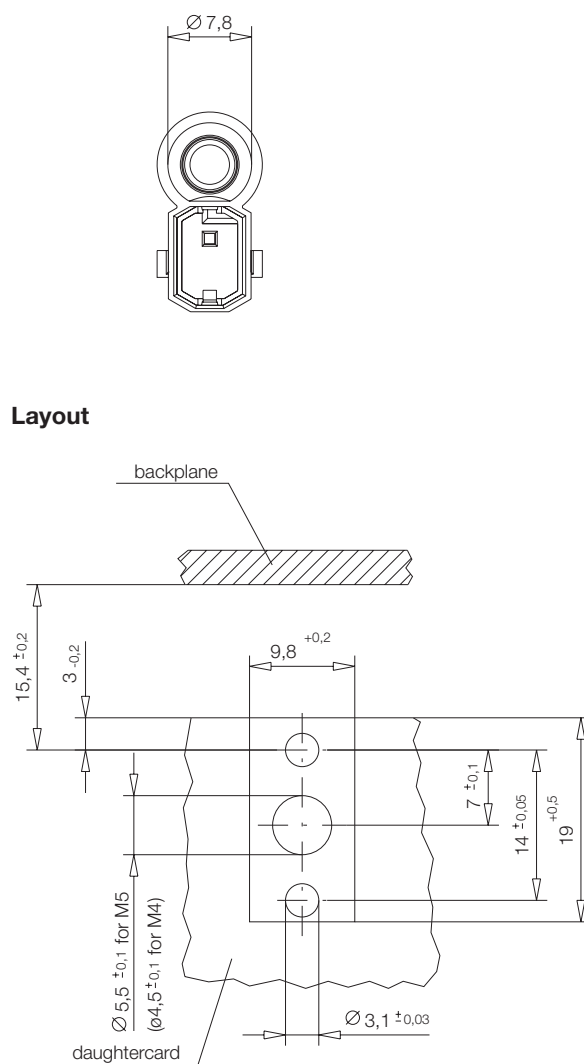
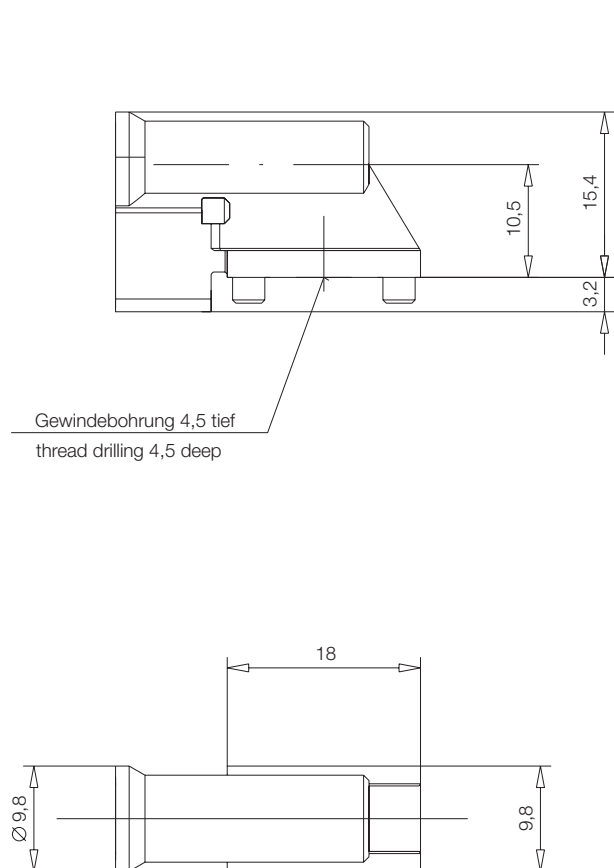
### Ordering Informations

