

KAT		3
POWER OUTLET		4
CONTROL LIGHT		8
FUSE BOX		12
POLYFUSE		18
POSITION SWITCH		20
CONTACT SWITCH		22
PUSH BUTTON		24
ROTARY SWITCH		28
MAIN CIRCUIT BREAKER		34
IGNITION LIGHT SWITCH		42
IGNITION SWITCH		46
STARTER SWITCH		58
UNIVERSAL ROCKER SWITCH		66
HEAVY DUTY ROCKER SWITCH		72
IMMOBILISER PRODUCT LINE		82



SMT	R&D
Metal Cutting	Coating
Tool Manufacturing	Painting
Plastic Injection	Laser Marking
Automated Assembly	Automotive Laboratory



High quality production

37 COUNTRIES
across
5 CONTINENTS

KAT, is a family owned company
with an experience of over 60 years.
Offers products in Electromechanics,
Electronics, Mechatronics and focuses on the
following segments:

Agriculture
Marine
Motorbikes
Off-Highway
Passenger Cars
Trucks
Busses

KAT which is located in Istanbul/Trakya Free Trade Zone
has fully integrated, modern and efficiently
automatized production processes,
are approved by "Global Premium OEM's".

KAT carries on these manufacturing processes in
its high energy efficient plant with an area of 25,000
square meters, which is supported by a motivated,
trained and highly qualified international team.
KAT has been operating in 37 countries across
5 continents together with its foreign partner,
Brehmer Mechatronics since 2003.

“POWER OUTLET,”



MAIN PROPERTIES

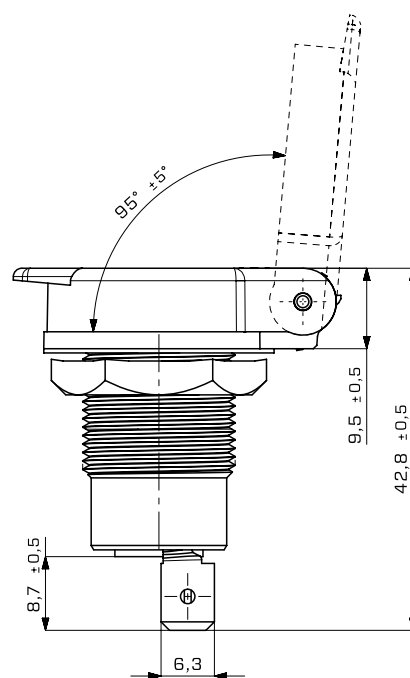
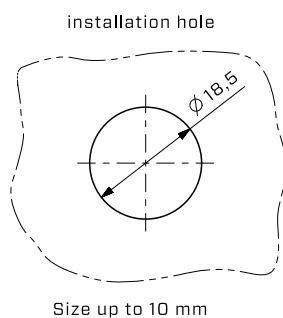
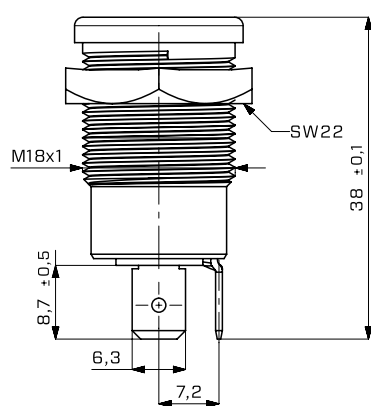
- Voltage Range: 12 V / 24 V
- Current: max. 16 A
- Temperature Range: -40°C / +85°C
- Delivery: Cover and nut are delivered separately.
- Suitable for 2 pole Fastin-Faston adapter plug housing AMP no:180907-0



TECHNICAL CHARACTERISTICS

The power outlet which is designed formerly to supply the electric lighter in vehicles, has become a standard accessory over time and is currently used for the supply of car interior or proximal other electrical appliances operating with DC current (lighting, fan, heater, etc.) as well.

KAT power outlet meets the requirements of ISO 4165.



Materials

Cover	: PA 66
Cover spring	: EN 10270-3 / 1.4310
Cover ring	: PA 6
Housing	: Aluminium 6013
Contact	: CuSn 6
Socket	: PA 66
Terminals	: MS 63, silver coated
M18 nut	: CuZn 39

ORDERING SCHEME

Please define your product by selecting the technical features below

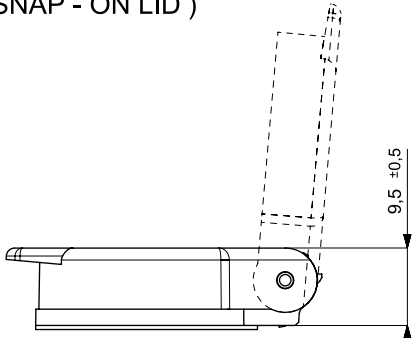
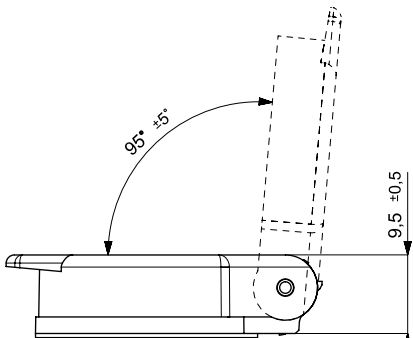
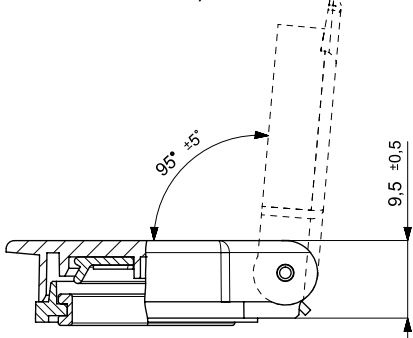
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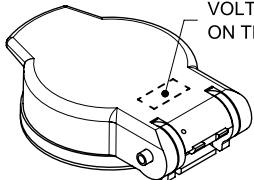
2

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1- Version

2- Voltage Information

1	VERSION
A	IP34 (SNAP - ON LID) 
B	IP34 (SNAP - ON LID, LOCKED IN PLACE) 
C	IP00 (WITHOUT SNAP - ON LID)
D	IP44 (SNAP - ON LID) 

2	VOLTAGE INFORMATION	
1	12 V	
2	24 V	
3	-	

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics	
	CODE	
	1	2
34477	A	1
34478	A	2
32008	A	3
34479	B	1
34480	B	2
33676	B	3
33434	C	3
34795	D	1
34625	D	2

SPARE PART NUMBERS FOR LID								
VERSION A			VERSION B			VERSION D		
12 V	24 V	-	12 V	24 V	-	12 V	24 V	-
34481	34483	33670	34484	34485	33677	36276	34636	36277

Delivery Volume		
Item	Designation	Number
1	Lid	1
2	Outlet	1
3	M18 Nut	1

* Lid and nut will be provided separately
without mounting

“CONTROL LIGHT,”



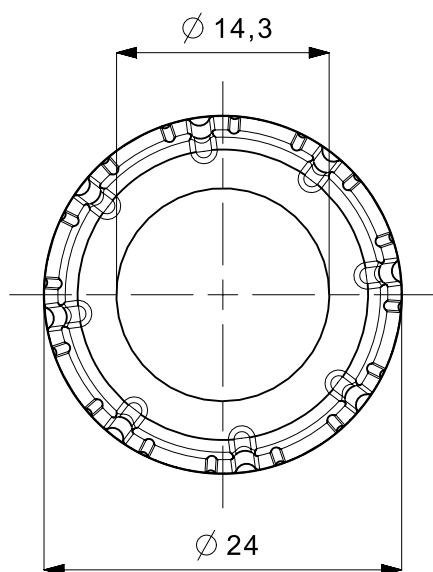
MAIN PROPERTIES

- Temperature Range: -40°C / +85°C
- Protection Class: IP 30
- Voltage Range: 12 V / 24 V
- Spring made of stainless steel



TECHNICAL CHARACTERISTICS

Top view



KAT control lights are specially designed to operate under severe conditions of transportation, agriculture and construction vehicles.

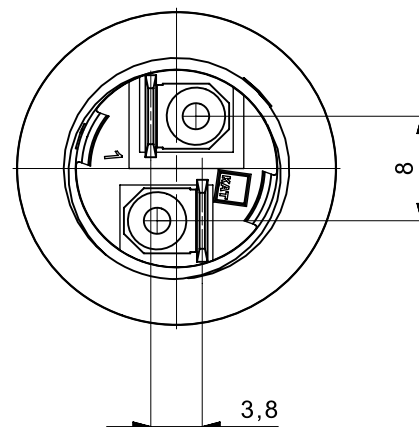
They are used for reporting the status of auxiliary systems used in vehicle to the driver and warning the driver in case of breakdown/failure.

(For example; battery status, headlights on/off, fuel, oil level error.)
Different symbols and colours are available.

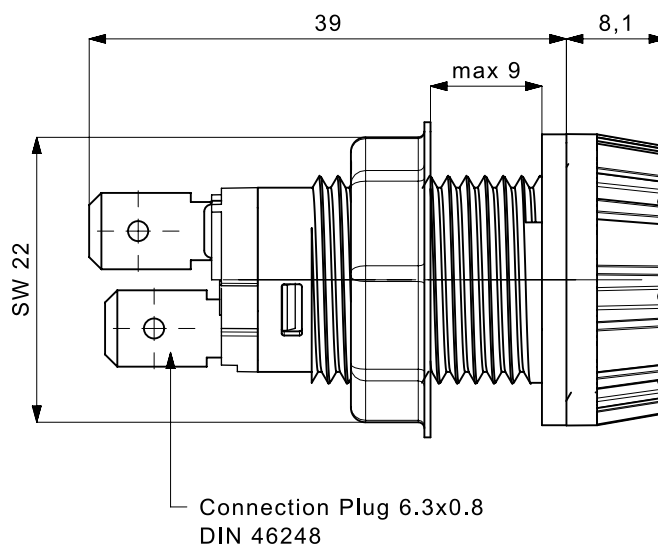
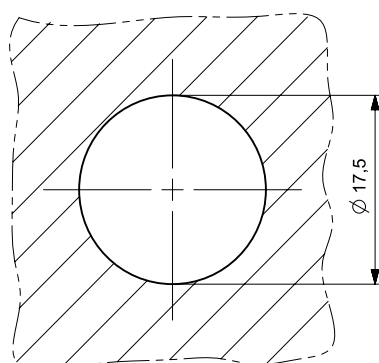
Materials

Housing	: PA6 GF30/Black
Plastic Cover	: ABS
Metal Cover	: AlMgSiSnBi
Lens	: PC or Makrofol LT
Nut	: St 3 , zinc coated
Terminals	: Cu Zn 37 F 38, silver coated
Socket	: CuZn39

Bottom view



Mounting hole



ORDERING SCHEME

Please define your product by selecting the technical features below

1 2 3 4

_____	_____	_____	_____
-------	-------	-------	-------

1- Warning Light Symbol
2- Connection Type
3- Cover Type
4- illumination

1 WARNING LIGHT SYMBOL

Code	Symbol name	Symbol No	Symbol	Figure colour	Pane	
					Material	Color
01	Battery	10146		White	PC Film	Red
02	Air filter	10147		White	PC Film	Red
03	Oil	10148		White	PC Film	Red
04	Temperature	10149		White	PC Film	Red
05	Timing Belt Broken	10150		White	PC Film	Red
06	-	10151		-	PC Film	Red
07	-	10152		-	PC Film	Blue
08	-	10153		-	PC Film	Orange
09	-	10154		-	PC Film	Green
10	Brake	10155		White	PC Film	Red
11	Turn Signals	10156		White	PC Film	Green
12	Pre-Heat	10157		White	PC Film	Orange
13	Oil heat	10158		White	PC Film	Orange
14	Fuel low level	10159		White	PC Film	Red
15	Water level	10160		White	PC Film	Red
16	Diagnostic	10161		White	PC Film	Red
17	Differential lock	10162		White	PC Film	Red
18	Beacon	10163		White	PC Film	Orange
19	Oil heat	10164		White	PC Film	Red
20	Diagnostic	10165		White	PC Film	Orange
21	Glow	10166		White	PC Film	Orange
22	-	20437		-	PC Lens	Red
23	-	20438		-	PC Lens	Blue
24	-	20439		-	PC Lens	Green
25	-	20440		-	PC Lens	Orange
26	Lap belt	16369		White	PC Film	Red
27	Door open	16370		White	PC Film	Red

2 CONNECTION TYPE

A	TYPE SOCKET		B	TYPE PLUG	

3 COVER TYPE

A	PLASTIC COVER		B	METAL COVER	

4 ILLUMINATION

A	No illumination
B	LAMP (12V)
C	LAMP (24V)

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics			
	Code 1	Code 2	Code 3	Code 4
34050	01	B	A	A
34385	01	B	A	B
34051	02	B	A	A
34053	03	B	A	A
34377	03	B	A	A
34386	03	B	A	B
34052	04	B	A	A
34378	05	B	A	A
34344	06	B	A	A
34384	06	B	A	B
36566	06	B	B	B
34371	07	B	A	A
36567	07	B	B	B
34342	08	B	A	A
34375	08	B	A	B
36568	08	B	B	B
34343	09	B	A	A
34379	10	B	A	A
34376	11	B	A	A
34049	12	B	A	A
36298	12	B	A	B
34345	13	B	A	A
34380	14	B	A	A
34346	15	B	A	A
34382	16	B	A	A
34383	17	B	A	A
34372	18	B	A	A
34381	19	B	A	A
34373	20	B	A	A
34374	21	B	A	A
34395	22	A	A	A
34396	22	B	A	A
34397	22	B	A	B
34404	22	A	B	A
34405	22	B	B	A
36569	22	B	B	B
34387	23	A	A	A
34388	23	B	A	A
34398	23	A	B	A
34399	23	B	B	A
36570	23	B	B	B
34392	24	A	A	A
34393	24	B	A	A
34394	24	B	A	B
34402	24	A	B	A
34403	24	B	B	A
34389	25	A	A	A
34390	25	B	A	A
34391	25	B	A	B
34400	25	A	B	A
34401	25	B	B	A
36571	25	B	B	B

Delivery Volume		
Item	Designation	Number
1	Signal Lamp	1
2	M18 Nut	1

“FUSE BOX”



MAIN PROPERTIES

- Operating Voltage: 12/24V
- Operating Current: 3A-30A
- Voltage drop max. 250 mv
- High temperature test 2 hrs @ +95 °C
- Low temperature test 72 hrs @ -40 °C
- Fuse replacing force 20~40N
- Terminal: at the bottom



TECHNICAL CHARACTERISTICS

KAT fuse boxes are specially designed to operate under severe working conditions in agriculture and construction vehicles and industrial machines.

The product is available with complete accessories like contact bridges, connectors and fuses.

Important properties are:

- The fuse boxes can be delivered with 2-, 4-, 6-, und 8-poles.
- The transparent cover has 2 versions: with or without screw fixing.
- The housing is available in 5 different colours as: nature, black, yellow, green, red.

* Cover Side Protection Level :

Cover Without Screw IP53

Cover With Screw IP56

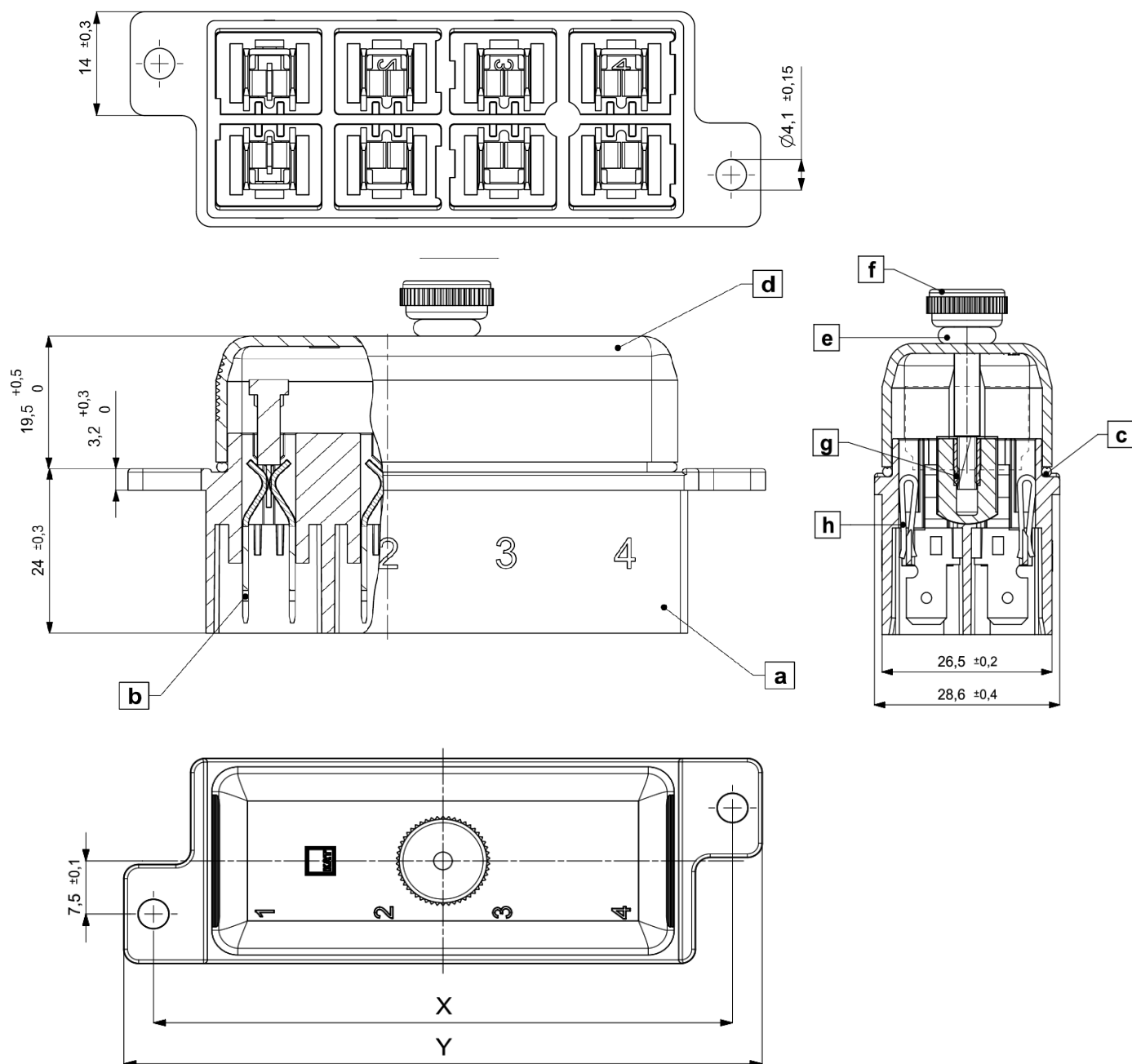
Materials

Item	Designation		Material	Flammability	Hardness	Coating	Color	Weight (g)
a	Housing	2 Pole	PA66 GF25	UL94 V-0	N/A	N/A	See Selection Section 3	17,20
		4 Pole						27,4
		6 Pole						43,2
		8 Pole						51,1
b	Contact	2-4-6-8 Pole	CuSn6	N/A	160-190 HV (R500)	Ag / 1-3µm	N/A	2,1
c	O-Ring	2 Pole	NBR	N/A	50 ShoreA	N/A	Black	0,2
		4 Pole						0,3
		6 Pole						0,4
		8 Pole						0,5
d	Cover	2 Pole	PC	UL94 V-0	N/A	N/A	Transparent	4,15
		4 Pole						7,3
		6 Pole						10,9
		8 Pole						14,5
e	O-Ring	2-4-6-8 Pole	PERBUNAN	N/A	70 ShoreA	N/A	Black	0,1
f	Screw		11SMnPb37	N/A	112-169 HB	Zinc / 5µm	N/A	3,3
g	Nut		CuZn39Pb3	N/A	125-165 HV (R420)	N/A	N/A	0,35
* h	Bridge		CuSn6	N/A	160-190 HV (R500)	Ag / 1-3µm	N/A	1.5

* Has to be ordered separately

NOTE : To insert the bridge push it all the way to the stop.

