

Schalter und  
Eingabeelemente.  
Individuelle Bauteile nach  
Ihren Anforderungen.



Switches And Data  
Input Units.  
Custom Components  
According To Your  
Requirements.



# PRINTHART

## Dreh-Codierschalter

Mit Schaltern dieser Baureihe erhalten Sie modernste Technik für die industrielle Anwendung. Stabile Anschlussstifte gewährleisten eine problemlose Montage und eine sichere Verbindung.

Die Kontakte haben eine abriebfeste Hartgoldauflage. Der Übergangswiderstand ist gering und gleichbleibend.

Die Schalter sind mit 10 oder 16 Schaltstellungen in den Standard-Codierungen BCD, BCD Complement, Hexadezimal und Hexadezimal Complement lieferbar.

Bei den Typen P36 und PT65 sind auch Schalter mit 4, 6 und 8 Schaltstellungen auf Anfrage erhältlich.

Die Typen P36 und P60A werden zusätzlich in SMT- und Through Hole Reflow-Ausführungen angeboten. Neben dem Anschluss-System „3 + 3“ mit zwei Zuführungen und beidseitigen Ausgangsleitungen wird mit dem Typ P60A das Anschluss-System „4 + 1“ angeboten. Dieses System hat auf der einen Anschluss-Seite eine Zuleitung und auf der gegenüberliegenden Seite vier Ausgangsleitungen.

Bei allen Typen sind verschiedene Bedienelemente standardmäßig erhältlich. Somit sind Lösungen für die meisten Anwendungen bereits vorhanden.

Ein präzises Rastwerk und gut lesbare Ziffern vereinfachen die Bedienung. Eine nach ISO 9001:2000 ausgerichtete Fertigung und die elektronische Endkontrolle eines jeden Schalters garantieren die zuverlässige Funktion.

Hartmann Dreh-Codierschalter finden im gesamten Bereich der Elektrotechnik Anwendung.

**Nicht immer können die Aufgaben mit Standard-Schaltern gelöst werden. Mehr und mehr werden spezielle Ausführungen benötigt.**

Wir sind bereit und aufgrund des vorhandenen Know-How's und der Fertigungstiefe auch in der Lage, auf Ihre Wünsche einzugehen.

Sprechen Sie uns bitte deshalb auch an, wenn Sie in diesem Katalog nicht den für Ihre Zwecke optimalen Schalter finden.

Mit Ihnen zusammen werden wir Ihre Lösung erarbeiten.

## PCB Code Switches

Our series is laid out for professional technology with modern assembly processes. They have solid PCB terminals outline the contact fingers are goldplated and the contact paths have an abrasion-resistant gold overlay. The contact resistance is low and stable.

These types are available with 10-or 16-positions in BCD, BCD complement, hexadecimal and hexadecimal complement. On request our P36 and PT65 can be delivered in 4, 6 and 8 position types as well.

P36 and P60A are available also in SMT- and Through Hole Reflow-Versions.

Besides the "3+3" pin configuration with two common connections Hartmann offer the P60A in a "4+1" pin configuration. This system has on one side common connection and on the opposite side 4 outgoing connections. For all series different actuators are available. Therefore solutions for most applications can be met.

Figures are clearly visible and detention mechanism is precise. Hartmann is approved to ISO 9001:2000.

All switches are subject to electronic final check.

Hartmann PCB code switches can be found in all electronic fields.

**Not every demand can be fulfilled with standard switches. More and more special executions are required. We are ready and – due to our expertise, and the vertically integrated manufacture – we are in the position to respond to your wishes. Please contact us also, if you don't find the optimum switch for your requirements. We will find a solution.**

## Hinweis

Alle Maße sind in mm angegeben.

Die Toleranz ist größtenteils nach ISO 2768 mittel festgelegt.

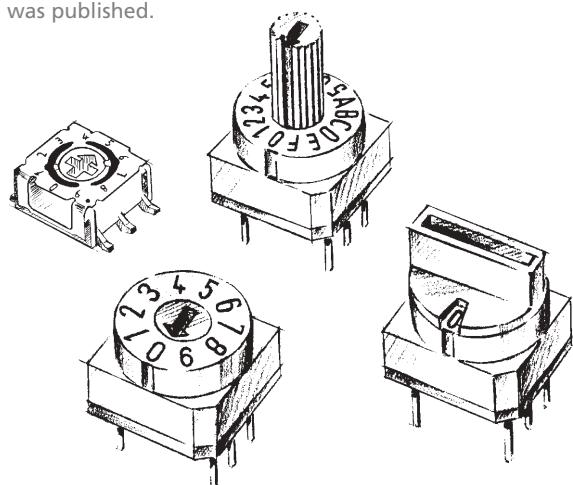
Änderungen, die dem technischen Fortschritt dienen, dürfen wir uns vorbehalten. Der Katalog entspricht nur zum Zeitpunkt seines Erscheinens dem neuesten Stand.

## Note

All dimensions are given in mm. The tolerance range, in most cases, is in accordance with "ISO 2768 medium".

We reserve the right to undertake modifications in the interest of technical progress.

The catalogue represents the latest level of technology on the day it was published.



## Standardvarianten / Standard Types

Type	P36	P36S	P36THR...L508	P60A	P60AS	P60ATHR...L508	PT65	PT65 .31
Abmessungen L/B/H Dimensions W/D/H	7,4/7,4/3,65	7,4/7,4/3,85	8,4/7,4/7,7	10/10/6,0	10/10/6,2	10,2/10,0/10,7	10/10/6,75	10/10/6,75
Katalogseite Catalogue page	22	22	22	26	26	26	30	31

## Standardbetätigungen / Standard action

Schraubendreherschlitz Arrow-shaped slot	■	■	■	■	■	■	■	
Schaltachse Spindle	■	■		■	■*	■*	■	■
Segmentschaltrad Segment wheel				■	■*	■*	■	■
Kreuzschlitz Cross-shaped slot				■	■	■	■	■
Kupplung Slotted spindle	■	■						

## Anschluss / Connection type

3+3	■	■	■				■	■
4+1				■	■	■		

## Anschlusspins / Terminals

Gerade Straight	■			■			■	■
Verschränkt Crimped	■			■			■	■
Abgewinkelt L2,54 Angular L2,54	■						■	■
Abgewinkelt L5,08 Angular L5,08				■			■	■
SMT SMT		■			■			
THR abgewinkelt L5,08 THR angular L5,08			■			■		

## Standardcodierungen / Standard-Codes

BCD BCD	■	■	■	■	■	■	■	
BCD Complement BCD Complement	■	■	■	■	■	■	■	
Hexadezimal Hexadecimal	■	■	■	■	■	■	■	
Hexadezimal Complement Hexadecimal Complement	■	■	■	■	■	■	■	
Bitgeber Pulse generator								■