Description	PCB Thickness	Part Number
Guiding pin to fit on backplane without base plate	2.5 - 6.0mm	144768
Guiding pin to fit on backplane without base plate	6.0 - 8.0mm	144769
Guiding pin use only with base plate	2.5 - 6.0mm	144741
Guiding pin use only with base plate	6.0 - 8.0mm	144742
Kit without base plate (Guiding pin, washer, nut M4)	2.5 - 6.0mm	214361
Kit without base plate (Guiding pin, washer, nut M4)	6.0 - 8.0mm	214362
Kit with base plate (Guiding pin, washer, nut M4, base plate)	2.5 - 6.0mm	214363
Kit with base plate (Guiding pin, washer, nut M4, base plate)	6.0 - 8.0mm	214364
Base plate		134734

## Pre-alignment Modules without Electrical Contact

### Guide Bush

#### Dimensional Drawing



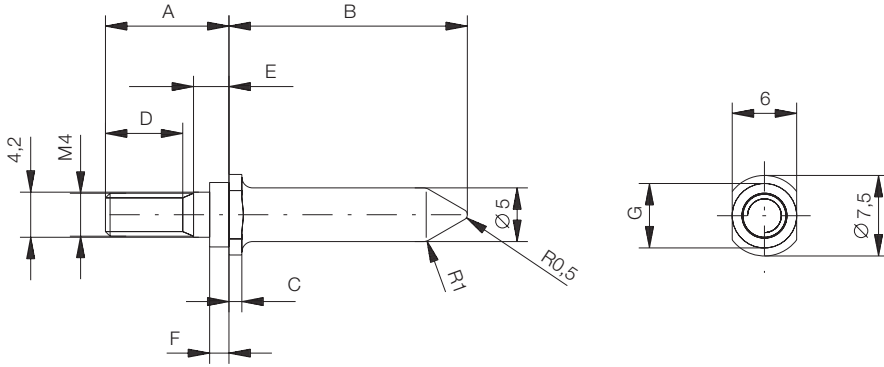
#### Ordering Informations

Description	Part Number
Guide bush with thread M4	154058
Guide bush with thread M5	134726
Kit for PCB thickness 1.5 - 2.0mm (Guide bush M5, screw M5x6, washer)	144127
Kit for PCB thickness 2.0 - 4.5mm (Guide bush M5, screw M5x8, washer)	144128

Kit M4 on request.

## Guiding Pin

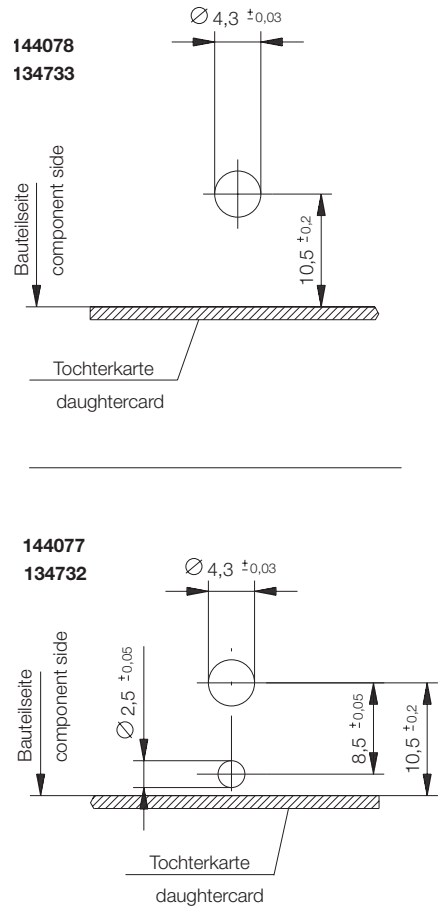
### Dimensional Drawing



144078	12	24	3	6.5	4.5	—	—	6 - 8
144077	13.8	22.2	1.2	6.5	6.3	1.8	ø6	6 - 8
134733	9.7	24	3	7.2	1.5	—	—	2.5- 6 <sup>1)</sup>
134732	11.5	22.2	1.2	7.2	3.3	1.8	ø6	2.5- 6 <sup>1)</sup>
Ident-Nr. Part-No.	A	B	C	D	E	F	G	Backplanestärke thickness of backplane

1) unter 3.2mm zusätzlich Unterlegscheibe verwenden.  
up to 3.2mm use washer additional.