Dimensions



Fuse Box Dimensions				
	2 Pole	4 Pole	6 Pole	8 Pole
X	$46 \pm 0,3$	$78 \pm 0,5$	$110 \pm 0,5$	$142 \pm 0,8$
Y	$54 \pm 0,3$	$86 \pm 0,5$	$118 \pm 0,5$	$150 \pm 0,8$
Z	$33 \pm 0,3$	$65 \pm 0,5$	$97 \pm 0,5$	$129 \pm 0,8$

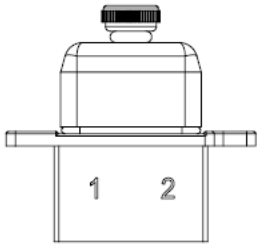
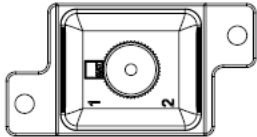
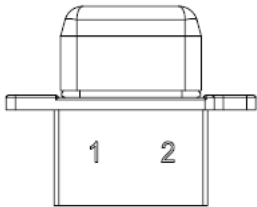
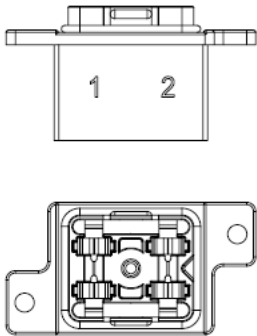
ORDERING SCHEME

Please define your product by selecting the technical features below

123

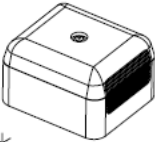
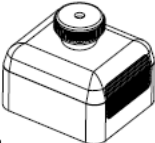
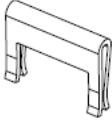
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1- Fuse Box Types
2- Pole
3- Colour

1	FUSE BOX TYPES
	WITH COVER & SCREW
A	
	
B	WITH COVER,WITHOUT SCREW
	
C	WITHOUT COVER & SCREW
	

2	POLE
1	2 POLE
2	4 POLE
3	6 POLE
4	8 POLE

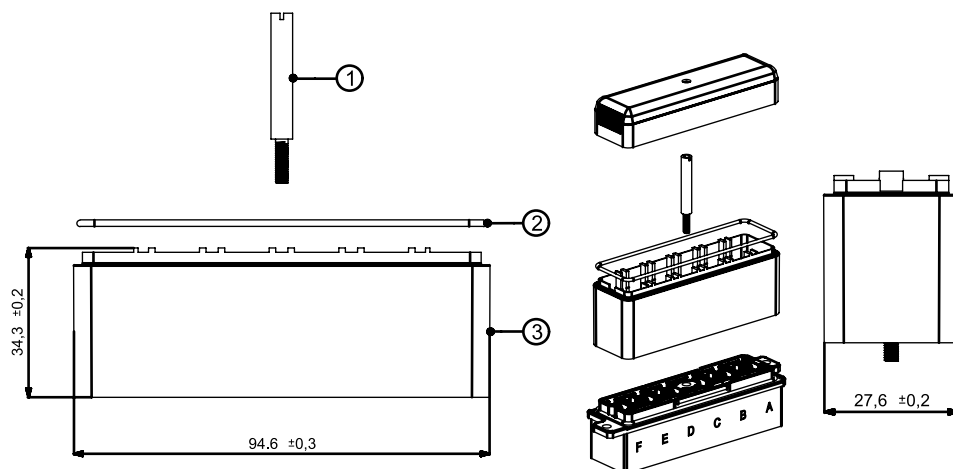
3	COLOR
A	White
B	Black
C	Green
D	Red
E	Yellow

SPARE PARTS			
COVER		2 Pole	30887
		4 Pole	30891
		6 Pole	30895
		8 Pole	30899
COVER WITH SCREW		2 Pole	30888
		4 Pole	30892
		6 Pole	30896
		8 Pole	30900
BRIDGE		30788	

* Fitting o-ring is included.

Accessories

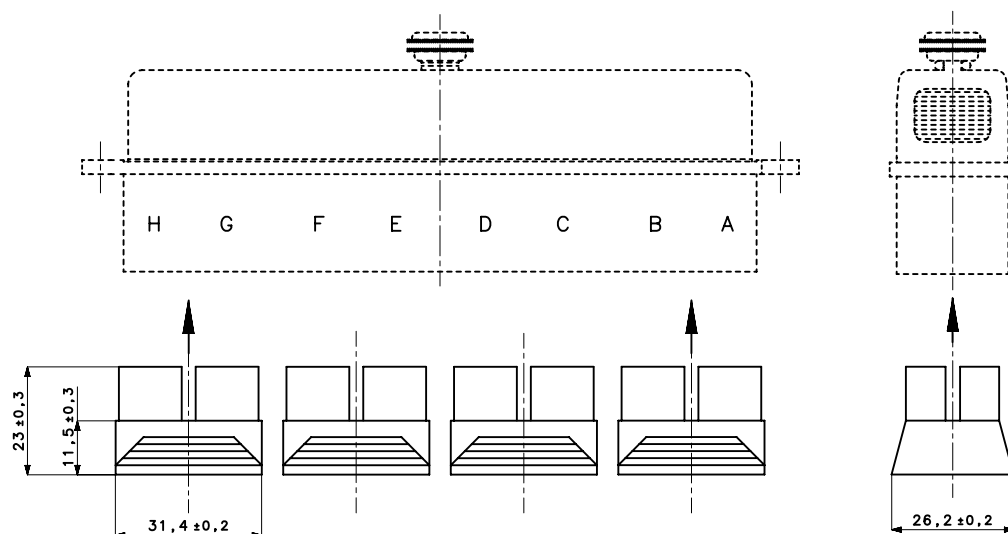
Item	Designation	Material	Flammability	Hardness	Coating	Color	Weight (g)
1	Adapter Screw	11SMnPb37	N/A	112-169 HB	Zinc / 5µm	N/A	4,5
2	O-Ring	NBR		50 ShoreA	N/A	Black	0,4
3	Adapter Housing	PA66 GF25	UL94 V-0	N/A	N/A		36,2



**Product
Nr.**

30903

Connector Set & Connector



Material : PA66

	Colour	2 Pole	4 Pole	6 Pole	8 Pole
		Code 1-2 / A-B	Code 3-4 / C-D	Code 5-6 / E-F	Code 7-8 / G-H
CONNECTOR	Natur	31910	31914	31918	31922
	Black	31911	31915	31919	31923
	Green	31912	31916	31920	31924
	Red	31913	31917	31921	31925
	Yellow	33513	33514	33515	31926
CONNECTOR SET	Natur	-	30773	30778	30783
	Black	-	30774	30779	30784
	Green	-	30775	30780	30785
	Red	-	30776	30781	30786
	Yellow	-	30777	30782	30787

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics		
	CODE		
	1	2	3
30698	A	1	A
30699	A	1	B
30700	A	1	C
30701	A	1	D
30702	A	1	E
30718	A	2	A
31626	A	2	B
30720	A	2	C
30721	A	2	D
30722	A	2	E
30738	A	3	A
34217	A	3	B
30740	A	3	C
30741	A	3	D
30742	A	3	E
30758	A	4	A
30759	A	4	B
30760	A	4	C
30761	A	4	D
30762	A	4	E
30693	B	1	A
30694	B	1	B
30695	B	1	C
30696	B	1	D
30697	B	1	E
30713	B	2	A
30714	B	2	B
30715	B	2	C
30716	B	2	D
30717	B	2	E

Product Nr.	Technical Characteristics		
	CODE		
	1	2	3
30733	B	3	A
30734	B	3	B
30735	B	3	C
30736	B	3	D
30737	B	3	E
30753	B	4	A
30754	B	4	B
30755	B	4	C
30756	B	4	D
30757	B	4	E
30688	C	1	A
30689	C	1	B
30690	C	1	C
30691	C	1	D
30692	C	1	E
30708	C	2	A
30709	C	2	B
30710	C	2	C
30711	C	2	D
30712	C	2	E
30728	C	3	A
30729	C	3	B
30730	C	3	C
30731	C	3	D
30732	C	3	E
30748	C	4	A
30749	C	4	B
30750	C	4	C
30751	C	4	D
30752	C	4	E

Delivery Volume		
Item	Designation	Number
1	Fuse Box	1

* Delivery Volume may differ according to the selected variant

“POLYFUSE

Customised Resettable Fuse”



MAIN PROPERTIES

- Temperature Range: -40 °C / + 85 °C
- Voltage Range: 16 V – 32 V
- Housing: PA, UL 94 V0
- Tabs: CuFe2P, Sn coated



TECHNICAL CHARACTERISTICS

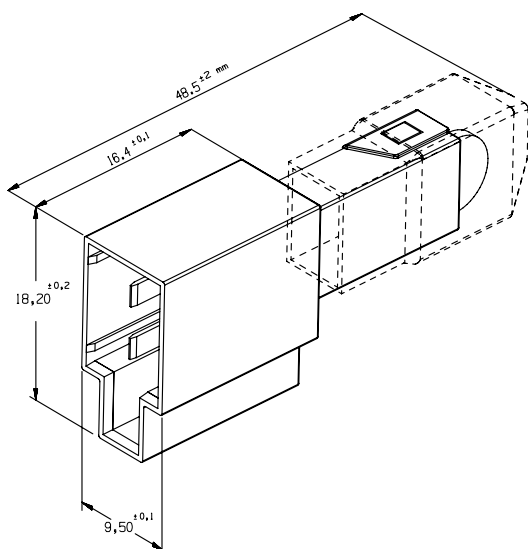
KAT develops and manufactures customer-specific overcurrent protection devices for automotive applications.

Like traditional fuses, KAT Polyfuse limits the flow of high current during fault conditions however resets after the fault is cleared.

According to customer requirements automotive grade PTC elements with different temperature-resistance characteristics are used in KAT polyfuses.



Advantages are low weight, self-regulating, long life, no maintenance, high operation reliability by omitting active component, EMC/ESD proved.



Delivery Volume		
Item	Designation	Number
1	Polyfuse	1

***Product will be customised upon request**

“POSITION SWITCH”



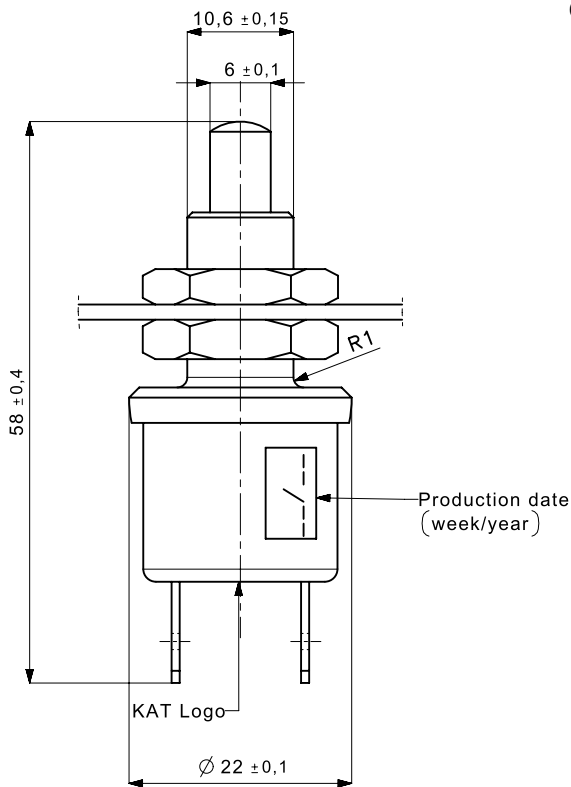
MAIN PROPERTIES

- Temperature Range: -40°C / +85°C
- Protection Class: IP 66
- Voltage: 12 V
- Current: 10 A
- Electromechanical Life: min. 200.000 cycles



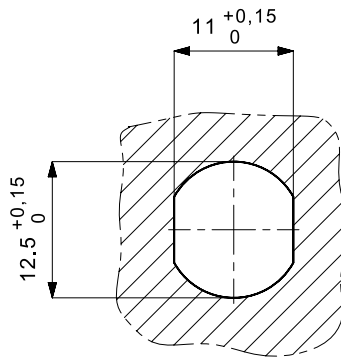
TECHNICAL CHARACTERISTICS

KAT position switch is designed to determine the position status of some mechanical parts in agricultural, commercial vehicles and construction machinery. The switch is normally closed.

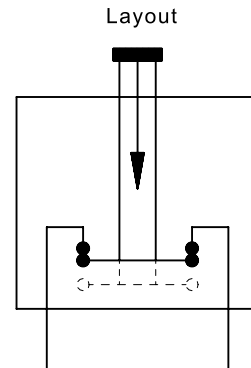


Materials

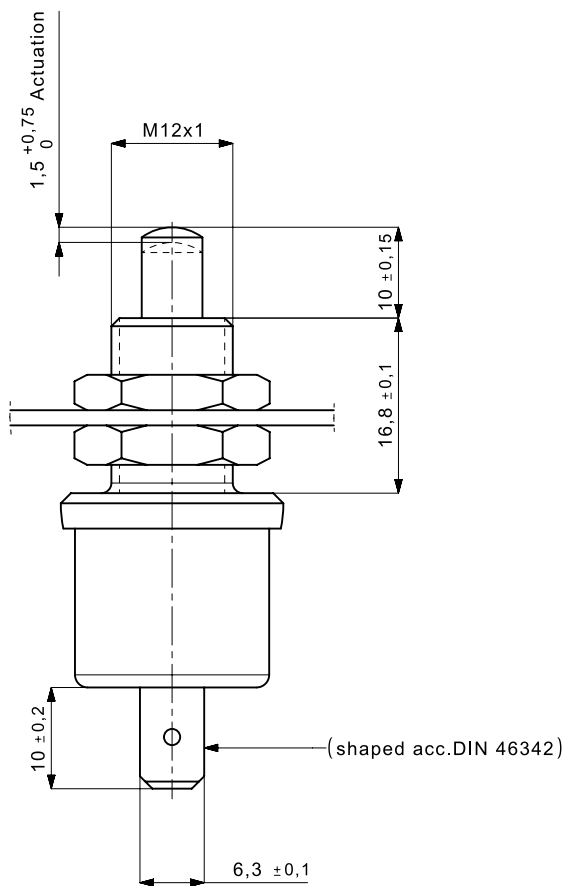
Threaded Cover: die-cast ZnAl4Cu1
 Housing : PA 66
 Push Rod : PA 6
 Contacts : AgNi10
 Terminals : CuSn6 ,tinned
 Spring : Stainless steel



installation hole on bracket



The switch can be fixed with the M12 nut on metal cover regarding its location of use.



Delivery Volume		
Item	Designation	Number
1	Position Switch	1
2	Nut	2

**Product
Nr.**

36002

“CONTACT SWITCH,”



MAIN PROPERTIES

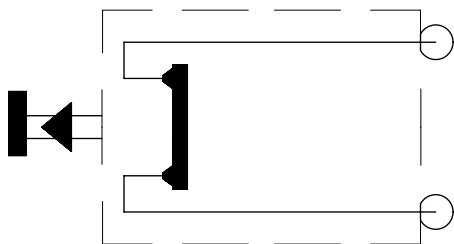
- Current / Voltage: 2 A / 24 V
- Operating Temperature: - 40 °C / + 85 °C
- Material: Housing : POM
- Socket and Tappet: PA
- Contacts: AgCu3
- Terminals: CuZn, Ag plated
- Electromechanical Life: min. 100.000 cycles



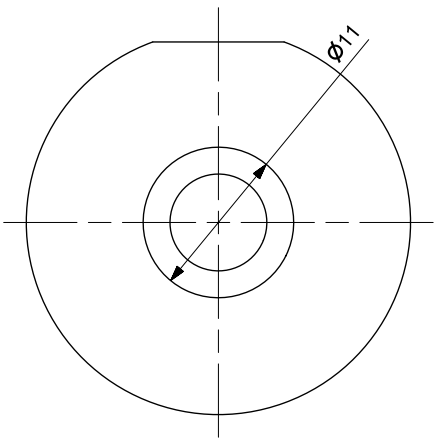
TECHNICAL CHARACTERISTICS

KAT Contact Switch is a universal pin switch which causes lights or any other 12 / 24 volt circuit to turn on when hood, trunk, door, tailgate, etc. are opened. The robust design of the switch allows the use in commercial vehicles.