\* erst nach dem Lötvorgang zu befestigen

\* only to be fitted after the soldering process

# Type P36.../P36S.../P36THR...

Bauhöhe 3,65mm  
(SMT 3,85mm)  
Anschluss-System 3 + 3  
Sämtliche Standardcodierungen  
Auch mit Schaltachse oder Kupplung  
Gerade, verschränkte, abgewinkelte und SMT-Anschlusspins  
Abgewinkelte Through Hole Reflow-Ausführung auf Anfrage  
Besonders dichte Konstruktion mit hoher Wärmeformbeständigkeit

Height: 3,65mm  
(SMT: 3,85mm)  
Pin connection: 3 + 3  
All standard codes  
Available with spindle or slotted spindle  
Straight, crimped, angular and SMT pins  
On request:  
angular Through Hole Reflow-version  
Extra sealed design with high temperature resistance



## Mechanische Daten

Zul. Umgebungstemp.  
-30°C – +90°C  
Drehmoment min. 0,7Ncm  
Mech. Lebensdauer  
min. 10<sup>4</sup> Schaltschlüsse  
Schaltstellungen/ U  
10, 16 (nicht selbstastend)

## Elektrische Daten

Betriebsspannung ≤ 24V  
Ruhestrom ≤ 0,4A  
Schaltstrom ≤ 0,10A  
Prüfspannung 250V  
50Hz/1min  
Übergangswiderstand  
< 100 mOhm  
Isolationswiderstand  
> 100 MOhm

## Lötempfehlung

(EN 61760-1;  
DIN IEC 60068-2-20)  
Reflowlötzung max. 40s/215°C  
Kolbenlötzung max. 2s/340°C  
Wellenlötzung max. 10s/260°C

## Standardbetätigung

Schraubendreherschlitz,  
Schaltachse, Kupplung

## Rotorfarbe

BCD: rot  
BCD Complement: orange  
Hexadezimal: grau  
Hexadezimal Complement:  
weiß

Abweichende Kenndaten  
auf Anfrage

## Mechanical Data

Permiss. ambient temp.  
-30°C – +90°C  
Torque min. 0,7Ncm  
Mech. lifetime min. 10<sup>4</sup> steps  
Positions per rotation  
10, 16 (non-self-locking)

## Electrical Data

Operating voltage ≤ 24V  
Contact load, static ≤ 0,4A  
Contact load, dynamic ≤ 0,10A  
Test voltage 250V 50Hz/1min  
Contact resistance  
< 100 mOhm  
Insulation resistance  
> 100 MOhm

## Solder recommendations

(EN 61760-1;  
DIN IEC 60068-2-20)  
Solder reflow max. 40s/215°C  
Solder iron max. 2s/340°C  
Solder bath max. 10s/260°C

## Standard actuators

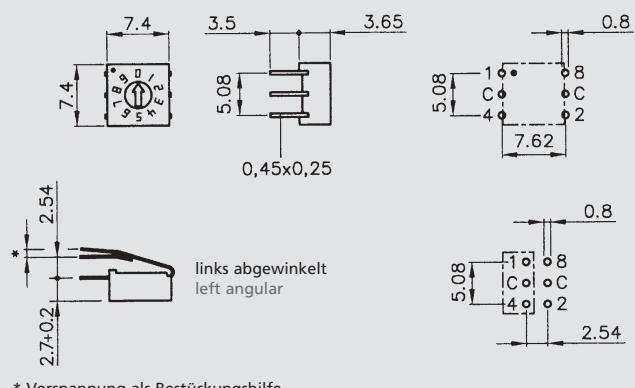
Arrow-shaped slot, spindle,  
slotted spindle

## Colour of rotor

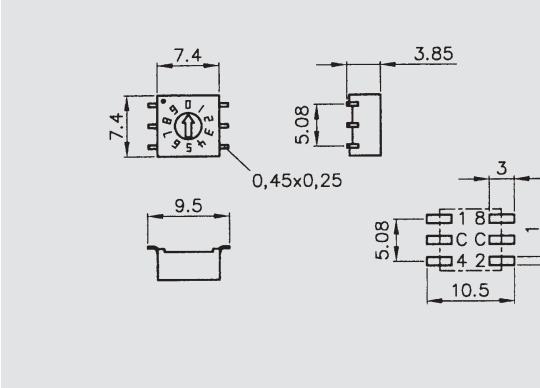
BCD: red  
BCD Complement: orange  
Hexadecimal: grey  
Hexadecimal Complement:  
white

Different characteristics  
on request

## Abmessungen / Dimensions P36



## Abmessungen / Dimensions P36S



## Type P36 THR

Through Hole Reflow

- Ein Verarbeitungsprozess für SMT und Through-Hole-Bauteile.
- Selektives Bestücken und Löten entfällt.
- Die robuste Lötverbindung bringt zusätzliche Funktionssicherheit in der Anwendung.

Die Schalter sind gurtverpackt und werden mit herkömmlichen SMT-Bestückungsmaschinen plaziert.

Im Schalter integrierte Abstandhalter sorgen im Reflowofen für eine ungehinderte und gleichmäßige Wärmezufuhr an die Lötstellen.

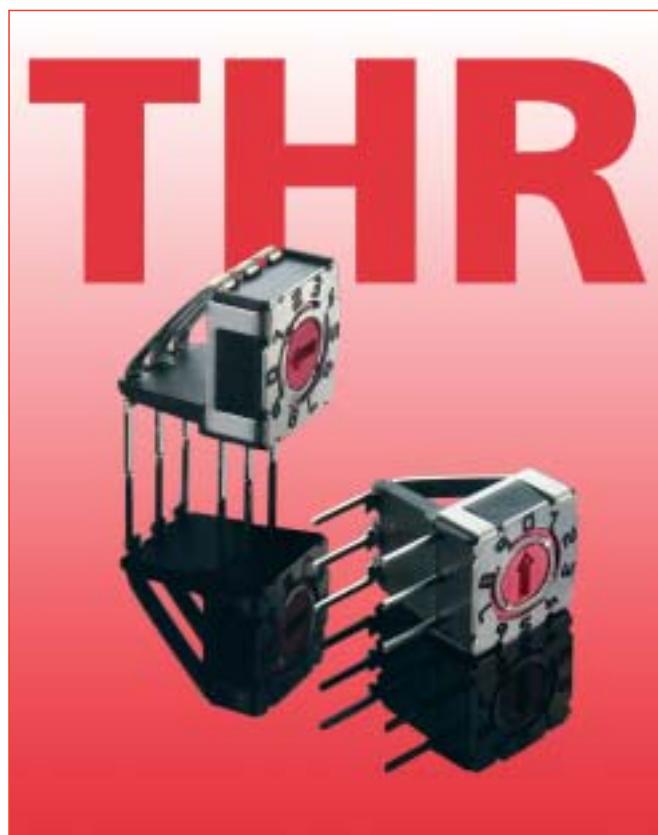
Selektives Löten ist nicht mehr notwendig.