### Layout



### Ordering Informations

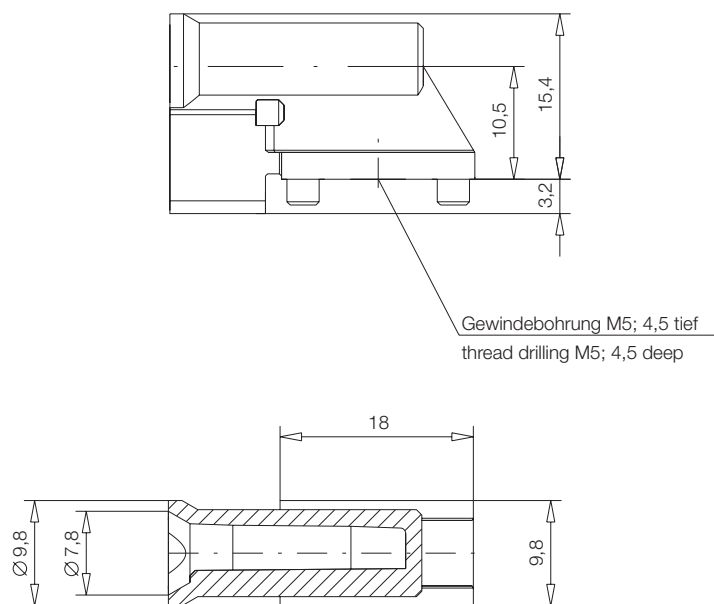
Description	PCB Thickness	Part Number
Guiding pin to fit on backplane without base plate	2.5 - 6.0mm	134733
Guiding pin to fit on backplane without base plate	6.0 - 8.0mm	144078
Guiding pin use only with base plate	2.5 - 6.0mm	134732
Guiding pin use only with base plate	6.0 - 8.0mm	144077
Kit without base plate (Guiding pin, washer, nut M4)	2.5 - 6.0mm	144370
Kit without base plate (Guiding pin, washer, nut M4)	6.0 - 8.0mm	144371
Kit with base plate (Guiding pin, washer, nut M4, base plate)	2.5 - 6.0mm	144131
Kit with base plate (Guiding pin, washer, nut M4, base plate)	6.0 - 8.0mm	144132
Base plate		134734

Additional versions upon request.