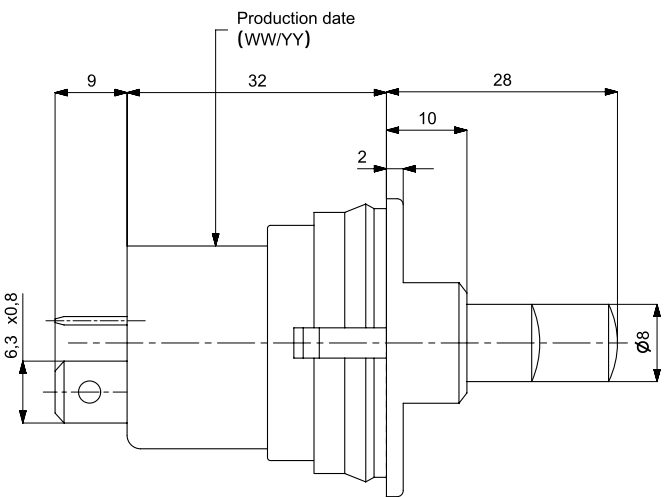
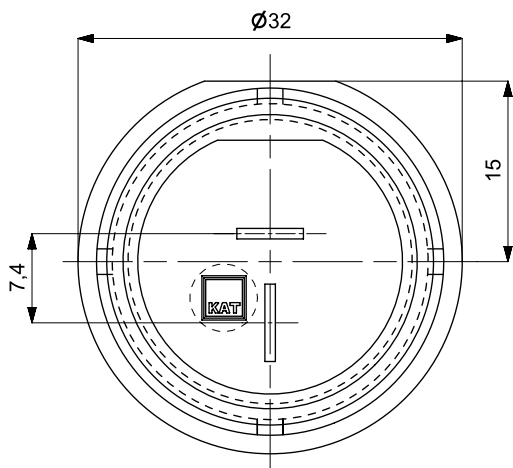
Circuit Diagram



Top View



Bottom View



Delivery Volume		
Item	Designation	Number
1	Contact Switch	1

**Product
Nr.**

36279

“PUSH BUTTON,”



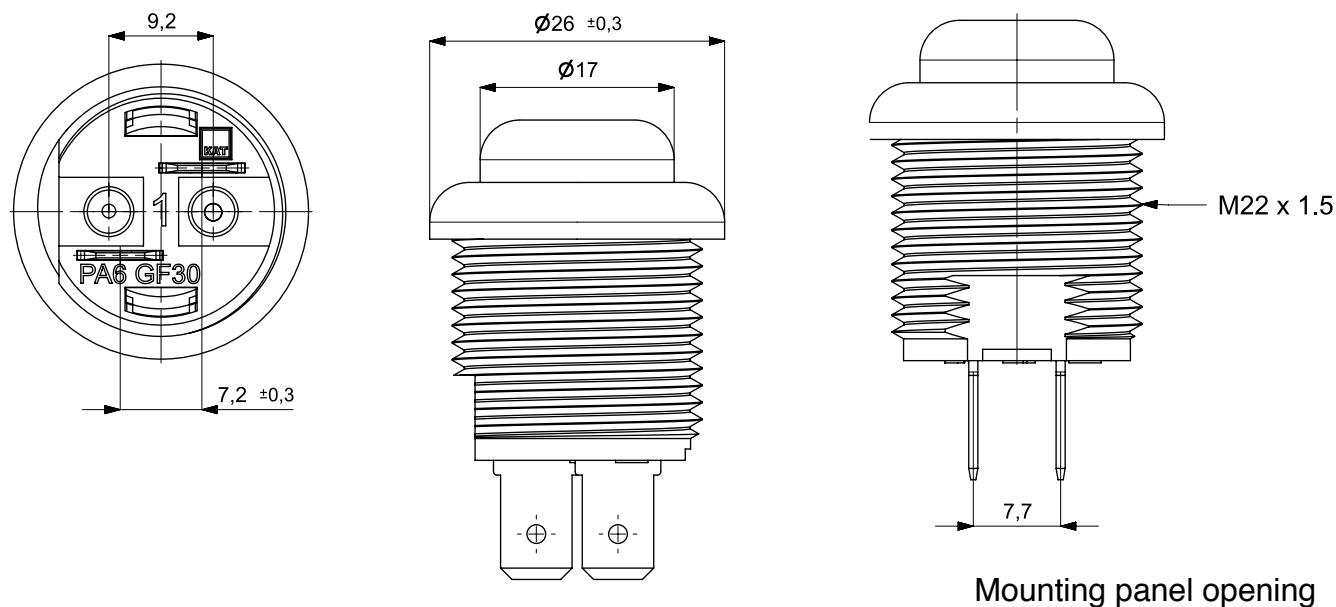
MAIN PROPERTIES

- Voltage: 12 V / 24 V
- Temperature Range: - 40°C / + 85 °C
- Max. Current: 12,5 A/12V or 6,25A/24V
- Protection Class:
button side, with/without cover IP 66/IP 40
terminal side, with/without cap IP 64/IP 20
- Stroke: $4,4 \pm 0,2$ mm
- Actuation Point: $1,6 \pm 0,6$ mm
- Force at Actuation Point: 9 ± 1 N
- Electromechanical Life: min. 25.000 cycles



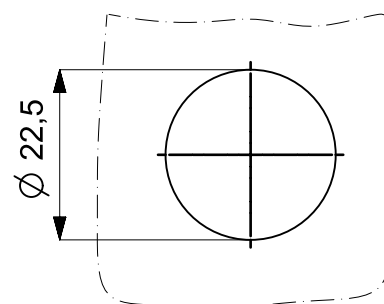
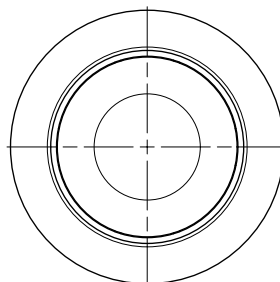
TECHNICAL CHARACTERISTICS

KAT Push Button is a product designed for spring (momentary) switching in the front panels of agricultural, commercial vehicles and construction machines. It has two different contact configurations as normally open and normally closed.



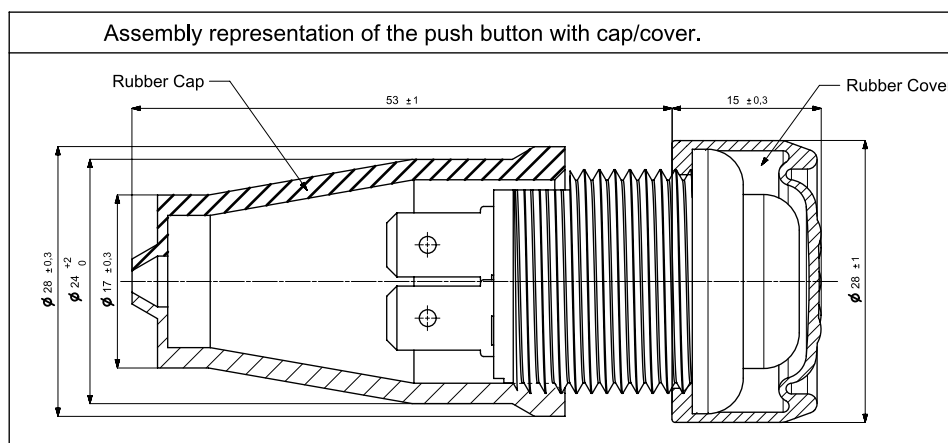
Materials

Housing	: PA6, glass-fiber-reinforced
Button	: POM black
Nut 6.5mm	: St 3 Lg Fe
Nut 3mm	: Al Mg SiSn Bi
Terminals	: CuZn37, silver coated



The product is mounted from the top of the panel with the M22 nut on the housing. The terminals of the product are available as blade or screw.

Depending on the customer's request, increased protection class suitable for use in open-cabin vehicles is available as well.



ORDERING SCHEME

Please define your product by selecting the technical features below

1

2

3

4

5

6

--	--	--	--	--	--

1- Electrical Diagram

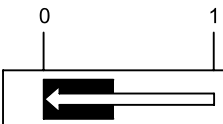
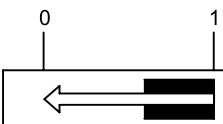
2- Switch Types

3- Nut Types

4- Rubber Cover

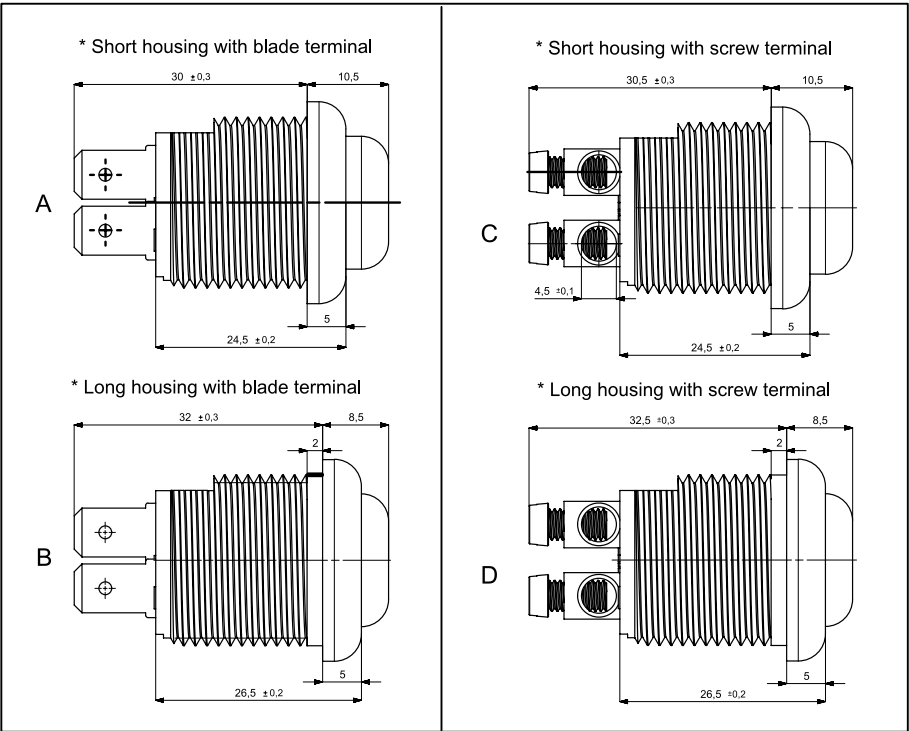
5- Button

6- Rubber Cap

ELECTRICAL DIAGRAM	1		max. intensity of current at 12V	Voltage drop	max. intensity of current at 24V	Voltage drop
	1		12.5A	≤300mV	6.25A	≤300mV
	* ONLY FOR "A" HOUSING TYPE					
	2		max. intensity of current at 12V	Voltage drop	max. intensity of current at 24V	Voltage drop
			12.5A	≤300mV	6.25A	≤300mV

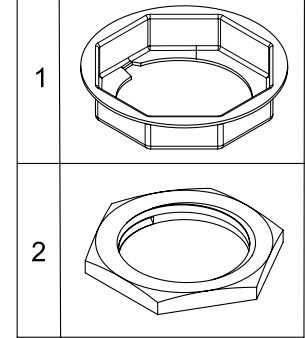
2

SWITCH TYPE



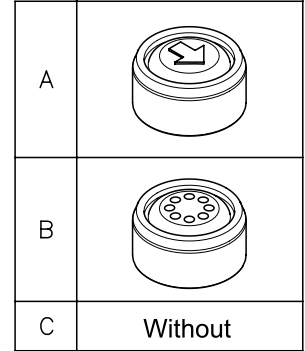
3

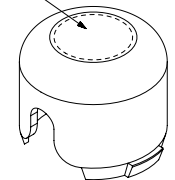
NUT TYPES



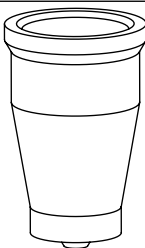
4

RUBBER COVER



5	BUTTON	
1	Black Button With Symbol	
2	Black Button Without Symbol	
3	Red Button With Symbol	
4	Red Button Without Symbol	

* Symbols are acc.to ISO7000

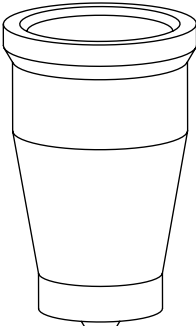
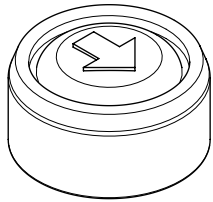
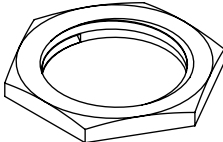
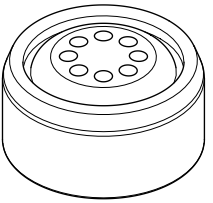
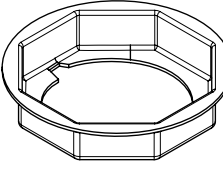
6	RUBBER CAP	
1	With	
2	Without	

* For button side IP Protection upgrade

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics					
	CODE					
	1	2	3	4	5	6
34418	1	A	1	B	2	1
34417	1	A	1	B	2	2
34416	1	A	1	C	2	2
34784	1	A	2	B	2	2
34783	1	A	2	C	2	2
34414	2	A	1	A	2	2
34415	2	A	1	B	2	1
34413	2	A	1	B	2	2
34412	2	A	1	C	2	1
34409	2	A	1	C	2	2
35908	2	A	2	B	2	2
34419	2	A	2	C	2	2
34935	2	A	2	C	4	2
34821	2	B	1	B	2	2
34411	2	B	1	C	2	2
34408	2	C	1	B	2	1
34407	2	C	1	B	2	2
34406	2	C	1	C	2	2

SPARE PARTS		
		
		
Product Nr: 35125	Product Nr: 36281	Product Nr: 36282
	Product Nr: 36074	Product Nr: 36283

Delivery Volume		
Item	Designation	Number
1	Push Button	1
2	Nut	1

“ROTARY SWITCH,”



MAIN PROPERTIES

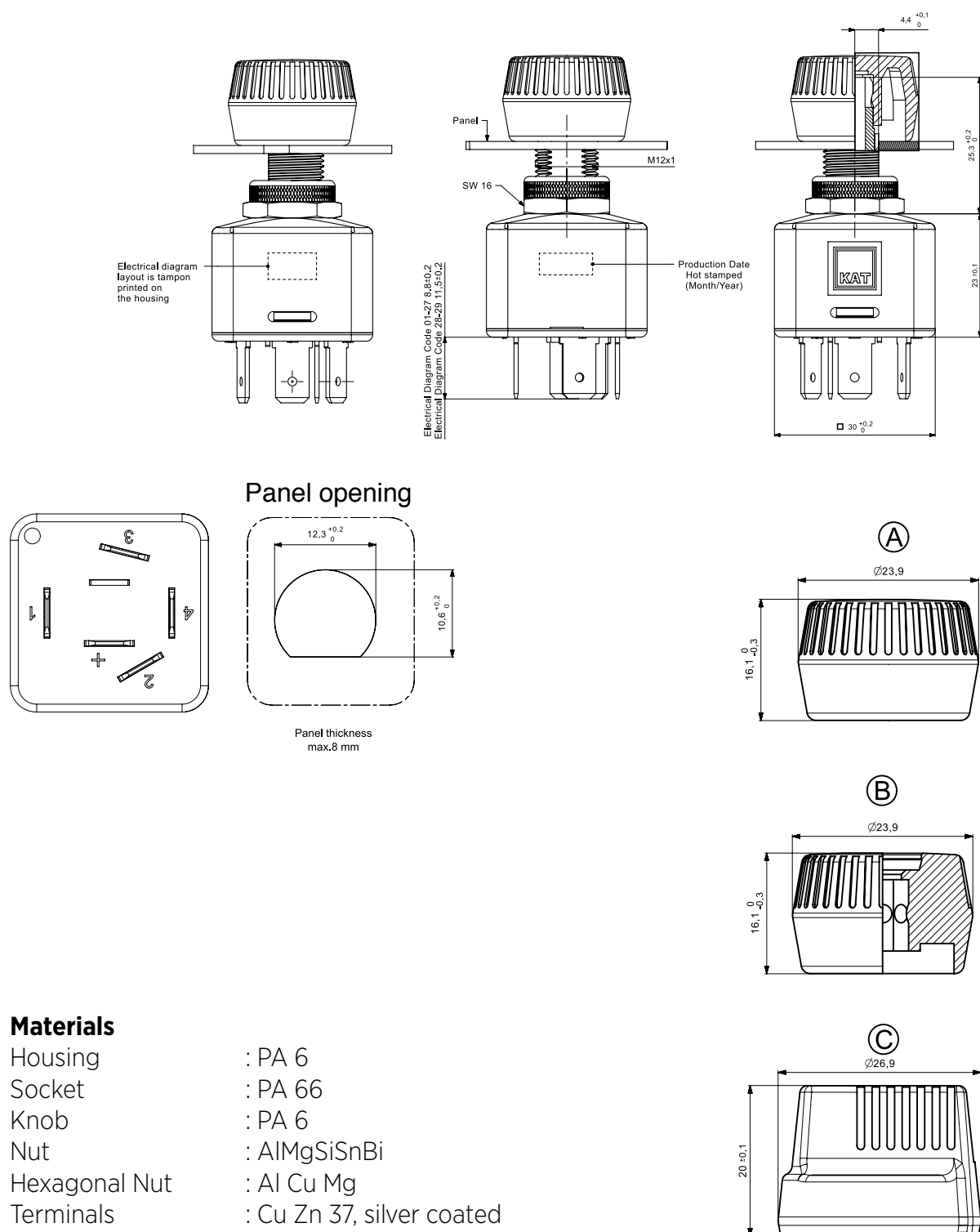
- Temperature Range: -40°C / +85°C
- Protection Class: IP 53 Knob Side
- Voltage: 12 V / 24 V
- Current: max. 15 A
- Electromechanical Life: min. 25.000 cycles



TECHNICAL CHARACTERISTICS

KAT rotary switches are qualified according to international standards (electrical, mechanical and environmental) . They are mainly used in agricultural vehicles, construction equipment and marine vessels for panel-mount applications.

Available in maintained and momentary function options the KAT rotary switches offer maximum performance and reliability. Several switching options up to 4 positions increase the versatility of application. Different button types, symbols and illumination colors can be selected. Connectors are available.



ORDERING SCHEME

Please define your product by selecting the technical features below

1	2	3	4	5
_____	_____	_____	_____	_____

- 1-** Electrical Diagram
- 2-** Knob Types
- 3-** Nut Type 1
- 4-** Nut Type 2
- 5-** Illumination

1 ELECTRICAL DIAGRAM


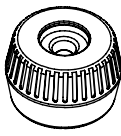












































Code	Layout	Position	Illumination	Self-Recoiling
01		Off-On	No	No
02		Off-On	No	Yes
03		Off-On	Yes	No
04		Off-On	Yes	No
05		Off-On	Yes	Yes
06		Off-On	Yes	Yes
07		On-On	No	No
08		On-On	Yes	No
09		On-On	Yes	No
10		On-On	Yes	Yes
11		On-On	Yes	Yes
12		On-On	No	Yes
13		Off-On-On	No	No
14		Off-On-On	No	Yes
15		Off-On-On	Yes	No
16		Off-On-On	Yes	No

Code	Layout	Position	Illumination	Self-Recoiling
17		On-Off-On	No	No
18		On-Off-On	No	Yes
19		On-Off-On	No	Yes
20		On-Off-On	Yes	No
21		On-Off-On	Yes	No
22		On-Off-On	Yes	Yes
23		On-Off-On	Yes	Yes
24		On-On-On	No	No
25		On-On-On	No	Yes
26		On-On-On	Yes	No
27		On-On-On	Yes	No
28		Off-On-On	No	No
29		Off-On-On-On	No	No

* If illuminated version is selected then knob type has to be selected among types B&C

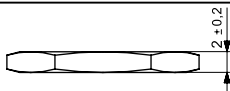
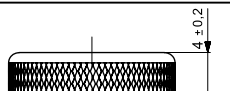

2

KNOB TYPES

Note	For non-illuminated versions				For illuminated versions			
								
	Code	Image	Code	Image	Code	Image	Code	Image
	A01		A15		B01	 3 glass Yellow-Red-Green	C01	 Sign natur
	A02		A16		B02	 Yellow glass	C02	 Sign Red
	A03		A17		B03	 Red glass	C03	 Sign Yellow
	A04		A18		B04	 Green glass	C04	 Sign Green
	A05		A19		B05	 Yellow glass		
	A06		A20		B06	 Red glass		
	A07		A21		B07	 Yellow glass		
	A08		A22		B08	 Green glass		
	A09		A23		B09	 Green glass		
	A10		A24		B10	 Red glass		
	A11		A25		B11	 Yellow glass		
	A12		A26		B12	 Yellow glass		
	A13		A27		B13	 Green glass		
	A14							

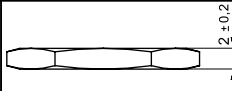
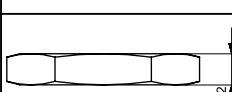
3