- One process for both SMT- and Through-Hole-Components
- No more selective mounting and soldering.
- Robust solder connection provides additional operation reliability

The switches are packed in Tape & Reel and can be placed with conventional pick and place machines.

Spacers that are integrated in the switch bottom ensure an unhindered and evenly spread heat supply in the reflow oven.

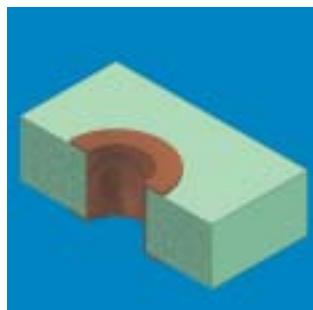
Selective soldering is no longer necessary.



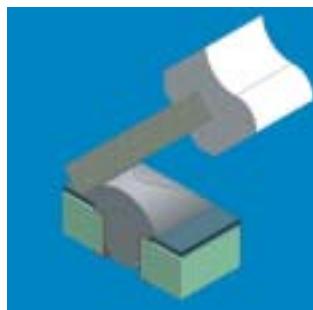
Dreh-Codierschalter  
PCB Code Switches

## THR-Prozess / THR-Process

1. Leiterplatte mit durchkontaktierten Bohrungen  
PCB with plated-through holes

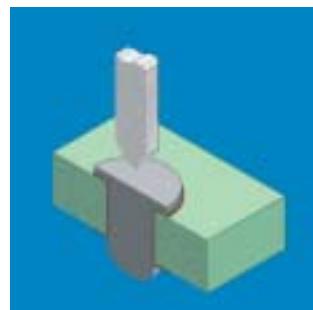


2. Lotpaste auftragen  
Applying solder paste

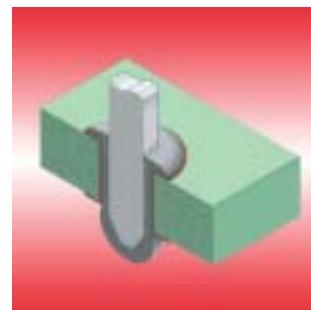


3. THR-Bauteile zusammen mit den SMT-Bauelementen bestücken

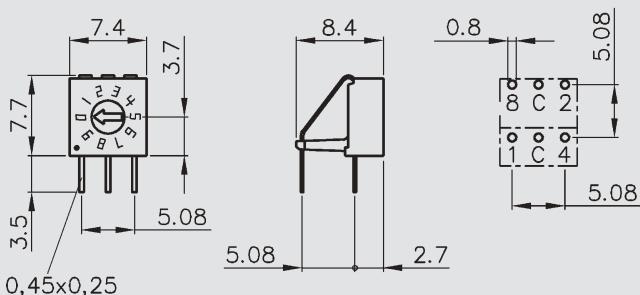
Mounting THR-components altogether with the SMT-components



4. Reflow-Löten.  
Fertig!  
Reflow soldering.  
Ready!



## Abmessungen / Dimensions P36THR...L508



Bohrloch durchkontaktiert  
Innendurchmesser 0,8mm  
Lötauge Durchmesser 1,8mm

Plated through holes  
PCB hole diameter 0,8mm  
Outside diameter  
plated land 1,8mm

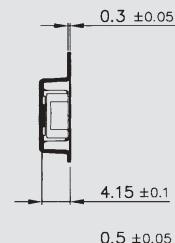
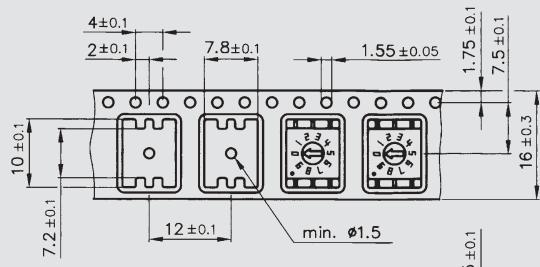
Mehr Informationen zu THR  
ab Seite 11.

More Information about THR  
starting on page 11.

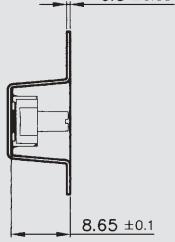
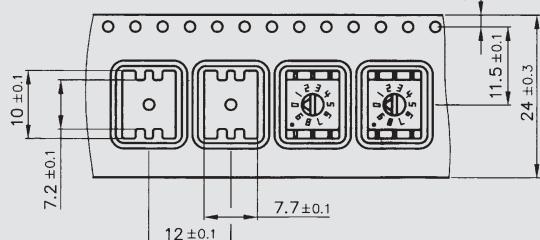
## Gurt-/Rollenverpackung P36S.../P36THR...

Tape and Reel Packing P36S.../P36THR...

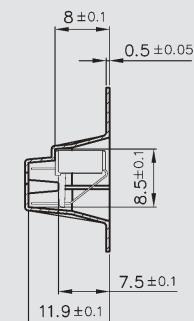
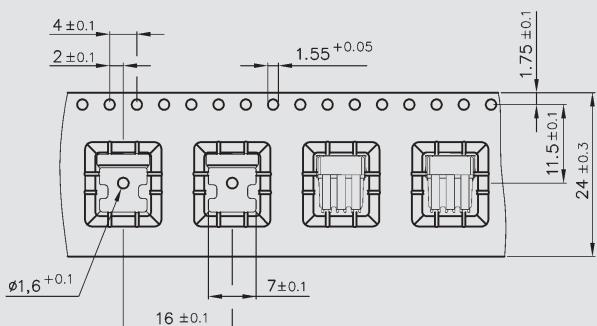
P36S 1..



P36S 3..  
P36S 8..



P36THR 1...



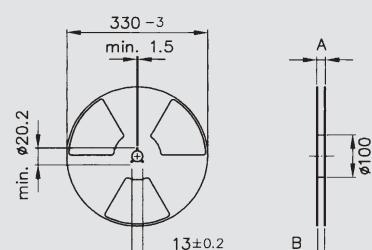
Rollenmaße  
Reel dimensions

A

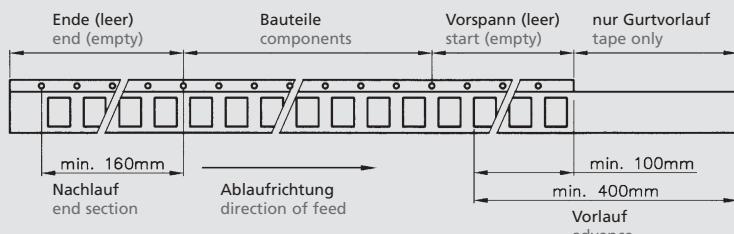
B

Schalter/Rolle  
Switches/Reel

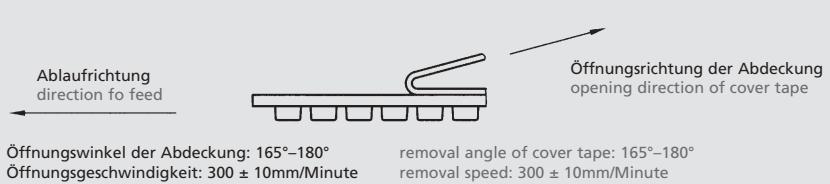
P36S 1..	max. 22,4	max. 16,4	1300
P36S 3..	max. 30,4	max. 24,4	600
P36S 8..	max. 30,4	max. 24,4	600
P36THR 1..	max. 30,4	max. 24,4	300