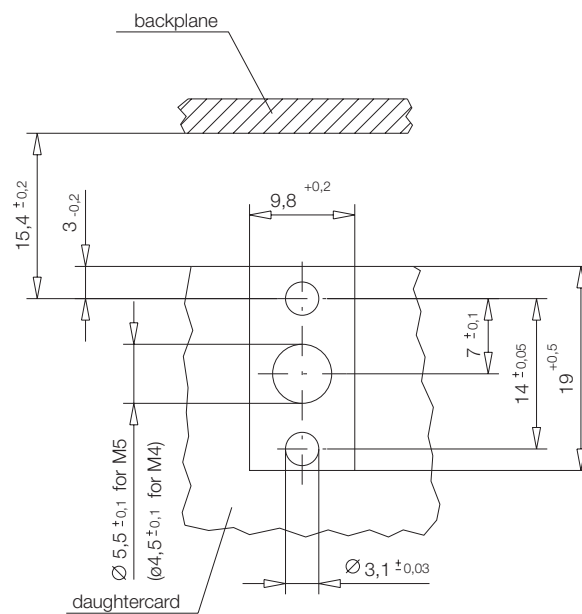
## Pre-alignment Modules with Coding

### Guide Bush

#### Dimensional Drawing



#### Layout



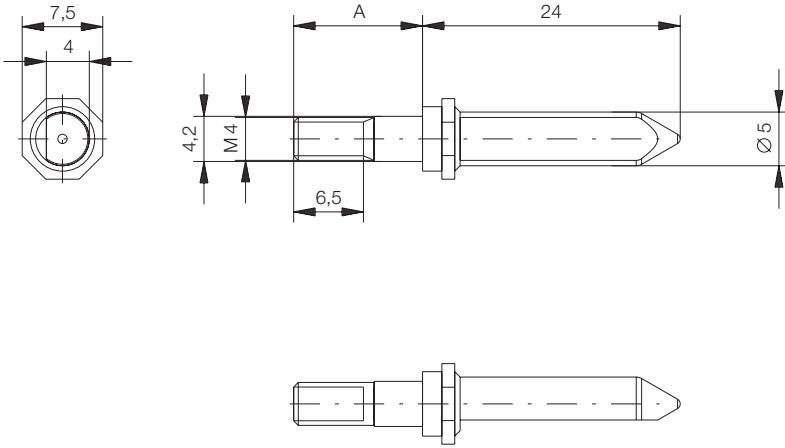
#### Ordering Informations

	Description	Component Part Number	Kit <sup>1)</sup> Part Number
	Guide bush with coding 0°/360°	194548	204399
	Guide bush with coding 45°	194547	204398
	Guide bush with coding 90°	194546	204397
	Guide bush with coding 135°	194553	204404
	Guide bush with coding 180°	194552	204403
	Guide bush with coding 225°	194551	204402
	Guide bush with coding 270°	194550	204401
	Guide bush with coding 315°	194549	204400

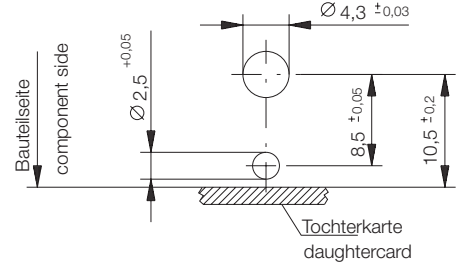
<sup>1)</sup>Kit with screw M5x6 and washer.

# Guiding Pin

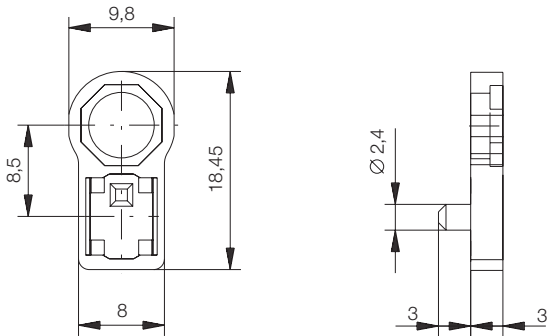
## Dimensional Drawing



## Layout



## Base Plate



## Ordering Informations

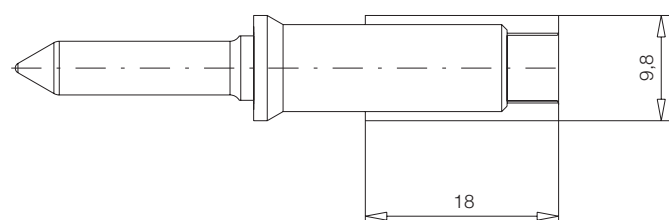
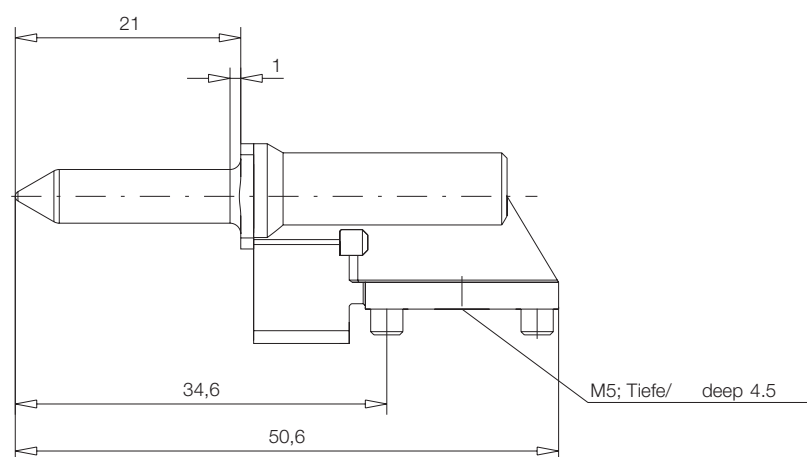
Description	Part Number
Guiding pin	194543
Base plate	194542
Kit (Guiding pin, base plate, washer, nut M4)	204395