NUT TYPE 1

A		C	
B		D	No Nut

4

NUT TYPE 2

A	
B	

5

ILLUMINATION

0	No illumination
1	Lamp(14V)
2	Lamp(28V)
3	LED(14V)
4	LED(28V)

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

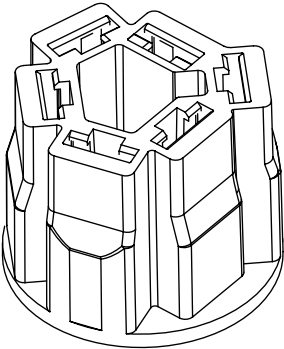
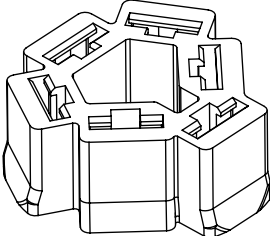
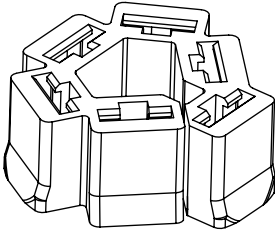
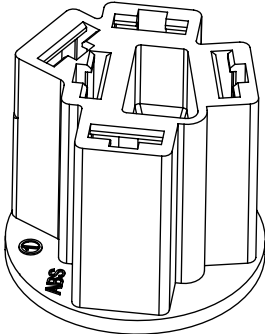
Product Nr.	Technical Characteristics				
	CODE				
	1	2	3	4	5
31703	1	-	C	A	0
31697	1	A03	C	B	0
31698	1	A04	C	B	0
31699	1	A05	C	B	0
31695	1	A11	C	B	0
31696	1	A16	C	B	0
36286	1	A24	C	A	0
31700	1	A24	C	B	0
36287	1	A25	C	A	0
31701	1	A25	C	B	0
31702	1	A26	C	B	0
31704	1	C01	C	B	0
35891	1	C04	C	B	0
31705	2	A12	C	B	0
36289	2	A20	C	A	0
31706	2	A20	C	B	0
36143	2	A21	C	B	0
31707	2	C01	C	B	0
31723	3	B01	C	B	3
36021	3	B03	C	B	1
31720	3	B03	C	B	3
31722	3	B04	C	B	3
31721	3	B05	C	B	3
36288	3	B12	C	A	1
34878	3	B12	C	B	3
31975	3	C01	C	B	3
31724	3	C02	C	B	3
31725	3	C03	C	B	3
31726	3	C04	C	B	3
31753	4	B01	C	B	4
36022	4	B03	C	B	2
31749	4	B03	C	B	4
31752	4	B04	C	B	4
31751	4	B05	C	B	4
31750	4	B12	C	B	4
34462	4	C01	C	B	4
31754	4	C02	C	B	4
31755	4	C03	C	B	4
36318	4	C04	C	A	2
31756	4	C04	C	B	4
32006	5	C01	C	B	3
31711	7	-	C	A	0
31709	7	A01	C	B	0
31710	7	A04	C	B	0
31708	7	A13	C	B	0
31712	7	C01	C	A	0
32007	8	C01	C	B	3
35399	9	C01	C	B	4
35503	9	C04	C	B	4
31980	13	A10	C	B	0
31713	13	A14	C	B	0
31714	13	A18	C	B	0
31715	13	C01	C	B	0
36295	14	A07	C	A	0
31762	14	A07	C	B	0
36303	14	C01	C	A	0

Product Nr.	Technical Characteristics				
	CODE				
	1	2	3	4	5
31763	14	C01	C	B	0
31727	15	B06	C	B	3
36290	15	B07	C	A	1
31728	15	B07	C	B	3
36291	15	B08	C	A	1
31729	15	B08	C	B	3
36284	15	C02	C	A	1
31730	15	C02	C	B	3
36285	15	C03	C	A	1
31731	15	C03	C	B	3
35843	15	C04	C	A	3
31732	15	C04	C	B	3
31759	16	C03	C	B	4
31760	16	C04	C	B	4
31717	17	-	C	B	0
31716	17	A15	C	B	0
31686	17	C01	C	A	0
36297	18	A08	C	A	0
31764	18	A08	C	B	0
31765	18	C01	C	B	0
31718	19	A17	C	B	0
36052	19	C01	C	A	0
31719	19	C01	C	B	0
36294	20	B02	C	A	1
31735	20	B09	C	B	3
36292	20	B10	C	A	1
31733	20	B10	C	B	3
36293	20	B11	C	A	1
31734	20	B11	C	B	3
31736	20	B13	C	B	3
36273	20	C01	C	A	3
31737	20	C02	C	B	3
31738	20	C03	C	B	3
35842	20	C04	C	A	3
31739	20	C04	C	B	3
31757	21	C03	C	B	4
31758	21	C04	C	B	4
31742	24	-	C	B	0
35011	24	A01	C	A	0
31740	24	A19	C	B	0
31741	24	A21	C	B	0
35844	24	C01	C	A	0
31743	24	C01	C	B	0
36300	24	C02	C	A	0
31974	26	C01	C	B	3
31778	26	C02	C	B	3
36215	26	C04	C	A	1
35841	26	C04	C	A	3
35400	27	C01	C	B	4
34664	28	-	B	A	0
31771	28	-	C	A	0
31766	28	A09	C	B	0
31768	28	A10	C	B	0
31767	28	A18	C	B	0
31769	28	A22	C	B	0
31770	28	A23	C	B	0

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics				
	CODE				
	1	2	3	4	5
31772	28	C01	C	A	0
34226	28	C01	C	B	0
34665	29	-	B	A	0
36212	29	-	B	B	0
31773	29	-	C	A	0
35233	29	-	C	B	0
31747	29	-	D	B	0
35838	29	A02	C	A	0
31687	29	A02	C	B	0
31745	29	A06	C	B	0
34921	29	A21	C	A	0
31744	29	A21	C	B	0
31746	29	A22	C	B	0
36313	29	A27	D	A	0
31748	29	C01	C	A	0
35922	29	C03	C	B	0

ACCESSORIES	
 <p>Connector 6 pole H=24mm Product Nr: 31858</p>	 <p>Connector 6 pole H=11.5mm Product Nr: 32036</p>
 <p>Connector 6 pole H=11.5mm Product Nr: 33555 * With cable insertion channel</p>	 <p>* Connector 5 pole H=24mm Product Nr: 31805</p>

Delivery Volume		
Item	Designation	Number
1	Rotary Switch	1
2	Nut	1 or 2 (Optional)
3	Knob	1

* This Connector is for following Electrical Diagrams applicable: 28 – 29

“MAIN CIRCUIT BREAKER,”



MAIN PROPERTIES

- Temperature Range: -40°C / +85°C
- Protection Class: IP 69K
- Voltage: max. 32 V
- Current: 250 A , 500 A
- Electromechanical Life: min. 5.000 cycles
- Key Torque: max. 1,6 Nm
- Key Rotation Angle: 103° +/-2°



WHY KAT

Advantages of KAT's Main Circuit Breaker product line (250A / 500A / load-switching or non-load-switching) against the competition are explained below.

Main circuit breakers were designed decades ago by well-known manufacturers. These designs no longer meet today's criteria of reliability and service life. Therefore, KAT analysed the market and developed a copyrighted product line and successfully placed it in the market. Almost the entire commercial vehicle sector, manufacturers of construction vehicle machines, tractors, and forklifts rely on KAT's premium products.

The weak points of the products on the market are, above all:

1. Inadequate IP protection
2. Structurally weak design of the housing / socket connection
3. The electrical contact
4. Inferior materials
5. Unsafe production processes

The utility model is primarily concerned with improvements in IP protection and contact reliability:

1. The design principle of the housing / base connection has been designed so that no forces are transmitted into the interior of the switch via the cable harness - contact interrupts are successfully prevented.
2. The contact bridge is "float-mounted" - thus contact breaks are successfully prevented.
3. All current / voltage-carrying parts are made of high-quality copper/copper-wrought alloys and, if necessary, alloyed silver materials.
4. The housing is ultrasonically welded and additionally sealed with an O-ring. Moisture and dust are permanently prevented from entering the contact area.
5. The key is sealed by an additional O-ring to the switch housing. - Moisture and dust are permanently prevented from entering the contact area.
6. The protective cap prevents dust and water ingress into the switch area.

In addition, state-of-the-art production methods are applied - all processes are monitored according to statistical methods. An automatic 100% function test of all important parameters is carried out and results are saved. This also ensures traceability.

The above-mentioned principles are extremely effective. Due to persistent progress, an exceptionally high failsafe performance has been achieved. KAT has been the sole and preferred supplier to OEMs because of the gained customer confidence.

TECHNICAL CHARACTERISTICS

KAT main circuit breakers are specially designed to operate under severe conditions of transportation, agriculture and construction vehicles.

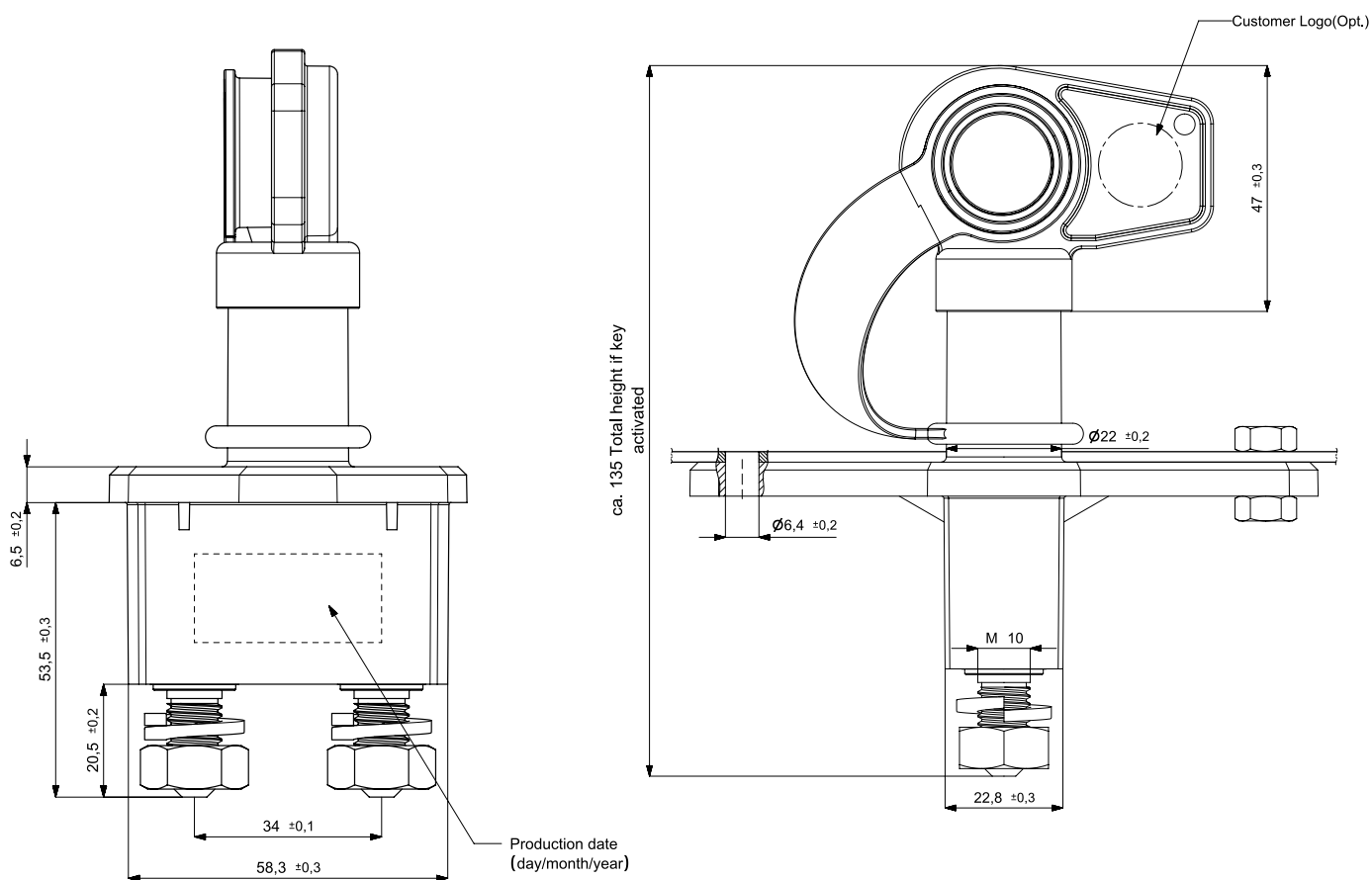
250A

The circuit breaker is used for security purposes in case of maintenance, and for eliminating the danger of a possible fire hazard. With the removable key, it creates additional safeguards against unauthorized use.

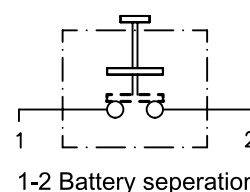
The circuit breaker rubber cap is a standard accessory and provides effective protection against dust, dirt and moisture while the key is not inserted.

2 function versions are available: with or without ULA (Under Load Activating)
Key options are lockable and non-lockable.

KAT circuit breaker can be delivered with oval or round flange.

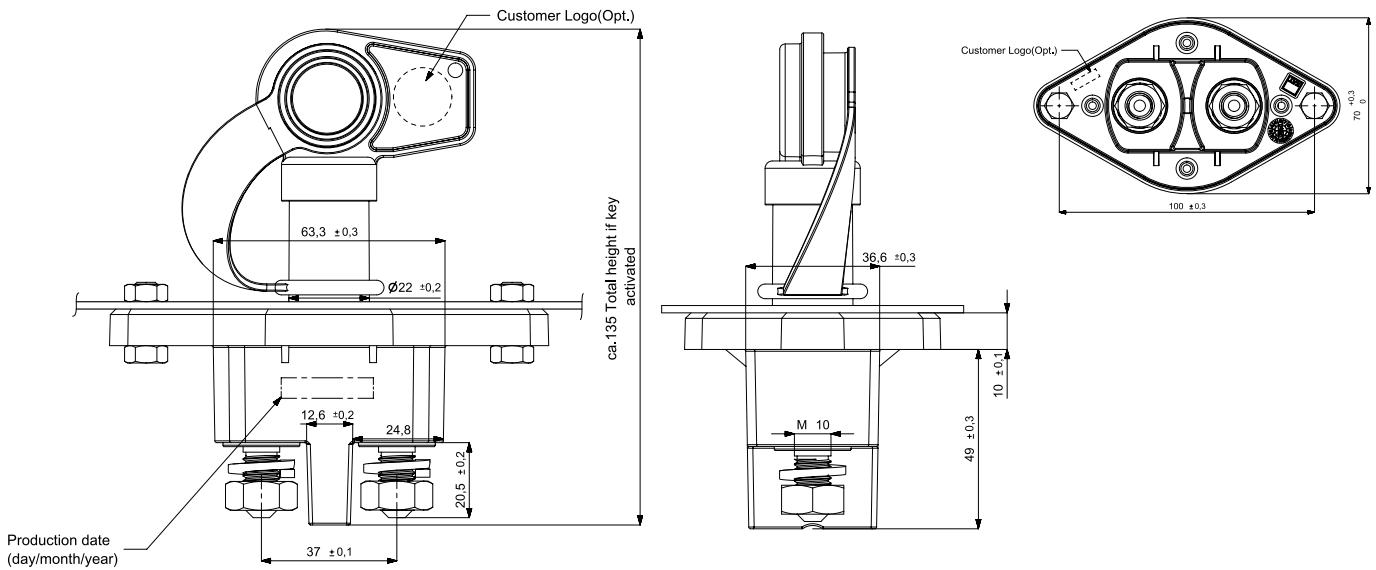


Circuit Diagram

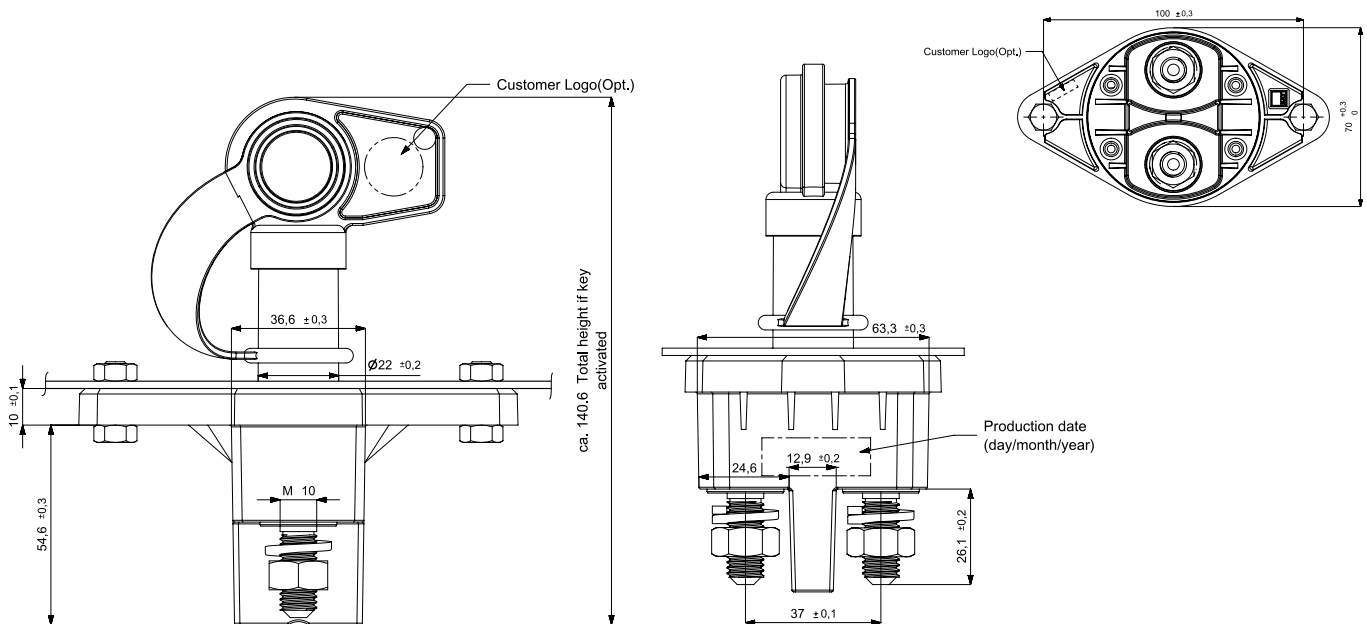


1-2 Battery separation

500 A / coaxial housing



500 A / non-coaxial housing



Materials

- Key : PA 6
- Protection Cap : PVC
- Contacts (welded) : AgSnO₂
- Housing and Flange: PC GF20 (UL94 V-0)
- Washer (DIN 127) : A2-60/70 XN
- Nut : A2-60/70 XN
- O-ring : NBR
- Lock Plate(opt.) : Stainless Steel (thickness 2mm)

ORDERING SCHEME

Please define your product by selecting the technical features below

250 A

1	2	3	4	5
___	___	___	___	___

- 1 _ Battery Separation Switch Type / Mounting Panel Opening
 2 _ Electrical Values
 3 _ Nut Type
 4 _ Accessories
 5 _ Key Logo

1	SWITCH TYPE	MOUNTING PANEL OPENING
1		
2		
3		

2	ELECTRICAL VALUES
	A
	(WITH ACTIVATION UNDER LOAD)
	Max.Voltage : 24V
	Continuous load : 250A
	Short term : 2500A for 5 sec.
	Can be activated : max.50 times under load 250A
	Voltage drop : max.50 mV under 250A
	Connection bolt material : CuZn39+Ag plated (3 micron)
	Contact material : AgCu3
	Connection bridge material : Cu+Ag plated (3 micron)
	B
	(WITHOUT ACTIVATION UNDER LOAD)
	Max.Voltage : 24V
	Continuous load : 250A
	Short term : 2000A for 5 sec.
	Voltage drop : max.100 mV under 250A
	Connection bolt material : CuZn39
	Contact material : Cu
	Connection bridge material : Cu

3	NUT TYPE	Quant.
1		2
2		4

* Product fulfills requirements best when it is mounted underneath panel.