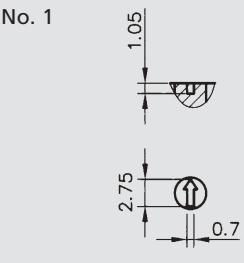
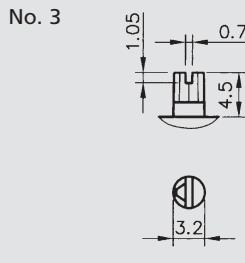
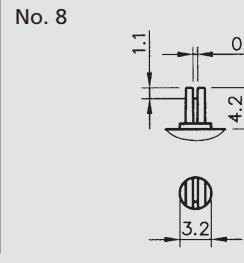
Gurtvorlauf und -nachlauf  
Advance and end section



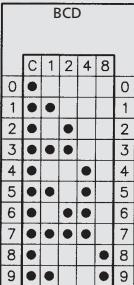
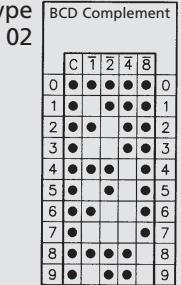
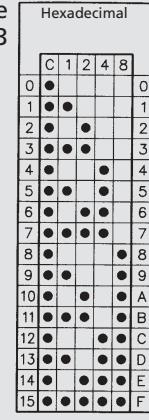
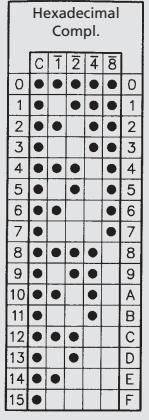
Abzugskraft, Siegelband:  
Peel strength, cover tape  
0,1N ... 1.3N (10g ... 130g)



## Betätiger / Actuators

Schraubendreherschlitz Arrow-shaped slot	Schaltachse Spindle	Kupplung Slotted spindle	
			
No. 1 	No. 3 	No. 8 	Weitere Betätiger auf Anfrage. Further actuators on request.

## Codierungen / Codes

Type 01  Schaltstellung Position Rotorfarbe Rot Colour of rotor red	Type 02  Beschriftung Description Rotorfarbe Orange Colour of rotor orange	Type 03  Rotorfarbe Grau Colour of rotor grey	Type 06  Rotorfarbe Weiß Colour of rotor white
Weitere Codierungen auf Anfrage z. B. 4, 6, 8 Schaltstellungen, Sondercodes			Further codes on request e. g. 4, 6, 8 positions, special codes

## Bestellangaben / Order description

P36THR 101 L508

Type	Betätiger Actuators	Codierung Codes	Anschlusspins Terminals
P36	1 = Schraubendreherschlitz arrow-shaped slot	01 = BCD	V = Verschränkt crimped
P36S	3 = Schaltachse spindle	02 = BCD Complement	L254 = Abgewinkelt nach links 2,54mm left angular 2,54mm
P36THR	8 = Kupplung slotted spindle	03 = Hexadecimal	L508 = Abgewinkelt nach links 5,08mm left angular 5,08mm
		06 = Hexadecimal Complement	

# Type P60A.../P60AS.../P60A THR...

Bauhöhe 6,0mm (SMT 6,2mm)

Anschluss-System 4 + 1

Sämtliche Standardcodierungen

Individuelle Bedienelemente

Gerade, verschränkte, abgewinkelte und SMT-Anschlusspins

Abgewinkelte Through Hole-Reflow-Ausführung, optional mit Preforms

Besonders dichte Konstruktion mit hoher Wärmeformbeständigkeit

Height: 6,0mm (SMT 6,2mm)

Pin connection: 4 + 1

All standard codes

Individual operating elements

Straight, crimped, angular and SMT pins

angular Through Hole Reflow-Version, optional with pre-forms

Extra sealed design with high temperature resistance



## Mechanische Daten

Zul. Umgebungstemp.  
-20°C – +85°C

Drehmoment min. 0,7Ncm

Mech. Lebensdauer  
min. 10.000 Schalterschritte  
Schaltstellungen/ U 10, 16  
(nicht selbstständig)

## Elektrische Daten

Betriebsspannung ≤ 24V

Ruhstrom ≤ 0,4A

Schaltstrom ≤ 0,15A

Prüfspannung  
250V 50Hz/1min

Übergangswiderstand  
< 100mOhm

Isolationswiderstand  
> 100MOhm

## Lötempfehlung

(EN 61760-1;  
DIN IEC 60068-2-20)

Reflowlötzung max. 40s/215°C

Kolbenlötzung max. 2s/340°C

Wellenlötzung max. 10s/260°C

## Standardbetätiger

Schraubendreherschlitz,  
Kreuzschlitz, Schaltachse,  
Segmentschalttrad.

Die Betätigter für Kreuzschlitz-  
aufnahme sind erst nach dem  
Lötvorgang anzubringen.

Abweichende Kenndaten  
auf Anfrage

## Mechanical Data

Perm. ambient temp  
-20°C – +85°C

Torque min. 0,7Ncm

Mech. lifetime

min. 10.000 steps

Positions per rotation 10, 16  
(non-self-locking)

## Electrical Data

Operating voltage ≤ 24V

Contact load, static ≤ 0,4A

Contact load, dynamic  
≤ 0,15A

Test voltage 250V 50Hz/1min

Contact resistance  
< 100mOhm

Insulation resistance  
> 100MOhm

## Solder

## Recommendations

(EN 61760-1;  
DIN IEC 60068-2-20)

Solder Reflow max. 40s/215°C

Solder iron max. 2s/340°C

Solder bath max. 10s/260°C

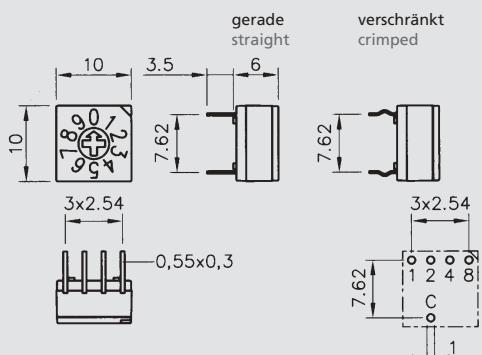
## Standard Actuators

Arrow shaped slot, Cross  
shaped slot, Spindle, Segment  
wheel.