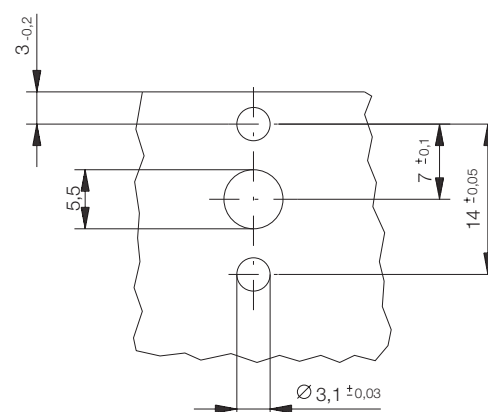
## Pre-alignment Modules Inverse

### Pin with Guide Bush

#### Dimensional Drawing



#### Layout



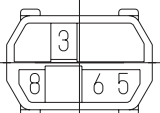
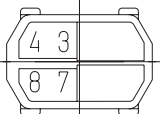
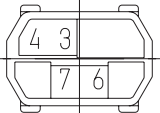
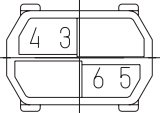
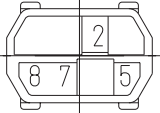
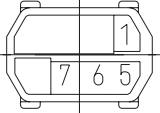
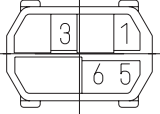
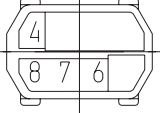
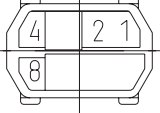
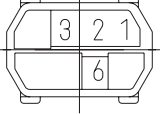
#### Ordering Informations

Description	Part Number
Kit (Pin with guide bush)	204219

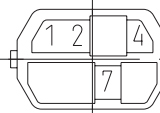
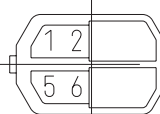
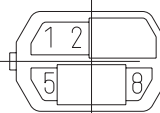
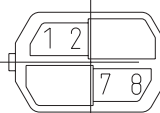
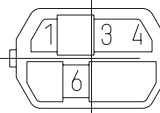
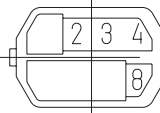
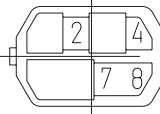
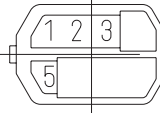
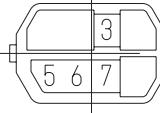
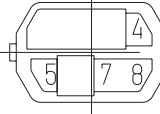
Piece parts on request.

## Coding Keys

### Coding Keys for Base Plate

Coding Key	Color	Part Number
	Pastel Orange RAL 2003 Fincke 00233197	043342
	Steel Blue RAL 5011 Fincke 00251197	043343
	Slate Gray RAL 7015 Fincke 00235197	043344
	Cadmium Yellow RAL 1021 Fincke 00252197	043345
	Reseda Green RAL 6011 Fincke 00237197	043346
	Brilliant Blue RAL 5007 Fincke 00245197	043347
	Blue/Lilac RAL 4005 Fincke 00246197	043348
	Ocher Yellow RAL 1024 Fincke 00313197	043349
	Strawberry Red RAL 3018 Fincke 00312197	043350
	Hazel RAL 8011 Fincke 00272197	043351

### Coding Keys for Guide Bush

Coding Key	Color	Part Number
	Pastel Orange RAL 2003 Fincke 00233197	043332
	Steel Blue RAL 5011 Fincke 00251197	043333
	Slate Gray RAL 7015 Fincke 00235197	043334
	Cadmium Yellow RAL 1021 Fincke 00252197	043335
	Reseda Green RAL 6011 Fincke 00237197	043336
	Brilliant Blue RAL 5007 Fincke 00245197	043337
	Blue/Lilac RAL 4005 Fincke 00246197	043338
	Ocher Yellow RAL 1024 Fincke 00313197	043339
	Strawberry Red RAL 3018 Fincke 00312197	043340
	Hazel RAL 8011 Fincke 00272197	043341