4	A	B	C
		LOCK OFF	LOCK ON/OFF
		*Comes with special key	*Comes with special key
		1	2
		WITH PADLOCK	WITHOUT PADLOCK
		ABUS 72 / 30	Padlock must be acc.to below requirements
		32	16
		1	2
		WITH PADLOCK	WITHOUT PADLOCK
		ABUS 72 / 30	Padlock must be acc.to below requirements
		32	16

5	KEY LOGO
1	Without Logo
2	With KAT Logo
3	Customer Specific

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics				
	Code 1	Code 2	Code 3	Code 4	Code 5
31990	1	A	1	A	2
36489	1	A	1	A	1
34931	1	A	2	A	2
35333	1	A	2	A	2
33302	1	B	1	A	2
34488	1	B	1	A	1
35127	1	B	1	A	2
31688	2	A	1	A	2
35252	2	A	1	A	2
33545	2	A	2	A	2
34806	2	A	-	A	2
33298	2	B	1	A	2
34895	2	B	1	A	2
35218	2	B	1	A	2
34996	2	B	2	A	2
35821	3	A	1	A	2
36819	3	A	1	A	1
35753	3	A	2	A	2
35250	3	B	1	A	2

SPARE PARTS

With KAT Logo	302200130008 (33419)
Without Logo	34487
Customer Specific	ASK.

With KAT Logo	36326
Without Logo	302200130050 (36327)
Customer Specific	ASK.

*Comes with special key

With KAT Logo Without padlock	36503
Without Logo Without padlock	36505
With KAT Logo With padlock	36507
Without Logo With padlock	36509
Customer Specific	ASK.

*Comes with special key

With KAT Logo Without padlock	36502
Without Logo Without padlock	36504
With KAT Logo With padlock	36506
Without Logo With padlock	36508
Customer Specific	ASK.

302200130011 (33648)

302200130052_Washer (DIN 127)

302200130053_Nut M10 (DIN 934)

302200130056_Nut M10 (DIN 439)

36510

36511

Delivery Volume

Item	Designation	Number
1	Battery Disconnection Switch	1
2	Key	1
3	Protection Cap	1
4	Washer	2
5	Nut	2 or 4 (Optional)

“IGNITION SWITCH PRODUCT LINE,,



WHY KAT

Advantages and benefits of KAT's Ignition Switch Product Line against the competition are explained below.

Ignition switches which are currently in the market were developed decades ago by well-known manufacturers. These designs do no longer meet today's criteria of reliability and durability and, above all, the switching of low loads in vehicles with BUS systems.

This is why KAT has analysed the market and developed a product line which also works as a future proof core product in immobiliser systems or systems for operating data acquisition. Here, a complete product line was systematically developed, such as those released by the German Federal Motor Transport Authority or Thatcham, among others.

KAT is now the largest supplier in Europe for safety systems in the construction vehicle industry. The market leaders of this industry, such as JCB, Liebherr, Terex, Wacker Neuson, among others, use KAT products in their original equipment.

The weak points of the ignition switch product line in the market are, above all:

1. Inadequate IP protection
2. The electrical contact
3. Inferior materials
4. Unsafe production processes

All current / voltage-carrying parts are made of high-quality copper/copper-wrought alloys and, if necessary, alloyed silver materials.

Contacts are fully welded in a process-safe manner.

Entry of moisture and dust into the contact area is permanently prevented by secure O-ring seals.

On request, the connection side is encapsulated. Entry of moisture and dust entry into the contact area is permanently prevented.

The key cylinder side is protected by a special foam if desired.

In addition, state-of-the-art production methods are applied - all processes are monitored according to statistical methods. An automatic 100% function test of all important parameters is carried out and results are saved. This also ensures traceability.

The above-mentioned principles are extremely effective. Due to persistent progress, an exceptionally high failsafe performance has been achieved. KAT has been the sole and preferred supplier to OEMs because of the gained customer confidence.

“IGNITION LIGHT SWITCH”



MAIN PROPERTIES

- Voltage Range: 12 V / 24 V
- Max. Load: 20 A for 12 V, 10 A for 24 V
- Temperature Range: - 40 °C / + 85 °C
- Protection Class: IP 53

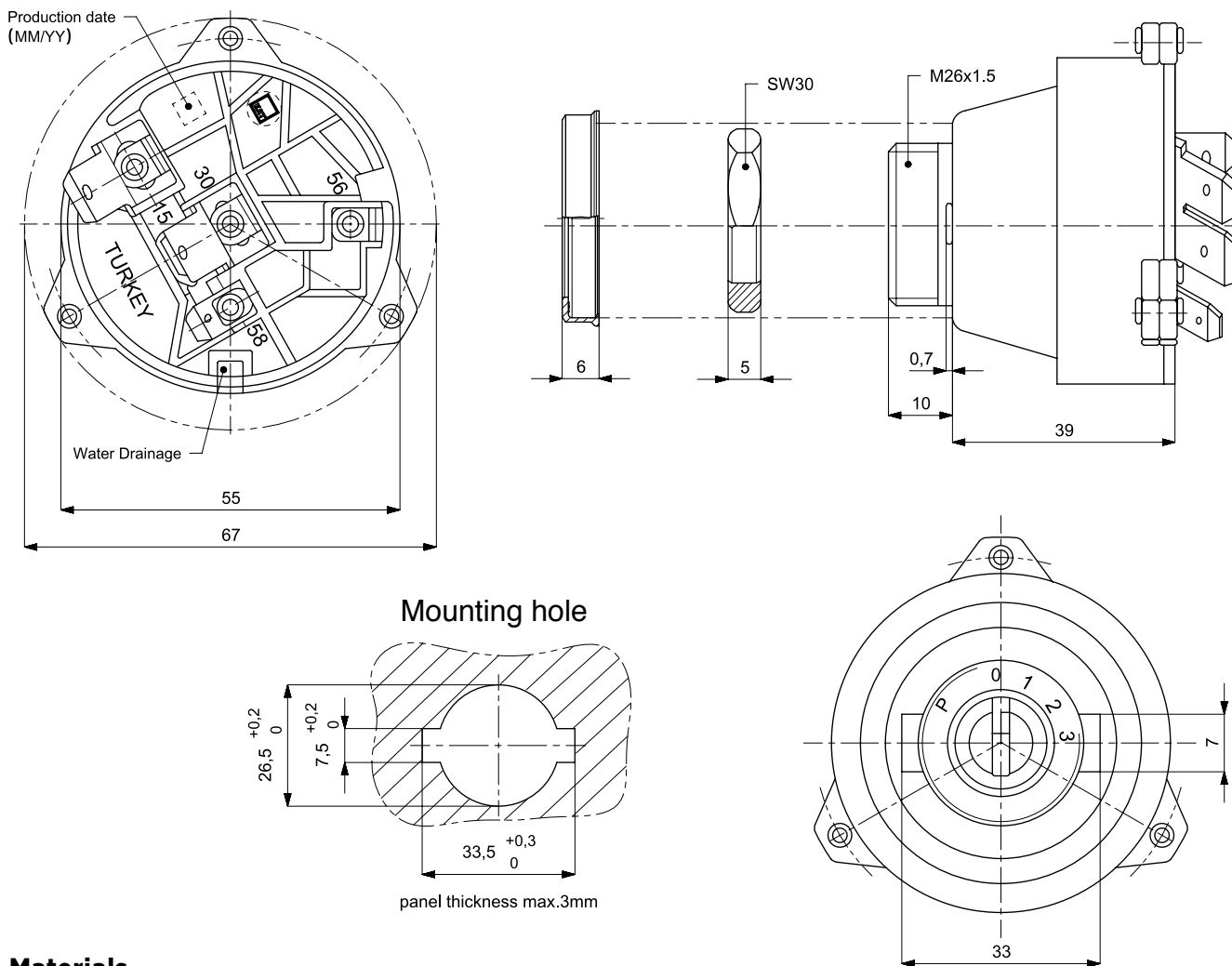


TECHNICAL CHARACTERISTICS

KAT Ignition Light switches are specially designed to operate under severe working conditions in agricultural machines.

Some of main properties of this switch are:

- has 5 or 6 positions
- has screw or blade terminals
- is supplied with 2 keys
- has key removing in P and O position
- requires 26,5 mm diameter panel hole
- has individual parts made of PA 6 (housing and socket), CuSn6 (terminals) and stainless steel (springs)



Materials

Key	: CuNi alloy
Housing / base	: PA 6, glass-fiber reinforced
Terminals	: CuSn 6 for blade, CuZn 38 for screw
Contact bridges	: E-Cu 57

ORDERING SCHEME

Please define your product by selecting the technical features below

- 1- Electrical Diagram
- 2- Switch Types
- 3- Key
- 4- Cover
- 5- Water Drainage
- 6- Plugs Silver plated
- 7- Color of the key (black,red,blue)
- 8- Customer Logo (on the key)





1	2	3	4	5	6	7	8
—	—	—	—	—	—	—	—

1

ELECTRICAL DIAGRAM






A

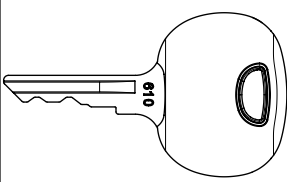
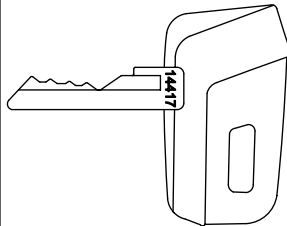
5 circuit positions (P-0-1-2-3)

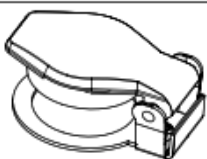
	P	0	1	2	3
30-58					
30-15					
30-56					

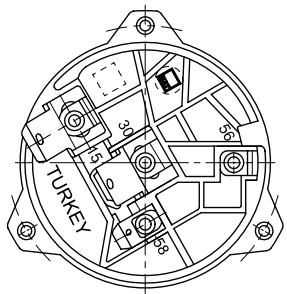
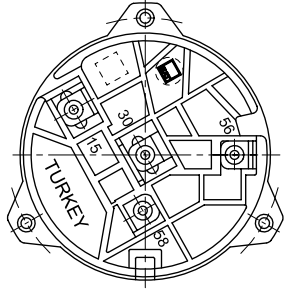
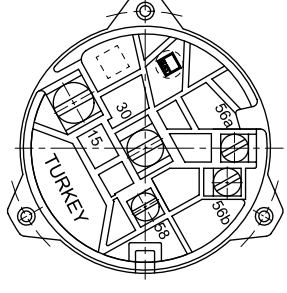
B

6 circuit positions (P-0-1-2-3-4)

	P	0	1	2	3	4
30-15						
30-58						
30-56b						
30-56a						

3	KEY
A	610 
B	417 
C	Without

4	COVER
1	With 
2	Without

2	SWITCH TYPE
1	60 - degree blade  51
2	90 - degree blade  53
3	Screw  55

5	WATER DRAINAGE
A	With
B	Without

6	PLUGS
1	Silver Plated
2	No Plating

7	KEY COLOR
A	BLACK (Standard)
B	RED
C	BLUE

8	CUSTOMER LOGO (on the key)
1	With
2	Without

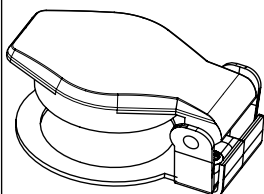
LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics							
	Code 1	Code 2	Code 3	Code 4	Code 5	Code 6	Code 7	Code 8
36207	A	1	A	2	B	2	A	2
36252	A	1	-	2	B	2	-	-
36253	A	2	-	2	B	1	-	-
36208	B	1	B	2	A	2	A	2
36254	B	1	A	2	A	2	A	2
36255	B	3	A	2	B	2	A	2
36256	B	3	-	2	B	2	-	-
36299	B	3	A	1	B	2	A	2

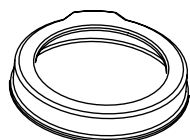
ACCESSORIES

Cover



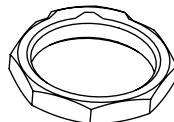
Product Nr: 31447

Protection Cap



Product Nr: 33672

Nut



Product Nr: 33673

Delivery Volume

Item	Designation	Number
1	Light Switch	1
2	Nut	1
3	Protection Cap	1
4	Keys	2

“IGNITION SWITCH”



MAIN PROPERTIES

- Temperature Range: -40°C / +85°C
- Protection Class (Key side): IP 63 or IP 64
- Protection Class (Terminal side): IP 63 or IP 66
- Voltage Range: 12V / 24V



TECHNICAL CHARACTERISTICS

KAT ignition switches are specially designed to operate under severe conditions of transportation, agriculture, construction vehicles and machines.

The KAT ignition switch family can be installed in many vehicle types with different switching diagram options. Up to 5 different electrical switching diagrams are available such as 0-I-II-III-IV.

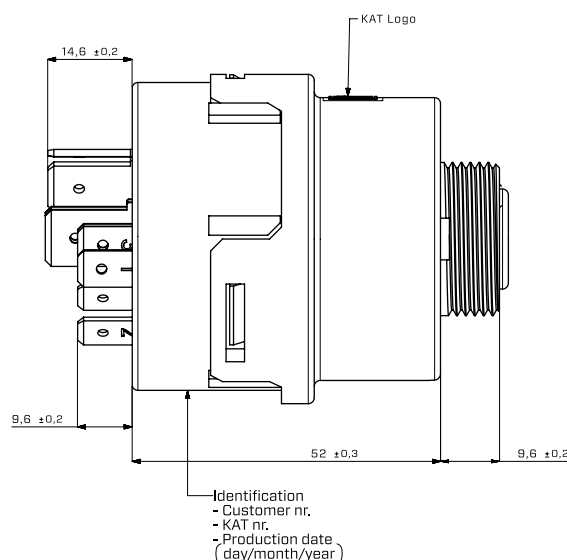
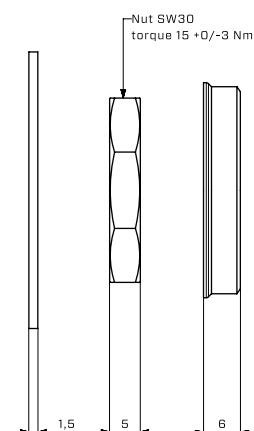
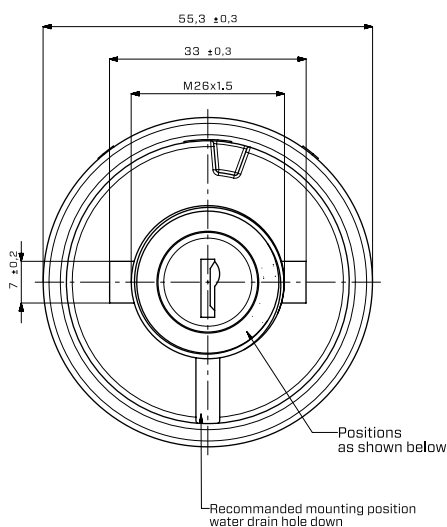
The starter position is a temporary position that is triggered by the spring. After fulfillment of the starter function, it returns to the driving position.

The blocking mechanism located in the ignition switch prohibits re-starting in running vehicles in order to protect the starter motor.

According to the environmental conditions of use, models with different IP grades are available. In addition, the flap cover supporting the protection class is available optionally.

Ignition switches are delivered together with keys suitable for encryption on them. Some key types have sealing supplementary capabilities while mounted in the product. Key models with different designs and different colors are available. Special designs can be developed according to customer requirements.

The ignition switch is fixed from behind with the nut provided together to the slot opened in the panel according to the measurements indicated in the technical drawing. The plastic cover mounted on the nut completes the product visually.



Materials

Base	: PA 6.6, glass-fiber reinforced
Housing	: PA 6, glass-fiber reinforced
Terminals	: E- Cu57, silver coated
Contacts	: AgSn02
Springs	: X12 CrNi 17 7
Seal	: Neoprene
Key	: CuNi alloy

ORDERING SCHEME

Please define your product by selecting the technical features below

1 2 3 4 5 6 7 8 9 10 11

___	___	___	___	___	___	___	___	___	___	___
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

- 1- Electrical diagrams for ignition switches for engines with or without pre-heating
- 2- If restart-inhibitor desired
- 3- Ingress protection grade (at the front and rear side separately)
- 4- If condensation water drainage desired
- 5- Immobiliser Type
- 6- The Key types (The type A,B,C,D,L,M,N,P is used only for switches with IP64 & IP65 at the front side)
- 7- Color of the key (black,red,blue)
- 8- Customer Logo (on the key)
- 9- Key removing Position
- 10-The mounting hole type for installation
- 11- If cover desired

1

ELECTRICAL DIAGRAM

G

WITH PRE-HEATING

A

	0° P	50° 0	90° I	130° II	170° III	max. load at 12V	voltage drop	max. load at 24V	voltage drop	max. load at 80V	voltage drop	loading time
30-58						8A	≤300 mV	4A	≤300 mV		≤300 mV	∞
30-15/54						35A		17.5A		3A		∞
30-19						70A		35A				3.5 min.
30-17						70A		35A				3.5 min.
30-50a						70A/18A Induk.		40A/5A				temporary (1min.)

B

	0° P	50° 0	90° I	130° II	170° III	max. load at 12V	voltage drop	max. load at 24V	voltage drop	max. load at 80V	voltage drop	loading time
30-58						8A	≤300 mV	4A	≤300 mV		≤300 mV	∞
30-15/54						35A		17.5A		3A		∞
30-19						70A		35A				3.5 min.
30-17						70A		35A				3.5 min.
30-50a						70A/18A Induk.		40A/5A				temporary (1min.)

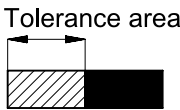
C

	0° 0	40°	80° II	120° III	max. load at 12V	voltage drop	max. load at 24V	voltage drop	max. load at 80V	voltage drop	loading time
30-15/54					35A	≤300 mV	17.5A	≤300 mV	3A	≤300 mV	∞
30-19					70A		35A				3.5 min.
30-17					70A		35A				3.5 min.
30-50a					70A/18A Induk.		40A/5A				temporary (1min.)

D

	0° 0	40° I	80° II	120° III	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-58					8A	≤ 300 mV	4A	≤ 300 mV	∞
30-15/54					35A		17.5A		∞
30-19					70A		35A		3.5 min.
30-17					70A		35A		3.5 min.
30-50a					70A/18A Induk.		40A/5A		temporary (1min.)

Connection Terminals		
Nr.	A 6,3 x 0,8 DIN 46244	A 9.5 x 1.2 DIN 46244
30		2x
58	1x	
15/54	2x	
19	2x	
17		2x
50a	1x	



Z WITHOUT PRE-HEATING

A

	0° 0	40° I	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-15/54			35A	≤ 300 mV	17.5A	≤ 300 mV	∞

B

	0° P	50° 0	90° I	130° II	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-58					8A	≤ 300 mV	4A	≤ 300 mV	∞
30-15/54					35A		17.5A		∞
30-50a					70A/18A Induk.		40A/5A		temporary (1min.)