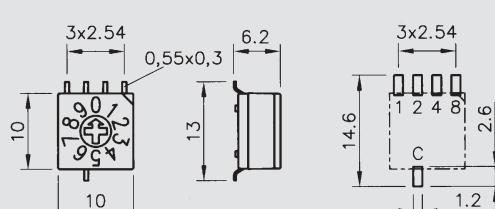
For reflow soldering:  
Operating elements have to  
be fitted after the soldering  
process.

Different characteristics  
on request

## Abmessungen / Dimensions P60A



## Abmessungen / Dimensions P60AS



## Type P60A THR

Through Hole Reflow mit Carrier & Preforms

- Ein Verarbeitungsprozess für SMT und Through-Hole-Bauteile.
- Selektives Bestücken und Löten entfällt.
- Die robuste Lötverbindung bringt zusätzliche Funktionssicherheit in der Anwendung.

Zur Unterstützung des Lötprozesses sind im Schalterboden Carrier für die Aufnahme von optionalen Preforms eingearbeitet. Die Carrier übernehmen die Aufgabe von Abstandshaltern zur Leiterplatte. Somit wird die Wärme des Reflowofens ungehindert an die Lötstellen geleitet. Die Preforms bringen zusätzliches Lötzinn an die Lötstelle und sorgen damit für eine einwandfreie Lötverbindung.

Through Hole Reflow with Carrier & Preforms

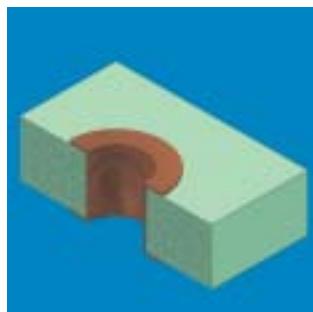
- One process for both SMT- and Through-Hole-Components
- No more selective mounting and soldering.
- Robust solder connection provides additional operation reliability

In support of the soldering process carriers are integrated in the switch bottom to receive the optional solder preforms. By means of the carriers the necessary distance between the switch and the pcb is achieved. Thus the heat of the Reflow oven easily reaches the solder points. The preforms provide the solder points with additional solder tin and ensure a proper solder connection.

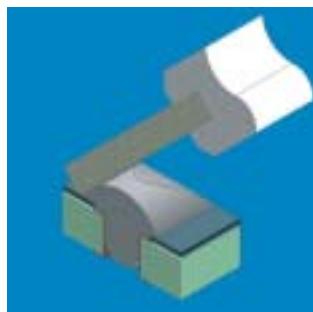


## THR-Prozess / THR-Process

1. Leiterplatte mit durchkontaktierten Bohrungen  
PCB with plated-through holes

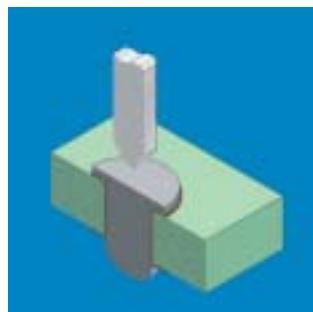


2. Lotpaste auftragen  
Applying solder paste

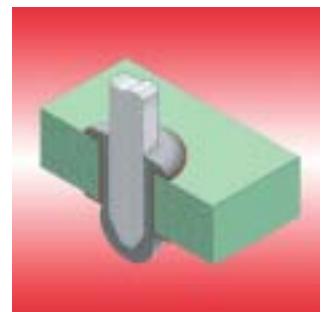


3. THR-Bauteile zusammen mit den SMT-Bauelementen bestücken

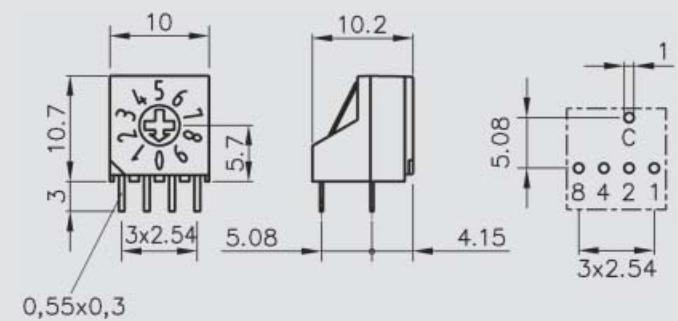
Mounting THR-components altogether with the SMT-components



4. Reflow-Löten.  
Fertig!  
Reflow soldering.  
Ready!



## Abmessungen / Dimensions P60A THR



Bohrloch durchkontaktiert  
Innendurchmesser 1,0mm  
Lötauge Durchmesser 1,8mm

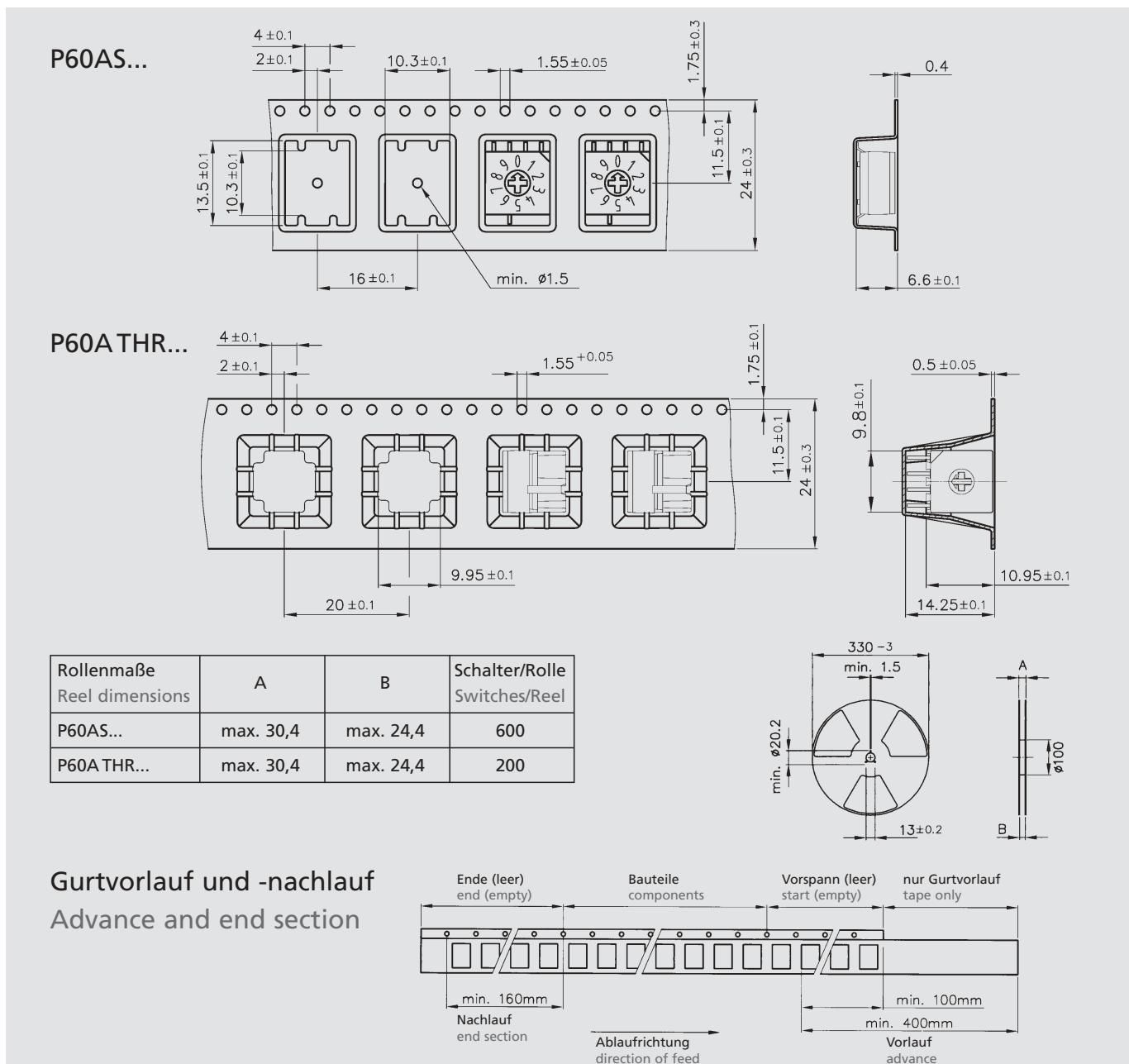
Plated through holes  
PCB hole diameter 1,0mm  
Outside diameter  
plated land 1,8mm