C

	0° P	50° 0	90° I	130° II	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-58					8A	≤ 300 mV	4A	≤ 300 mV	∞
30-15/54					35A		17.5A		∞
30-50a					70A/18A Induk.		40A/5A		temporary (1min.)

D

	0° 0	40° I	80° II	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-15/54				35A	≤ 300 mV	17.5A	≤ 300 mV	∞
30-50a				70A/18A Induk.		40A/5A		temporary (1min.)

E

	0° 0	40° I	80° II	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-58				8A	≤ 300 mV	4A	≤ 300 mV	∞
30-15/54				35A		17.5A		∞
30-50a				70A/18A Induk.		40A/5A		temporary (1min.)

F

	0° P	50° 0	90° I	130° II	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-58					8A	≤ 300 mV	4A	≤ 300 mV	∞
30-SF					8A		4A		∞
30-15/54					35A		17.5A		∞
30-50a					70A/18A Induk.	VI	40A/5A	VI	temporary (1min.)

G

	0° 0	90° I	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-SF			8A	≤ 300 mV	4A	≤ 300 mV	∞
30-15/54			35A		17.5A		∞
30-50a			70A/18A Induk.		40A/5A		temporary (1min.)

H

	0° 0	90° I	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-15/54			35A	≤ 300 mV	17.5A	≤ 300 mV	∞
30-50a			70A/18A Induk.		40A/5A		temporary (1min.)

I

	0° 0	40° I	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-58			8A	300 mV	4A	300 mV	∞
30-SF			8A		4A		∞
30-15/54			35A		17.5A		∞
30-50a			70A/18A Induk.	VI	40A/5A	VI	temporary (1min.)

J

	0° 0	40° I	80° II	max. load at 12V	voltage drop	max. load at 24V	voltage drop	loading time
30-58				8A	300 mV	4A	300 mV	∞
30-SF				8A		4A		∞
30-15/54				35A		17.5A		∞
30-50a				70A/18A Induk.	VI	40A/5A	VI	temporary (1min.)

Connection terminals		
Nr.	A 6,3 x 0,8 DIN 46244	A 9,5 x 1,2 DIN 46244
30		2x
58	1x	
15/54	2x	
50a	2x	
SF	1x	

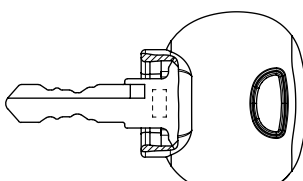
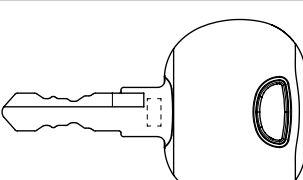
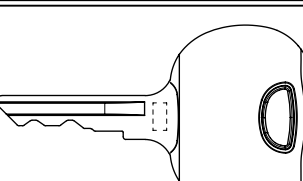
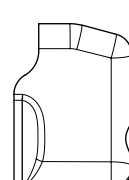
2 RESTART INHIBITOR	
1	WITH
2	WITHOUT

3 IP (DIN40050)		
	KEY SIDE	TERMINAL SIDE
1	IP64	IP66
2	IP64	IP63
3	IP63	IP66
4	IP63	IP63
5	IP65	IP66
6	IP65	IP63

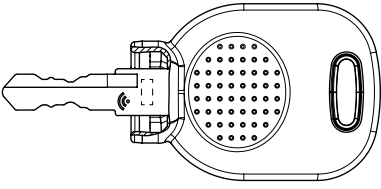
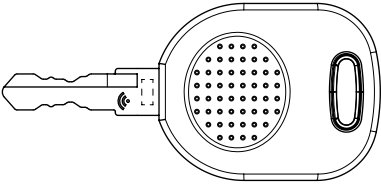
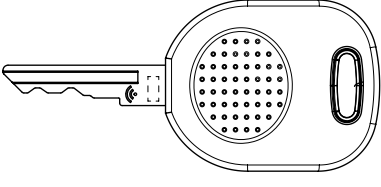
4 WATER DRAINAGE	
1	WITH
2	WITHOUT

5 IMMOBILISER TYPE	
M	WITH
O	WITHOUT

* For Immobiliser Selection please refer to page 82

6 KEY TYPES		
A	606	
B	607	
C	608	
D	0-250	
E	602	
F	603	
G	0-250	
H	609	
j	610	
* K	001	

FOR SWITCHES WITHOUT IMMOBILISER

L	606	
M	607	
N	608	
P	0-250	
R	602	
S	603	
T	0-250	
U	609	
V	610	
W	628	
Z	Customer specific	

FOR SWITCHES WITH IMMOBILISER

Keys for Switches with Immobiliser deliveries in Immobiliser box

FOR SWITCHES WITH IMMOBILISER

Keys for Switches with Immobiliser deliveries in Immobiliser box

*Key type K is to be screwed on the ignition switch.

*D,G,P,T types are keyed different

Note: *Locking system available from 0-250

*Locking number to be given separately

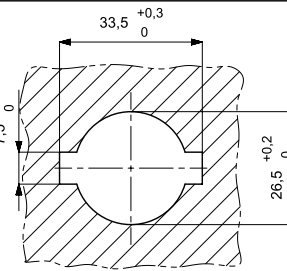
If not mentioned random deliveries will be made

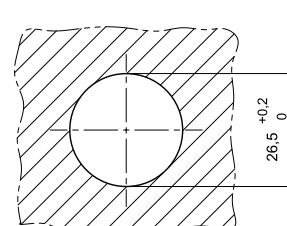
7 KEY COLOR		
1	BLACK (Standard)	RAL 9017
2	RED	RAL 3020
3	BLUE	RAL 5005
4	N/A	

8 CUSTOMER LOGO	
A	WITH
B	WITHOUT

9 KEY REMOVING POSITION	
1	0
2	P
3	P+0
4	0+1

* Immobiliser types delivered in Red (for master key) and Blue (for slave key)

10 MOUNTING HOLE	
K	 <p>panel thickness is max. 3 mm</p>

O	 <p>panel thickness is max. 3 mm</p>
---	---

11 COVER	
1	WITH
2	WITHOUT

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics										
	Code 1	Code 2	Code 3	Code 4	Code 5	Code 6	Code 7	Code 8	Code 9	Code 10	Code 11
31156	G - A	2	4	1	O	J	1	B	1	O	2
31157	G - A	2	4	1	O	F	1	B	1	O	2
31161	G - A	1	4	1	O	F	1	B	1	O	2
31427	G - A	2	3	1	O	J	1	B	1	O	2
31428	G - A	2	3	1	O	F	1	B	1	O	2
33013	G - A	2	4	1	M	V	1	B	1	O	2
33014	G - A	2	4	1	M	S	4	B	1	O	2
33081	G - A	2	3	1	M	V	1	B	1	O	2
33082	G - A	2	3	1	M	S	4	B	1	O	2
33018	G - A	1	4	1	M	S	4	B	1	O	2
33086	G - A	1	3	1	M	S	4	B	1	O	2
31459	G - A	1	3	1	O	F	1	B	1	O	2
31158	G - A	2	2	2	O	D	1	B	1	K	2
31159	G - A	2	2	2	O	A	1	B	1	O	2
31160	G - A	2	2	2	O	B	1	B	1	O	2
31162	G - A	1	2	2	O	M	1	B	1	O	2
31648	G - A	1	2	2	O	A	1	B	1	O	2
31456	G - A	2	1	2	O	D	1	B	1	O	2
31457	G - A	2	1	2	O	A	1	B	1	O	2
31458	G - A	2	1	2	O	B	1	B	1	O	2
31460	G - A	1	1	2	O	B	1	B	1	O	2
31649	G - A	1	1	2	O	A	1	B	1	O	2
33015	G - A	2	2	2	M	P	4	B	1	K	2
33016	G - A	2	2	2	M	L	4	B	1	O	2
33017	G - A	2	2	2	M	M	4	B	1	O	2
33019	G - A	1	2	2	M	M	4	B	1	O	2
33080	G - A	1	2	2	M	L	4	B	1	O	2
33083	G - A	2	1	2	M	P	4	B	1	K	2
33084	G - A	2	1	2	M	L	4	B	1	O	2
33085	G - A	2	1	2	M	M	4	B	1	O	2
33087	G - A	1	1	2	M	M	4	B	1	O	2
33148	G - A	1	1	2	M	L	4	B	1	O	2
31165	G - B	2	4	1	O	F	1	B	3	O	2
31167	G - B	2	4	1	O	E	1	B	3	O	2
31172	G - B	1	4	1	O	F	1	B	3	O	2
31174	G - B	1	2	1	O	M	1	B	3	K	2
31566	G - B	1	4	1	O	F	1	B	3	K	1
35249	G - B	1	4	1	O	F	1	B	3	O	1
35822	G - B	2	1	1	O	B	1	B	3	K	2
35939	G - B	1	4	1	O	S	1	B	3	O	1
36042	G - B	1	2	1	O	B	1	B	3	K	1
35122	G - B	2	4	1	O	F	1	B	3	O	1
34930	G - B	2	4	1	O	S	1	B	3	O	1
31472	G - B	1	1	1	O	B	1	B	3	K	2
34628	G - B	1	1	1	O	D	1	B	1	K	2
31463	G - B	2	3	1	O	F	1	B	3	O	2
31470	G - B	1	3	1	O	F	1	B	3	O	2
31164	G - B	2	4	1	O	G	1	B	3	O	2
31166	G - B	2	4	1	O	H	1	B	3	O	2
31171	G - B	1	4	1	O	E	1	B	3	O	2
33030	G - B	1	2	1	M	M	4	B	3	K	2
33098	G - B	1	1	1	M	M	4	B	3	K	2
31462	G - B	2	3	1	O	G	1	B	3	O	2
33021	G - B	2	4	1	M	T	4	B	3	O	2
33089	G - B	2	3	1	M	T	4	B	3	O	2
33022	G - B	2	4	1	M	S	4	B	3	O	2
33090	G - B	2	3	1	M	S	4	B	3	O	2
31464	G - B	2	3	1	O	H	1	B	3	O	2
31465	G - B	2	3	1	O	E	1	B	3	O	2
33024	G - B	2	4	1	M	R	4	B	3	O	2
33092	G - B	2	3	1	M	R	4	B	3	O	2
31469	G - B	1	3	1	O	E	1	B	3	O	2
33027	G - B	1	4	1	M	R	4	B	3	O	2
33095	G - B	1	3	1	M	R	4	B	3	O	2
33028	G - B	1	4	1	M	S	4	B	3	O	2
33096	G - B	1	3	1	M	S	4	B	3	O	2
31565	G - B	2	3	1	M	S	4	B	3	O	2
31567	G - B	1	3	1	O	F	1	B	3	K	1
33079	G - B	1	4	1	M	S	4	B	3	K	1
33147	G - B	1	3	1	M	S	4	B	3	K	1
33043	G - B	2	4	1	M	S	4	B	2	O	2
33111	G - B	2	3	1	M	S	4	B	2	O	2
31187	G - B	2	4	1	O	F	1	B	2	O	2
31510	G - B	2	3	1	O	F	1	B	2	O	2
34751	G - B	2	4	1	O	F	1	B	3	O	1

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

31461	G-B	2	3	1	O	-	-	-	3	K	2
34461	G-B	1	2	1	O	D	1	B	1	K	2
31163	G-B	2	4	1	-	-	-	-	3	K	2
36610	G-B	1	1	1	O	M	1	B	3	K	2
36620	G-B	2	4	1	O	S	1	B	3	O	2
36622	G-B	1	4	1	O	S	1	B	3	O	2
31169	G-B	2	2	2	O	A	1	B	3	O	2
31170	G-B	2	2	2	O	B	1	B	3	O	2
31173	G-B	1	2	2	O	B	1	B	3	O	2
35251	G-B	1	1	2	O	B	1	B	1	K	2
34762	G-B	1	2	2	O	B	1	B	3	O	1
31468	G-B	2	1	2	O	B	1	B	3	O	2
34032	G-B	1	2	2	O	K	1	B	3	O	2
34916	G-B	1	2	2	O	K	2	B	3	O	2
31467	G-B	2	1	2	O	A	1	B	3	O	2
31471	G-B	1	1	2	O	B	1	B	3	O	2
33025	G-B	2	2	2	M	L	4	B	3	O	2
33026	G-B	2	2	2	M	M	4	B	3	O	2
33029	G-B	1	2	2	M	M	4	B	3	O	2
33093	G-B	2	1	2	M	L	4	B	3	O	2
33094	G-B	2	1	2	M	M	4	B	3	O	2
33097	G-B	1	1	2	M	M	4	B	3	O	2
36609	G-B	1	2	2	O	M	1	B	3	O	2
36621	G-B	2	2	2	O	M	1	B	3	O	2
31176	G-C	2	4	1	O	F	1	B	1	O	2
31180	G-C	1	4	1	O	F	1	B	1	O	2
34910	G-C	1	1	1	O	B	1	B	1	O	1
34917	G-C	1	2	1	O	B	1	B	1	O	1
35161	G-C	1	2	1	O	A	1	B	1	K	2
33036	G-C	1	4	1	M	S	4	B	1	O	2
31181	G-C	1	4	1	O	-	-	-	1	O	2
35171	G-C	1	-	1	-	-	-	-	1	-	2
31175	G-C	2	4	1	O	G	1	B	1	O	2
31179	G-C	1	4	1	O	G	1	B	1	O	2
31473	G-C	2	3	1	O	G	1	B	1	O	2
31474	G-C	2	3	1	O	F	1	B	1	O	2
31477	G-C	1	3	1	O	G	1	B	1	O	2
31498	G-C	1	3	1	O	F	1	B	1	O	2
33031	G-C	2	4	1	M	T	4	B	1	O	2
33032	G-C	2	4	1	M	S	4	B	1	O	2
33035	G-C	1	4	1	M	T	4	B	1	O	2
33099	G-C	2	3	1	M	T	4	B	1	O	2
33100	G-C	2	3	1	M	S	4	B	1	O	2
33103	G-C	1	3	1	M	T	4	B	1	O	2
33104	G-C	1	3	1	M	S	4	B	1	O	2
31499	G-C	1	3	1	O	-	-	-	1	O	2
36623	G-C	2	4	1	O	S	1	B	1	O	2
36642	G-C	1	4	1	O	S	1	B	1	O	2
31178	G-C	2	2	2	O	B	1	B	1	O	2
34061	G-C	1	4	2	O	F	1	B	1	O	2
31182	G-C	1	2	2	O	B	1	B	1	O	2
35225	G-C	1	2	2	O	B	1	B	1	K	2
31500	G-C	1	1	2	O	B	1	B	1	O	2
33038	G-C	1	2	2	M	M	4	B	1	O	2
31177	G-C	2	2	2	O	D	1	B	1	O	2
31475	G-C	2	1	2	O	D	1	B	1	O	2
31476	G-C	2	1	2	O	B	1	B	1	O	2
33033	G-C	2	2	2	M	P	4	B	1	O	2
33034	G-C	2	2	2	M	M	4	B	1	O	2
33101	G-C	2	1	2	M	P	4	B	1	O	2
33102	G-C	2	1	2	M	M	4	B	1	O	2
33106	G-C	1	1	2	M	M	4	B	1	O	2
36613	G-C	1	2	2	O	M	1	B	1	O	2
36624	G-C	2	2	2	O	M	1	B	1	O	2
31184	G-D	2	4	1	O	S	1	B	1	O	2
31186	G-D	1	4	1	O	F	1	B	1	O	2
35548	G-D	1	1	1	O	A	1	B	1	O	2
35123	G-D	1	2	1	O	A	1	B	1	K	1
35214	G-D	1	2	1	O	B	1	B	1	K	1
35993	G-D	1	1	1	O	A	1	B	1	K	2
31509	G-D	1	3	1	O	F	1	B	1	O	2
31183	G-D	2	4	1	O	G	1	B	1	O	2
31506	G-D	2	3	1	O	G	1	B	1	O	2
31507	G-D	2	3	1	O	F	1	B	1	O	2
33039	G-D	2	4	1	M	-	4	B	1	O	2
33040	G-D	2	4	1	M	S	4	B	1	O	2
33042	G-D	1	4	1	M	S	4	B	1	O	2
33107	G-D	2	3	1	M	T	4	B	1	O	2
33108	G-D	2	3	1	M	S	4	B	1	O	2

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

33110	G - D	1	3	1	M	S	4	B	1	O	2
36947	G - D	1	4	1	O	G	1	B	1	O	2
31185	G - D	2	2	2	O	B	1	B	1	O	2
35499	G - D	2	1	2	O	A	1	B	1	O	2
31508	G - D	2	1	2	O	B	1	B	1	O	2
33041	G - D	2	2	2	M	M	4	B	1	O	2
33109	G - D	2	1	2	M	M	4	B	1	O	2
31188	Z - A	2	4	1	O	F	1	B	1	O	2
35082	Z - A	2	2	1	O	M	1	B	1	K	2
36023	Z - A	2	1	1	O	B	1	B	1	O	2
36139	Z - A	2	4	1	O	S	1	B	1	K	2
31511	Z - A	2	3	1	O	F	1	B	1	O	2
33044	Z - A	2	4	1	M	S	4	B	1	O	2
33112	Z - A	2	3	1	M	S	4	B	1	O	2
36348	Z - A	2	4	1	O	-	-	-	1	-	2
36512	Z - A	2	3	1	O	G	1	B	1	O	2
34776	Z - A	1	2	1	M	M	4	B	1	O	2
36625	Z - A	2	4	1	O	S	1	B	1	O	2
35256	Z - A	2	1	2	O	M	1	B	1	O	2
35276	Z - A	2	1	2	O	B	1	B	1	O	2
31191	Z - B	2	4	1	O	F	1	B	3	O	2
31196	Z - B	1	4	1	O	F	1	B	3	O	2
35088	Z - B	1	1	1	O	A	1	B	3	K	2
34618	Z - B	1	4	1	O	-	-	-	1	O	2
31539	Z - B	1	3	1	O	F	1	B	3	O	2
31189	Z - B	2	4	1	O	G	1	B	3	O	2
31190	Z - B	2	4	1	O	E	1	B	3	O	2
31193	Z - B	2	4	1	O	G	1	B	2	O	2
33360	Z - B	1	4	1	O	F	1	B	2	O	2
31512	Z - B	2	3	1	O	G	1	B	3	O	2
31513	Z - B	2	3	1	O	E	1	B	3	O	2
31514	Z - B	2	3	1	O	F	1	B	3	O	2
31516	Z - B	2	3	1	O	G	1	B	2	O	2
33045	Z - B	2	4	1	M	T	4	B	3	O	2
33046	Z - B	2	4	1	M	R	4	B	3	O	2
33047	Z - B	2	4	1	M	S	4	B	3	O	2
33049	Z - B	1	4	1	M	T	4	B	2	O	2
33052	Z - B	1	4	1	M	S	4	B	3	O	2
33113	Z - B	2	3	1	M	T	4	B	3	O	2
33114	Z - B	2	3	1	M	R	4	B	3	O	2
33115	Z - B	2	3	1	M	S	4	B	3	O	2
33117	Z - B	2	3	1	M	T	4	B	2	O	2
33120	Z - B	1	3	1	M	S	4	B	3	O	2
33361	Z - B	1	3	1	O	F	1	B	2	O	2
31192	Z - B	2	4	1	O	J	1	B	3	O	2
31515	Z - B	2	3	1	O	J	1	B	3	O	2
34460	Z - B	2	2	1	O	D	1	B	1	K	2
36626	Z - B	2	4	1	O	S	1	B	3	O	2
36627	Z - B	1	4	1	O	S	1	B	3	O	2
31195	Z - B	2	2	2	O	B	1	B	3	O	2
31197	Z - B	1	2	2	O	B	1	B	3	O	2
31538	Z - B	2	1	2	O	B	1	B	3	O	2
31540	Z - B	1	1	2	O	B	1	B	3	O	2
33051	Z - B	2	2	2	M	M	4	B	3	O	2
33053	Z - B	1	2	2	M	M	4	B	3	O	2
33119	Z - B	2	1	2	M	M	4	B	3	O	2
33121	Z - B	1	1	2	M	M	4	B	3	O	2
31194	Z - B	2	2	2	O	14640	1	B	3	O	2
31517	Z - B	2	1	2	O	14640	1	B	3	O	2
36628	Z - B	1	2	2	O	M	1	B	3	O	2
36661	Z - B	2	2	2	O	M	1	B	3	O	2
31199	Z - C	2	4	1	O	F	1	B	1	O	2
31203	Z - C	1	4	1	O	E	1	B	1	O	2
31204	Z - C	1	4	1	O	F	1	B	1	O	2
35222	Z - C	1	3	1	O	F	1	B	1	O	2
36020	Z - C	2	4	1	O	F	1	B	1	K	2
31198	Z - C	2	4	1	O	G	1	B	1	O	2
31541	Z - C	2	3	1	O	G	1	B	1	O	2
31542	Z - C	2	3	1	O	F	1	B	1	O	2
31546	Z - C	1	3	1	O	E	1	B	1	O	2
31547	Z - C	1	3	1	O	F	1	B	1	O	2
33054	Z - C	2	4	1	M	T	4	B	1	O	2
33055	Z - C	2	4	1	M	S	4	B	1	O	2
33059	Z - C	1	4	1	M	R	4	B	1	O	2
33060	Z - C	1	4	1	M	S	4	B	1	O	2
33122	Z - C	2	3	1	M	T	4	B	1	O	2
33123	Z - C	2	3	1	M	S	4	B	1	O	2
33127	Z - C	1	3	1	M	R	4	B	1	O	2
33128	Z - C	1	3	1	M	S	4	B	1	O	2