Mehr Informationen zu THR  
ab Seite 11.

More Information about THR  
starting on page 11.

## Gurt-/Rollenverpackung P60AS.../P60A THR

Tape and Reel Packing P60AS.../P60A THR

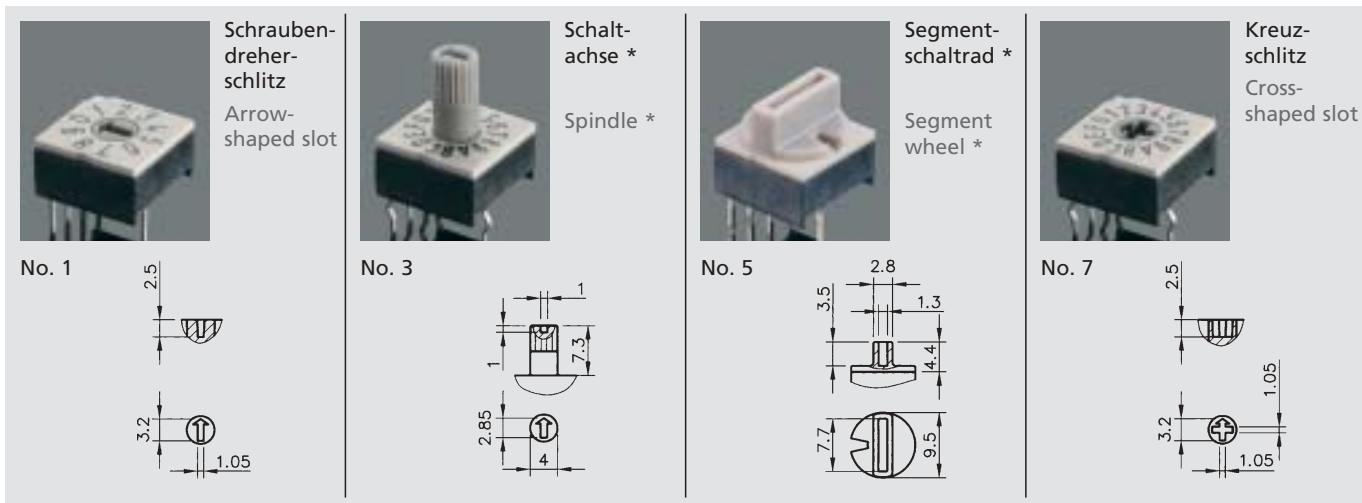


## Codierungen / Codes

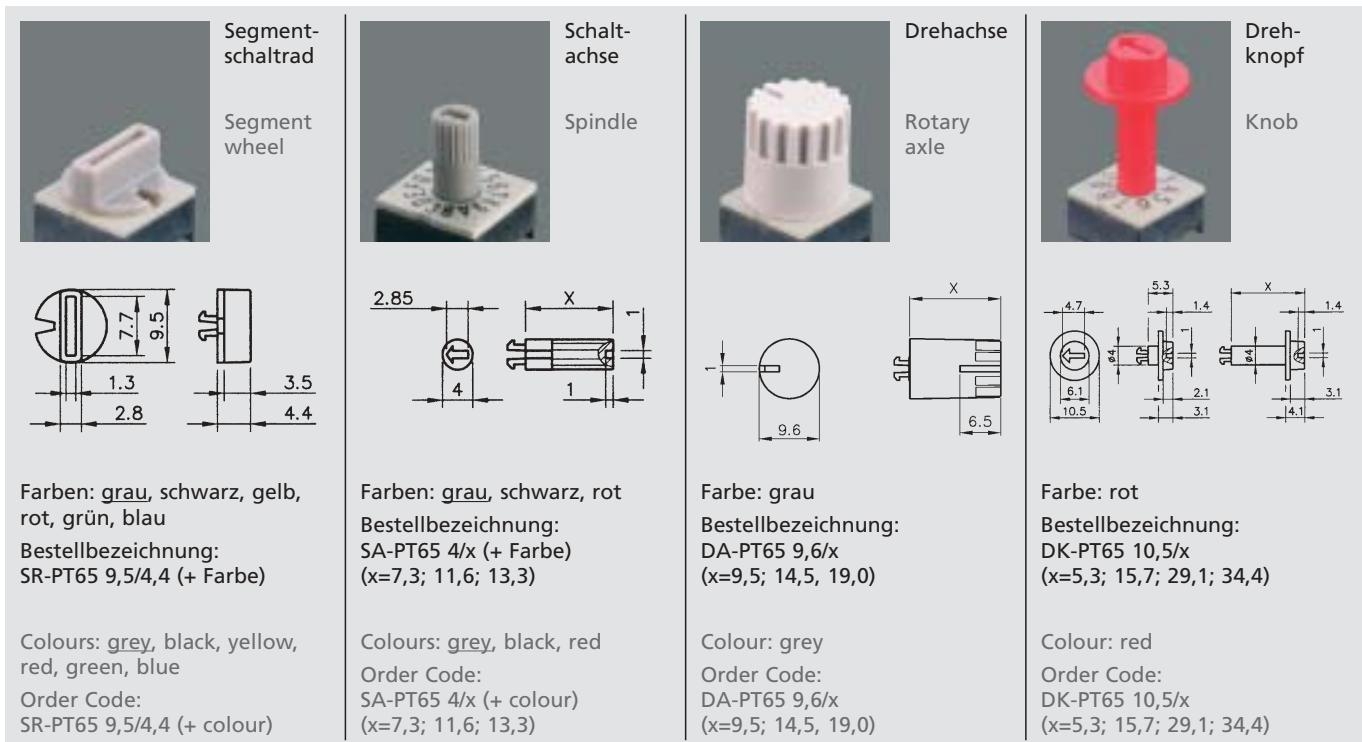
Type 01	<b>BCD</b>	Type 02	<b>BCD Complement</b>	Type 03	<b>Hexadecimal</b>	Type 06	<b>Hexadecimal Compl.</b>
 Schaltstellung Position	 Beschriftung Description						

Weitere Codierungen auf Anfrage.  
Further codes on request.

## Standardbetätiger / Standard actuators



Lose Betätigter für Kreuzschlitzaufnahme \* (Farbe bitte der Bestellbezeichnung anfügen)  
Operating elements for cross-shaped slot in bulk \* (please add colour to order code)



\* Bei Reflowlötzung:  
Betätigter erst nach dem Lötvorgang anbringen.

\* For reflow soldering:  
Only be fitted after the soldering process.

## Bestellangaben / Order description

P60A THR 101 L508

Type	Betätigter Actuators	Codierung Codes	Anschlusspins Terminals
P60A	1 = Schraubendreherschlitz arrow-shaped slot	01 = BCD	V = Verschränkt crimped
P60AS	3 = Schaltachse spindle	02 = BCD Complement	L508 = Abgewinkelt nach links 5,08mm
P60A THR	5 = Segmentschaltrad segment wheel 7 = Kreuzschlitz cross-shaped slot	03 = Hexadecimal 06 = Hexadecimal Complement	left angular 5,08mm

# Type PT65...

Bauhöhe 6,5mm  
 Anschluss-System 3 + 3  
 Schraubendreher- und Kreuzschlitzausführung  
 Sämtliche Standardcodierungen  
 Gerade, verschränkte und abgewinkelte Anschlusspins  
 Auch mit Schaltachse oder Segmentschalter  
 Besonders dichte Konstruktion

Height: 6,5mm  
 Pin connection: 3 + 3  
 Screwdriver and cross-shaped slot types  
 All standard codes  
 Straight, crimped and angular pins  
 Available with spindle or segment wheel  
 Extra sealed Design



## Mechanische Daten

Zul. Umgebungstemp.  
 $-20^{\circ}\text{C} - +70^{\circ}\text{C}$   
 Drehmoment min. 0,7Ncm  
 Mech. Lebendsdauer  
 min.  $10^4$  Schaltschritte  
 Schaltstellungen/ U 10, 16  
 (nicht selbststellend)

## Elektrische Daten

Betriebsspannung  $\leq 24\text{V}$   
 Ruhestrom  $\leq 0,4\text{A}$   
 Schaltstrom  $\leq 0,15\text{A}$   
 Prüfspannung  
 $250\text{V } 50\text{Hz}/1\text{min}$   
 Übergangswiderstand  
 $< 80 \text{ mOhm}$   
 Isolationswiderstand  
 $> 100 \text{ MOhm}$

## Lötempfehlung

(DIN IEC 60068-2-20)  
 Kolbenlötzung max. 2s/340°C  
 Wellenlötzung max. 10s/260°C

Abweichende Kenndaten  
 auf Anfrage

## Mechanical Data

Permiss. ambient temp.  
 $-20^{\circ}\text{C} - +70^{\circ}\text{C}$   
 Torque min. 0,7Ncm  
 Mech. lifetime min.  $10^4$  steps  
 Positions per rotation 10, 16  
 (non-self-locking)

## Electrical Data

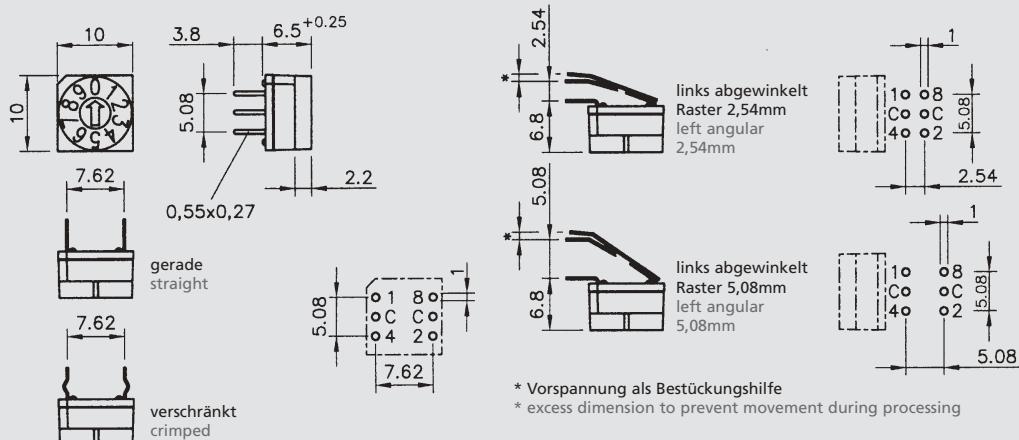
Operating voltage  $\leq 24\text{V}$   
 Contact load, static  $\leq 0,4\text{A}$   
 Contact load, dynamic  $\leq 0,15\text{A}$   
 Test voltage 250V 50Hz/1min  
 Contact resistance  $< 80 \text{ mOhm}$   
 Insulation resistance  
 $> 100 \text{ MOhm}$

## Solder recommendations

(DIN IEC 60068-2-20)  
 Solder iron max. 2s/340°C  
 Solder bath max. 10s/260°C

Different characteristics  
 on request

## Abmessungen / Dimensions PT65



## Sonderausführungen

### **PRINTHART PT65...B..**

#### Dreh-Codierschalter mit begrenztem Schaltbereich

Die Dreh-Codierschalter mit begrenztem Schaltbereich ermöglichen es, ungewünschte Schaltstellungen von vornherein auszuschließen. Undefinierte Ausgangssignale sind unmöglich. Die werkseitige Begrenzung der 10-stelligen Schalter ist bei allen Positionen möglich. Die Ausgangssignale sind je nach Wunsch BCD oder BCD-Complement codiert. Durch die robuste Konstruktion der Anschlagpunkte

halten die Schalter auch kräftigen Betätigungen stand. Außerdem wurde auf die Dichtheit der Schalter großen Wert gelegt.

Wie bei allen Standardtypen der Baureihe PT65 sind für die begrenzten Schalter verschiedene Bedienelemente lieferbar. Ebenso sind gerade, abgewinkelte und verschränkte Anschlusspins erhältlich.

#### Bestellangaben

Bei den Bestellangaben ist neben dem Buchstaben „B“ (Begrenzung) der Schaltbereich anzugeben.