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program


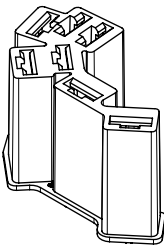
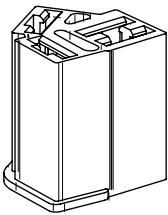
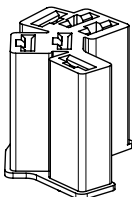
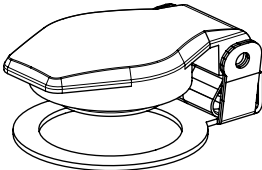
36630	Z - C	1	4	1	O	S	1	B	1	O	2
31202	Z - C	2	2	2	O	B	1	B	1	O	2
34662	Z - C	1	4	2	O	Z	1	-	1	O	2
35091	Z - C	1	4	2	O	F	1	B	1	O	2
31200	Z - C	2	2	2	O	D	1	B	1	O	2
31201	Z - C	2	2	2	O	A	1	B	1	O	2
31543	Z - C	2	1	2	O	D	1	B	1	O	2
31544	Z - C	2	1	2	O	A	1	B	1	O	2
31545	Z - C	2	1	2	O	B	1	B	1	O	2
33056	Z - C	2	2	2	M	P	4	B	1	O	2
33057	Z - C	2	2	2	M	L	4	B	1	O	2
33058	Z - C	2	2	2	M	M	4	B	1	O	2
33124	Z - C	2	1	2	M	P	4	B	1	O	2
33125	Z - C	2	1	2	M	L	4	B	1	O	2
33126	Z - C	2	1	2	M	M	4	B	1	O	2
33698	Z - C	1	-	2	-	-	-	-	1	K	2
36629	Z - C	2	2	2	O	M	1	B	1	O	2
31205	Z - D	2	4	1	O	F	1	B	1	O	2
31210	Z - D	1	4	1	O	G	1	B	1	O	2
31211	Z - D	1	4	1	O	F	1	B	1	O	2
34584	Z - D	2	4	1	O	F	1	B	1	O	1
36144	Z - D	1	4	1	O	S	1	B	1	K	2
33061	Z - D	2	4	1	M	S	4	B	1	O	2
31212	Z - D	1	4	1	O	-	-	-	1	O	2
31206	Z - D	2	4	1	O	J	1	B	1	O	2
31207	Z - D	2	4	1	O	G	1	B	1	O	2
31548	Z - D	2	3	1	O	F	1	B	1	O	2
31549	Z - D	2	3	1	O	J	1	B	1	O	2
31550	Z - D	2	3	1	O	G	1	B	1	O	2
31553	Z - D	1	3	1	O	G	1	B	1	O	2
31554	Z - D	1	3	1	O	F	1	B	1	O	2
33062	Z - D	2	4	1	M	J	1	B	1	O	2
33063	Z - D	2	4	1	M	T	4	B	1	O	2
33066	Z - D	1	4	1	M	T	4	B	1	O	2
33067	Z - D	1	4	1	M	S	4	B	1	O	2
33129	Z - D	2	3	1	M	S	4	B	1	O	2
33130	Z - D	2	3	1	M	J	1	B	1	O	2
33131	Z - D	2	3	1	M	T	4	B	1	O	2
33134	Z - D	1	3	1	M	T	4	B	1	O	2
33135	Z - D	1	3	1	M	S	4	B	1	O	2
31555	Z - D	1	3	1	O	-	-	-	1	O	2
36618	Z - D	2	4	1	O	S	1	B	1	O	2
36631	Z - D	1	4	1	O	S	1	B	1	O	2
36663	Z - D	1	4	1	O	T	1	B	1	O	2
31208	Z - D	2	2	2	O	M	1	B	1	O	2
31214	Z - D	1	2	2	O	B	1	B	1	O	2
33901	Z - D	1	2	2	O	K	1	B	1	O	2
31557	Z - D	1	1	2	O	B	1	B	1	O	2
33070	Z - D	1	2	2	M	M	4	B	1	O	2
36319	Z - D	2	6	2	O	L	1	B	1	K	2
31209	Z - D	2	2	2	O	C	1	B	1	O	2
31213	Z - D	1	2	2	O	D	1	B	1	O	2
31551	Z - D	2	1	2	O	B	1	B	1	O	2
31552	Z - D	2	1	2	O	C	1	B	1	O	2
31556	Z - D	1	1	2	O	D	1	B	1	O	2
33064	Z - D	2	2	2	M	M	4	B	1	O	2
33065	Z - D	2	2	2	M	N	4	B	1	O	2
33069	Z - D	1	2	2	M	P	4	B	1	O	2
33132	Z - D	2	1	2	M	M	4	B	1	O	2
33133	Z - D	2	1	2	M	N	4	B	1	O	2
33137	Z - D	1	1	2	M	P	4	B	1	O	2
33138	Z - D	1	1	2	M	M	4	B	1	O	2
36619	Z - D	1	2	2	O	M	1	B	1	O	2
31216	Z - E	2	4	1	O	F	1	B	1	O	2
31219	Z - E	1	4	1	O	F	1	B	1	O	2
31220	Z - E	1	4	1	O	T	1	B	1	O	2
35395	Z - E	1	-	1	-	-	-	-	1	K	2
31215	Z - E	2	4	1	O	G	1	B	1	O	2
31558	Z - E	2	3	1	O	G	1	B	1	O	2
31559	Z - E	2	3	1	O	F	1	B	1	O	2
31562	Z - E	1	3	1	O	F	1	B	1	O	2
31563	Z - E	1	3	1	O	G	1	B	1	O	2
33071	Z - E	2	4	1	M	T	4	B	1	O	2
33072	Z - E	2	4	1	M	S	4	B	1	O	2
33075	Z - E	1	4	1	M	S	4	B	1	O	2
33076	Z - E	1	4	1	M	T	4	B	1	O	2
33139	Z - E	2	3	1	M	T	4	B	1	O	2
33140	Z - E	2	3	1	M	S	4	B	1	O	2
33143	Z - E	1	3	1	M	S	4	B	1	O	2

LEADING PRODUCT VERSIONS


Versions which are not listed below are also included in our production program

33144	Z-E	1	3	1	M	T	4	B	1	O	2
31564	Z-E	1	3	1	O	G	1	B	1	O	2
33077	Z-E	1	-	1	M	-	-	-	1	O	2
33145	Z-E	1	-	1	M	-	-	-	1	O	2
36632	Z-E	1	4	1	O	S	1	B	1	O	2
31217	Z-E	2	2	2	O	B	1	B	1	O	2
35242	Z-E	1	4	2	O	S	1	B	1	K	2
35490	Z-E	1	4	2	O	S	1	B	1	K	2
35934	Z-E	2	2	2	O	A	1	B	1	O	2
31218	Z-E	2	2	2	O	D	1	B	1	O	2
31560	Z-E	2	1	2	O	B	1	B	1	O	2
31561	Z-E	2	1	2	O	D	1	B	1	O	2
33073	Z-E	2	2	2	M	M	4	B	1	O	2
33074	Z-E	2	2	2	M	P	4	B	1	O	2
33141	Z-E	2	1	2	M	M	4	B	1	O	2
33142	Z-E	2	1	2	M	P	4	B	1	O	2
36046	Z-F	1	-	1	-	-	-	-	1	K	2

ACCESSORIES

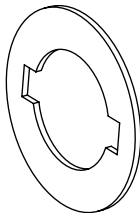
<p>Protective cap with tie</p>  <p>Product Nr : 36167</p>	<p>Connector 7 pole * Only applicable for Z-F and Z-G Electrical Diagrams</p>  <p>Product Nr : 35491</p>	<p>Connector 4 pole</p>  <p>Product Nr : 31617</p>	<p>Connector 6 pole</p>  <p>Product Nr : 31616</p>	<p>Cover</p>  <p>Product Nr : 31447</p>
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SPARE PARTS

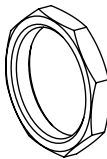


Cap

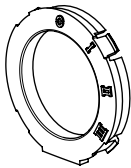
0-I-I	33734
0-I-I-II	33735
0-I-I-II-IV	33738
P-0-I-I	33559
P-0-I-I-II	33736
No number	33672



Spacer
Product Nr : 33674



Nut
Product Nr : 33673



* Sealing Cap

0-I-I	35677
0-I-I-II	35678
0-I-I-II-IV	35679
P-0-I-I	35680
P-0-I-I-II	35681
No number	35694

* For only IP65 Level Switches

Delivery Volume		
Item	Designation	Number
1	Ignition Switch	1
2	Spacer	1
3	Keys	2
4	Cap	1
5	Nut	1

* Delivery Volume may differ according to the selected variant

“STARTER SWITCH”



MAIN PROPERTIES

- Temperature Range: -40°C / + 85°C
- Protection Class (key side): IP 40 / IP 69K
- Protection Class (terminal side): IP 40 or IP 69
- Voltage: 12 V
- Max Current: 50 A



TECHNICAL CHARACTERISTICS

KAT starter switches are designed for 12 V vehicles and industrial machines.

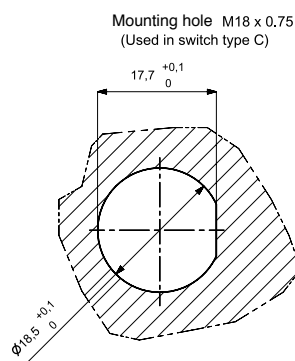
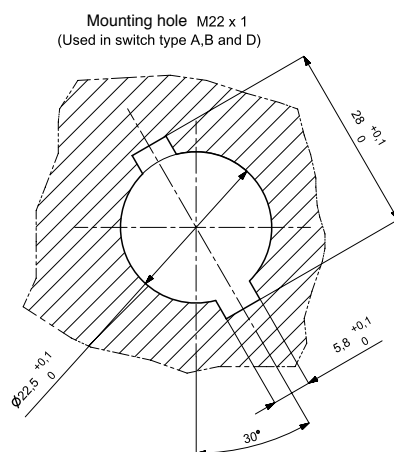
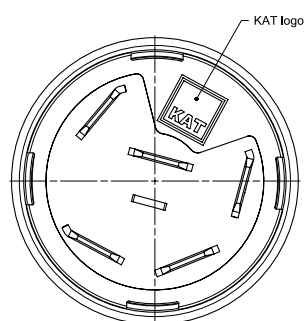
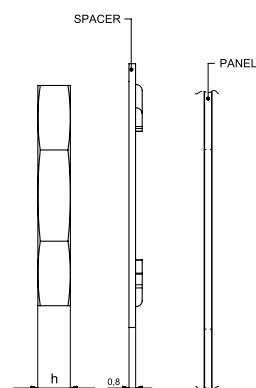
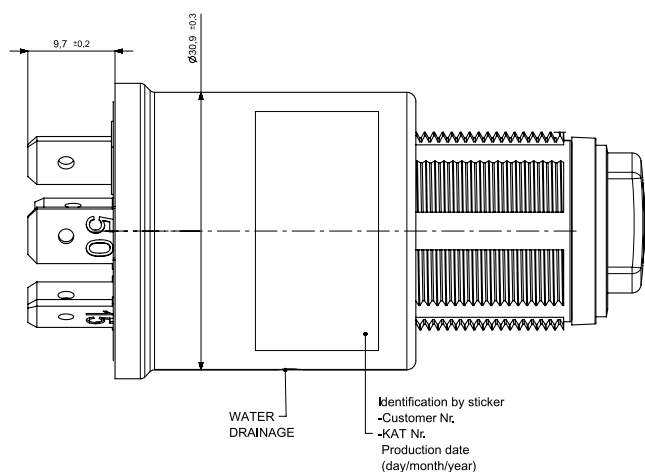
The versatility of the product is reached with the following options:

- Different sealing options: at key side with special lock, at terminal side with o-ring and epoxy resin
- Anti-restart
- Custom logo on key and cover
- Single and different key codes
- Up to 4 switching positions
- Different key colours

The product is supplied with 2 keys.
Connectors are available.

Materials

Housing	: die-cast ZnAl4Cu1
Socket	: PA 6 , glass-fiber-reinforced
Terminals	: CuZn 37 , silver coated
Contact	: CuZn 37 , silver coated
O-Ring	: NBR Rubber
Key	: CuNi alloy



ORDERING SCHEME

Please define your product by selecting the technical features below

1	2	3	4	5	6	7	8	9	10	11	12	13
—	—	—	—	—	—	—	—	—	—	—	—	—

1- Electrical diagrams

2- Switch Type

3- Restart inhibitor

4- Water drainage

5- Terminal Side Protection

6- Plugs Silver Plated

7- Key types

8- Key Color

9- Customer logo on key

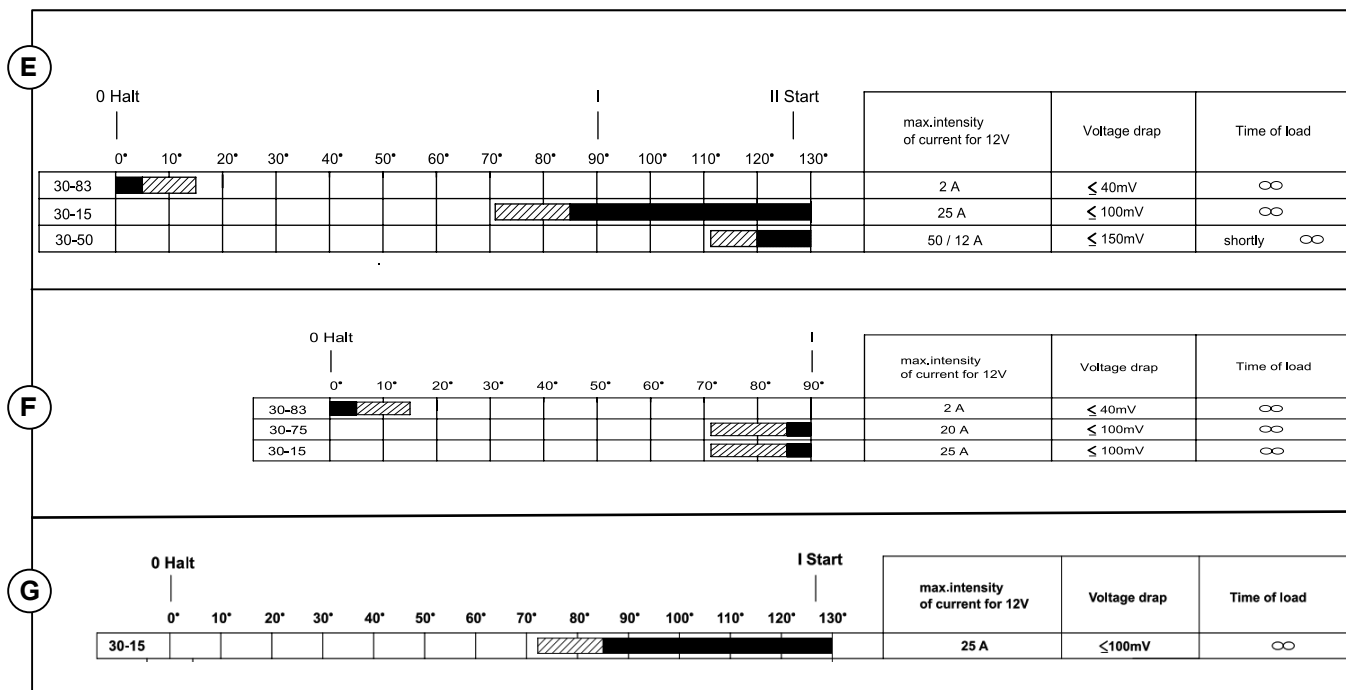
10- Spacer Type

11- Octagonal Nut Type

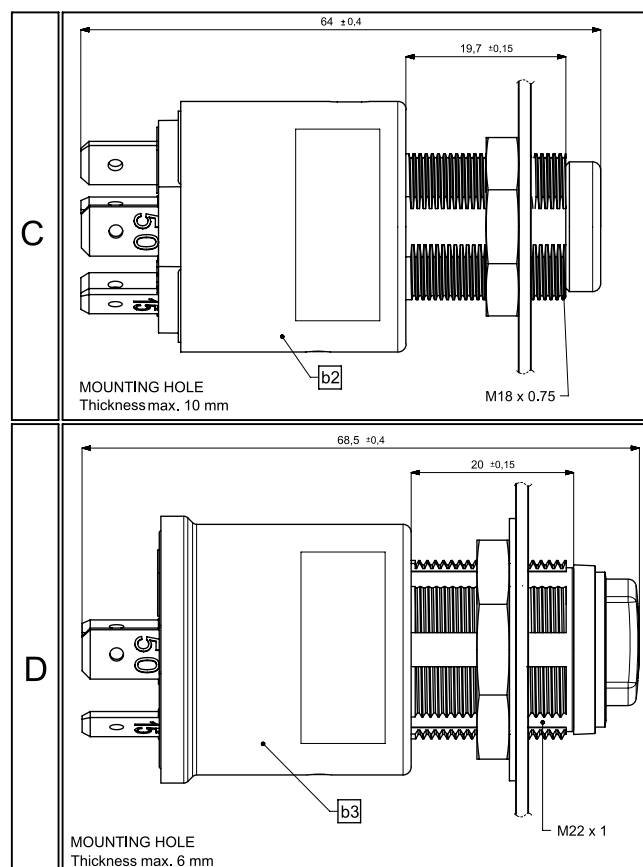
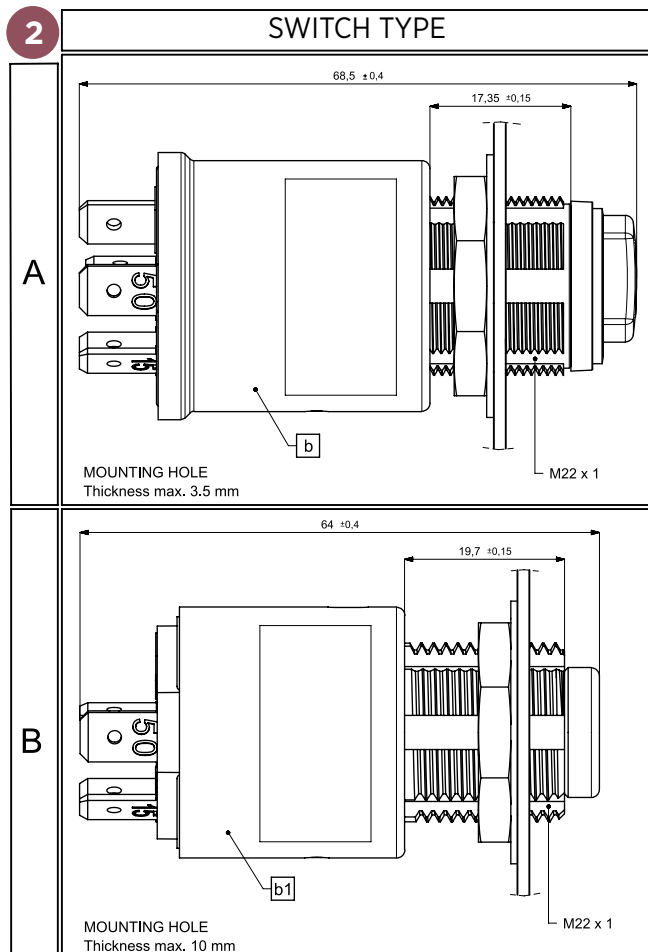
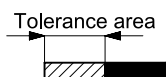
12- Key Side Protection