Zum Beispiel Schaltbereich 2, 3, 4, 5, 6: notwendige Zusatzbezeichnung B26. Die Bezeichnung B82 bedeutet: schaltend von 8 über 0 bis 2.

### **PRINTHART PT65.31**

#### Bitgeber

Dieser Schalter ist ein mechanischer Drehschalter, der den Eingang C zeitlich verschoben mit den Ausgängen 1 und 2 verbindet.

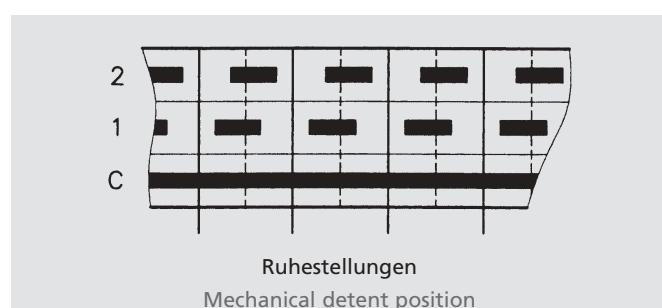
In der Ruhestellung ist der Eingang C von den Ausgängen getrennt. Ausgehend von der Ruhestellung ist je nach Drehrichtung die Schaltfolge Drehrichtung rechts C+1, C+1+2, C+2 Drehrichtung links C+2, C+2+1, C+1 Hierdurch wird die Drehrichtung der Schalterachse elektrisch erkennbar.

Typische Anwendungsfälle dieses Inkrementalgebers bzw. Bitgebers sind überall dort, wo einer digitalen Elektronik (Dimmer, Lautstärkenregler) addierende oder subtrahierende Befehle eingegeben werden sollen.



#### Schalschema

Wiring diagramme



## Special versions

### PCB code switches with limited switching range

PCB code switches with limited switching range makes it possible to exclude unwanted operating positions and undefined output signals can be suppressed.

When leaving the factory, delimiting the switching range of the 10-position switches can be effected with any position. Based on the customer requirements, the output signals can be BCD coded or BCD complementary coded.

Thanks to the rugged, solid mechanical design of the stop points, the delimitation can also endure robust handlings and actuations.

As with every standard type of the PRINTHART PT65 line of products, we very much attached importance to the tightness; consequently, the different operating elements can be also provided for this type of switches. Additionally, straight, angular and crimped pins are available.

#### Order instructions

In the order instructions you should specify the switching range next to the letter "B".

For example, switching range 2, 3, 4, 5 and 6 requires the additional designation B26. The designation B82 means: switching from 8 through 0 to 2.

### Pulse generator

The pulse generator is a mechanical rotary switch connecting input C to outputs 1 and 2 after another in a retarded manner.

In the mechanical detent position input C is galvanically separated from the outputs 1 and 2. Depending on the rotational direction of the axis, the switching sequence is rotation to right C+1, C+1+2, C+2 rotation to left C+2, C+2+1, C+1

Hereby, the rotational direction is recognized electrically. Typical applications are to be found wherever adding or subtracting instructions are read into digital electronics (dimmer, volume control).

## Codierungen / Codes

### Standard / Standard

Type 01	BCD	Type 02	BCD Complement	Type 03	Hexadecimal	Type 06	Hexadecimal Compl.																																																																																																																																																																																																																																																																																																																																													
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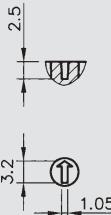
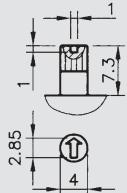
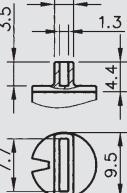
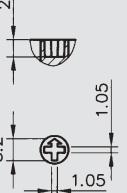
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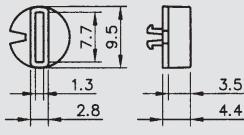
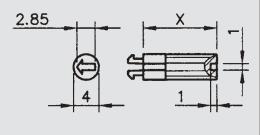
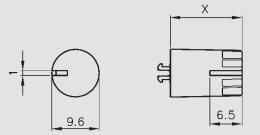
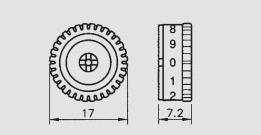
\* = Bohrplan (Bestückungsseite)

\* = mounting hole pattern (component side)

## Standardbetätiger / Standard actuators

	Schrauben-dreher-schlitz Arrow-shaped slot		Schalt-achse Spindle		Segmentschaltrad Segment wheel		Kreuz-schlitz Cross-shaped slot
No. 1		No. 3		No. 5		No. 7	
Farbe: Grau Colour: grey		Farbe: Grau Colour: grey		Farbe: Grau Colour: grey		Farbe: Grau Colour: grey	

## Lose Betätiger für Kreuzschlitzaufnahme (Farbe bitte der Bestellbezeichnung anfügen) Operating elements for cross-shaped slot in bulk (please add colour to order code)

	Segmentschaltrad Segment wheel		Schalt-achse Spindle		Dreh-achse Rotary axle		Drehrad Wheel		Dreh-knopf Knob
 Farben: grau, schwarz, gelb, rot, grün, blau Bestellbezeichnung: SR-PT65 9,5/4,4 (+ Farbe)  Colours: grey, black, yellow, red, green, blue Order Code: SR-PT65 9,5/4,4 (+ colour)	Farben: grau, schwarz, rot Bestellbezeichnung: SA-PT65 4/x (+ Farbe) (x=7,3; 11,6; 13,3)  Colours: grey, black, red Order Code: SA-PT65 4/x (+ colour) (x=7,3; 11,6; 13,3)	 Farbe: grau Bestellbezeichnung: DA-PT65 9,6/x (x=9,5; 14,5, 19,0)  Colour: grey Order Code: DA-PT65 9,6/x (x=9,5; 14,5, 19,0)	 Farbe: weiß (Bedruckung auf Anfrage) Bestellbezeichnung: DR-PT65 17  Colour: white (printing on request) Order Code: DR-PT65 17	 Farbe: rot Bestellbezeichnung: DK-PT65 10,5/x (x=5,3; 15,7; 29,1; 34,4)  Colour: red Order Code: DK-PT65 10,5/x (x=5,3; 15,7; 29,1; 34,4)					

## Bestellangaben / Order description

PT65 101 L254

Type	Betätiger Actuators	Codierung Codes	Anschlusspins Terminals
PT65	1 = Schraubendreherschlitz arrow-shaped slot 3 = Schaltachse spindle 5 = Segmentschaltrad segment wheel 7 = Kreuzschlitz cross-shaped slot	01 = BCD 02 = BCD Complement 03 = Hexadecimal 06 = Hexadecimal Complement 31 = Bitgeber pulse generator	V = Verschränkt crimped L254 = Abgewinkelt nach links 2,54mm left angular 2,54mm L508 = Abgewinkelt nach links 5,08mm left angular 5,08mm



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