13- Customer logo on IP69 Cover

1 ELECTRICAL DIAGRAM												
A												
<div> <div>0 Halt</div> <div>0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 100° 110° 120° 130°</div> <div>I Start</div> </div>												
30-15												
30-50												
										max.intensity of current for 12V	Voltage drop	Time of load
										25 A	≤100mV	∞
										50 / 12 A	≤150mV	shortly ∞
B												
<div> <div>0 Halt</div> <div>0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 100° 110° 120° 130°</div> <div>I II Start</div> </div>												
30-83												
30-75												
30-15												
30-50												
										max.intensity of current for 12V	Voltage drop	Time of load
										2 A	≤40mV	∞
										20 A	≤100mV	∞
										25 A	≤100mV	∞
										50 / 12 A	≤150mV	shortly ∞
C												
<div> <div>0 Halt</div> <div>0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 100° 110° 120° 130°</div> <div>R I II Start</div> </div>												
30-75												
30-15												
30-50												
										max.intensity of current for 12V	Voltage drop	Time of load
										20 A	≤100mV	∞
										25 A	≤100mV	∞
										50 / 12 A	≤150mV	shortly ∞
D												
<div> <div>0 Halt</div> <div>0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 100° 110° 120° 130°</div> <div>I II Start</div> </div>												
30-75												
30-15												
30-50												
										max.intensity of current for 12V	Voltage drop	Time of load
										20 A	≤100mV	∞
										25 A	≤100mV	∞
										50 / 12 A	≤150mV	shortly ∞



Connection Terminals	
Nr.	A 6,3 x 0,8 DIN 46244
30	1x
15	1x
50	1x
75	1x
83	1x

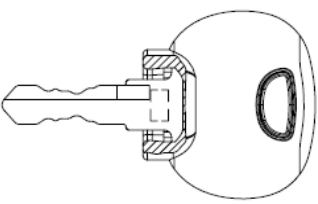
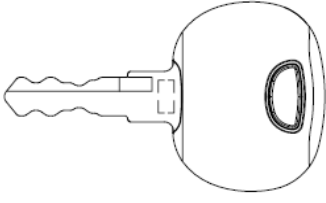
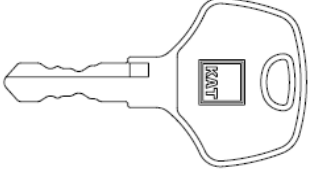
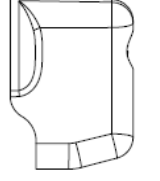
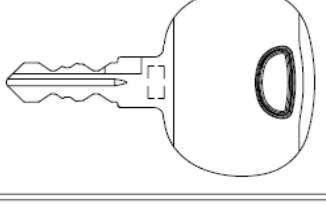


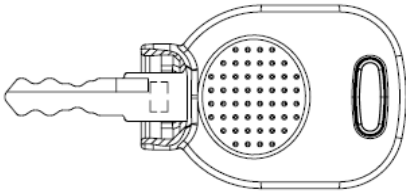
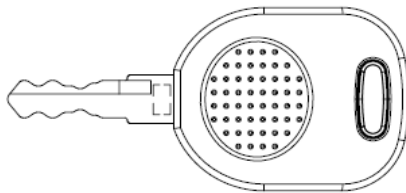
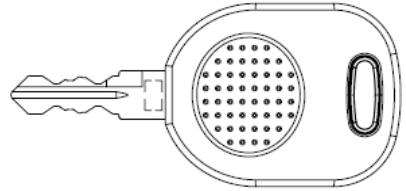
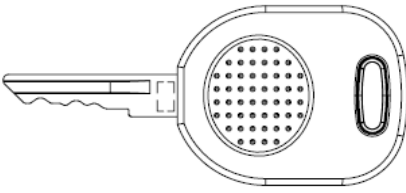
3	RESTART INHIBITOR
1	WITH (except for A Electrical diagram)
2	WITHOUT

4	WATER DRAINAGE
A	WITH
B	WITHOUT

5	TERMINAL SIDE PROTECTION	SWITCH TYPE
A	IP69K (With resin)	A-D
B	IP63	A-D
C	IP40	B-C

6	PLUGS SILVER PLATED
1	WITH
2	WITHOUT

7	KEY TYPES		SWITCH TYPE
1	606		A-D
2	607		
3	608		
4	0-250		
5	602		B-C
6	603		
7	0-250		
8	602		B-C
* 9	001		
10	644		B-C
11	609		
12	610		

13	606		A-D
14	607		
15	608		
16	0-250		
17	602		B-C
18	603		
19	0-250		
20	644		B-C
21	609		
22	610		

*Key type 9 is to be screwed on the ignition switch.

*4,7 types are keyed different

Note: *Locking system available from 0-250

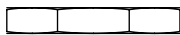

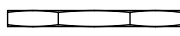
*Locking number to be given separately

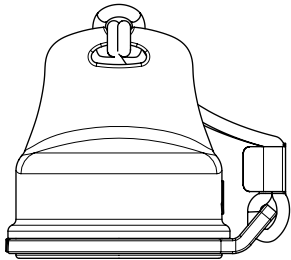
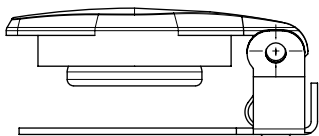
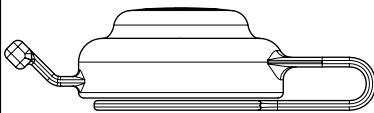
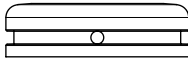
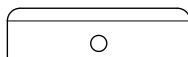
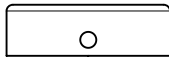
If not mentioned random deliveries will be made

8	KEY COLOR
A	BLACK (Standard)
B	RED
C	BLUE
D	GRAY

9	CUSTOMER LOGO ON KEY
A	WITH
B	WITHOUT

10	SPACER TYPE	SWITCH TYPE
1	Plastic Spacer	A-B-D
2	Metal Spacer	A-B-D
3	No Spacer (for M18)	C

11	OCTAGONAL NUT	SWITCH TYPE
1	 M22x1 (h : 4mm)	A-B-D
2	 M18x0.75 (h : 4mm)	C
3	 M22x1 (h : 2,5mm)	A-B-D

12	KEY SIDE PROTECTION	SWITCH TYPE
1	 IP69K	A-D
2	 IP65	
3	 IP65	
4	 IP63	
5	 IP40 (M22)	B
6	 IP40 (M18)	C

13	CUSTOMER LOGO ON IP 69K COVER
1	WITH
2	WITHOUT

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

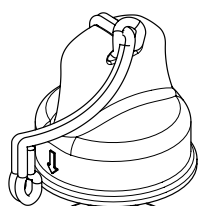
Product Nr.	Technical Characteristics												
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34866	A	A	1	B	B	2	1	A	B	1	1	3	2
33985	A	A	2	A	A	1	2	A	B	1	1	1	2
33983	A	A	2	A	B	1	2	A	B	1	1	2	2
34054	A	A	2	A	B	1	2	A	B	1	1	2	2
33699	A	A	2	B	A	1	1	A	B	1	1	1	2
33729	A	A	2	B	A	1	1	A	B	1	1	2	2
33543	A	A	2	B	A	1	1	A	B	1	1	3	2
34552	A	A	2	B	A	1	2	A	B	1	1	3	2
35209	A	A	2	B	A	1	4	A	B	1	1	3	2
34914	A	A	2	B	B	1	2	A	B	1	1	3	2
34913	A	A	2	B	B	1	14	A	B	1	1	4	2
32063	A	B	2	A	C	1	5	A	B	1	1	5	2
36161	A	B	2	A	C	1	10	A	B	1	1	5	2
34997	A	B	2	A	C	2	5	A	B	1	1	5	2
35561	A	B	2	A	C	2	6	A	B	1	1	5	2
32060	A	B	2	A	C	2	8	-	B	1	1	5	2
36265	A	C	2	A	C	1	10	A	B	3	2	6	2
35083	A	C	2	A	C	2	5	A	B	3	2	6	2
35562	A	C	2	A	C	2	18	A	B	3	2	6	2
35217	A	D	2	B	A	1	2	A	B	1	1	3	2
33986	B	A	1	A	A	1	2	A	B	1	1	1	2
34976	B	A	1	A	A	1	14	A	B	1	1	4	2
33984	B	A	1	A	B	1	14	A	B	1	1	2	2
34602	B	A	1	A	B	2	2	A	B	1	1	5	2
33701	B	A	1	B	A	1	1	A	B	1	1	1	2
33554	B	A	1	B	A	1	1	A	B	1	1	3	2
34890	B	A	1	B	A	1	9	A	B	2	1	4	2
33955	B	A	1	B	A	2	1	A	B	1	1	2	2
33542	B	A	1	B	A	2	1	A	B	1	1	3	2
33717	B	A	1	B	A	2	2	A	B	1	1	3	2
35231	B	A	1	B	A	2	9	B	B	1	1	4	2
35102	B	A	1	B	B	2	2	A	B	1	1	1	2
33702	B	A	2	A	A	2	1	A	B	1	1	1	2
35626	B	A	2	B	A	1	9	A	B	2	1	4	2
35629	B	A	2	B	A	1	9	A	B	2	1	4	2
35422	B	B	1	A	C	1	5	A	B	1	1	5	2
36164	B	B	1	A	C	1	10	A	B	1	1	5	2
34251	B	B	1	A	C	2	5	A	B	1	1	5	2
35339	B	B	1	A	C	2	18	A	B	1	1	5	2
33341	B	B	1	A	C	2	7	A	B	1	1	5	2
31822	B	B	1	A	C	2	8	-	B	1	1	5	2
36165	B	B	1	A	C	2	10	A	B	1	1	5	2
35085	B	B	2	A	C	2	5	A	B	1	1	5	2
32062	B	C	1	A	C	1	5	A	B	3	2	6	2
36166	B	C	1	A	C	1	10	A	B	3	2	6	2
34252	B	C	1	A	C	2	5	A	B	3	2	6	2
35563	B	C	1	A	C	2	6	A	B	3	2	6	2
32059	B	C	1	A	C	2	8	-	B	3	2	6	2
35087	B	C	2	A	C	2		A	B	3	2	6	2
34749	B	D	1	A	A	2	2	A	B	1	3	1	2
36043	B	D	1	A	A	2	2	A	B	2	3	1	2
34663	B	D	1	A	B	1	14	A	B	1	1	4	2
33987	C	A	1	A	A	1	2	A	B	1	1	1	2
33988	C	A	1	A	B	1	2	A	B	1	1	2	2
34938	C	A	1	A	B	2	4	A	B	1	1	4	2

LEADING PRODUCT VERSIONS

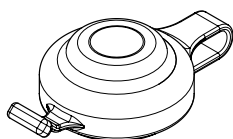
Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics												
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33544	C	A	1	B	A	1	1	A	B	1	1	3	2
33953	C	A	1	B	A	2	1	A	B	1	1	3	2
36152	C	A	1	B	A	2	9	A	B	1	1	4	2
33704	C	A	2	B	A	1	1	A	B	1	1	1	2
33653	C	A	2	B	A	1	1	A	B	1	1	3	2
35421	C	A	2	B	A	1	14	A	B	1	1	3	2
32064	C	B	1	A	C	1	5	A	B	1	1	5	2
36163	C	B	1	A	C	1	10	A	B	1	1	5	2
35282	C	B	1	A	C	2	17	A	B	2	1	-	2
35564	C	B	1	A	C	2	6	A	B	1	1	5	2
32061	C	B	1	A	C	2	8	-	B	1	1	5	2
35084	C	B	2	A	C	2	5	A	B	1	1	5	2
33652	C	B	2	A	C	2	8	-	B	1	1	5	2
33643	C	C	1	A	C	1	5	A	B	3	2	6	2
36162	C	C	1	A	C	1	10	A	B	3	2	6	2
34915	C	C	1	A	C	2	5	A	B	3	2	6	2
35565	C	C	1	A	C	2	6	A	B	3	1	6	2
33644	C	C	1	A	C	2	8	-	B	3	2	6	2
35086	C	C	2	A	C	2	5	A	B	3	2	6	2
35236	D	A	1	A	A	1	2	A	B	1	1	2	2
35235	D	A	1	B	A	1	4	A	B	1	1	3	2
34640	D	A	1	B	A	1	9	A	B	1	1	4	2
33981	D	A	1	B	A	2	1	A	B	1	1	2	2
34809	D	B	1	A	C	1	6	A	B	1	1	5	2
34603	E	A	1	B	B	1	2	A	B	1	1	4	2
34777	E	B	1	A	C	1	6	A	B	1	1	5	2
33982	E	B	1	A	C	2	8	-	B	1	1	5	2
34642	E	D	1	A	B	1	2	A	B	1	1	4	2

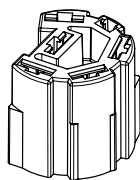
ACCESSORIES



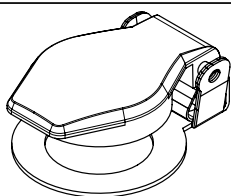
Product Nr : 33989
IP 69K Cover Set



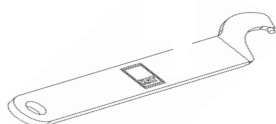
Product Nr : 33707
IP 65 Plastic Cap



Product Nr : 33645
Connector

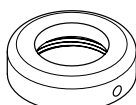


Product Nr : 31446
IP 65 Cover Set

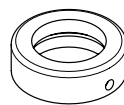


34689
NUT WRENCH

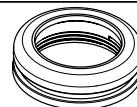
SPARE PARTS



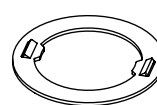
Product Nr : 33720
IP 40 Aluminium
Face Nut M22x1
(Used in switch type B)



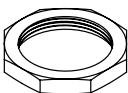
Product Nr : 33721
IP 40 Aluminium
Face Nut M18x0.75
(Used in switch type C)



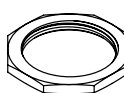
Product Nr : 33727
IP 63 Plastic Face Nut
(Used in switch type A)



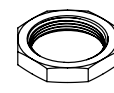
Product Nr : 36359
Metal Spacer



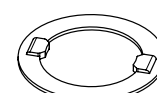
Product Nr : 33708
M22x1 Octagonal Nut
(h : 4mm)



Product Nr : 34420
M22x1 Octagonal Nut
(h : 2,5mm)



Product Nr : 33709
M18x0.75 Octagonal Nut
(h : 4mm)



Product Nr : 33710
Plastic Spacer

Delivery Volume

Item	Designation	Number
1	Ignition Switch	1
2	Spacer	1
3	Keys	2
4	Nut	1

* Delivery Volume may differ according to the selected variant

“UNIVERSAL ROCKER SWITCH”



MAIN PROPERTIES

- Temperature Range: -40°C / +85°C
- Protection Class: IP 52 (Actuator Side), IP 40 (Terminal Side)
- Voltage: 24 V
- Mechanical Life Cycle: 200.000
- Electrical Life Cycle: Power Switch:
Lamp Load: 6 A / 60.000
- Inductive Load: 3 A / 120.000 Cycle
- Electronic Switch: Ohmic Load: 12 mA /
200.000 Cycle Hazard Switch:
Electronic Load: 5 mA / 200.000 Cycle



TECHNICAL CHARACTERISTICS

The rocker switch is designed to operate in heavy-duty vehicles and buses. It is an electromechanical product, which opens-closes electrical circuits by tipping off to one side with the press of a button.

It offers various alternatives to users within the same structure with options such as variable electrical values, button designs, lighting shapes and colors, paint colors, symbols, etc.

The switch has 2 versions such as single pole (1P2T & 1P1T) and double pole (2P2T & 2P1T).

It includes circuits positioned as one or two stage maintained or momentary.

The lighting feature is offered as dependent (LED illuminated with external triggering) or independent (LED illuminated by internal mechanism). The optional LED colors offered for the lighting feature are Amber, Red, Green and Yellow.

The product is mounted on top of the panel. It is mounted easily and quickly to vehicle panels with different thicknesses by its specially designed latches.

Materials

Actuator	: Makrolon 2405 white, black or red laser painted
Housing	: PC
Contacts	: Ag Ni 90 /10
Rocker	: PA 66
Terminals	: CuSn6 , silver coated
Circuit board	: CEM1 / FR4 / 1.2 mm

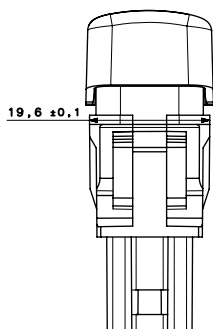
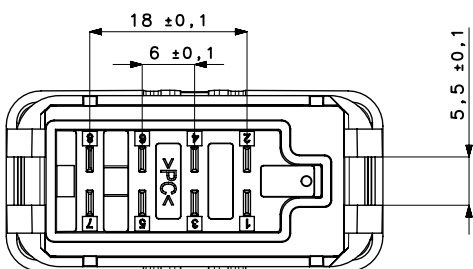
ORDERING SCHEME

Please define your product by selecting the technical features below

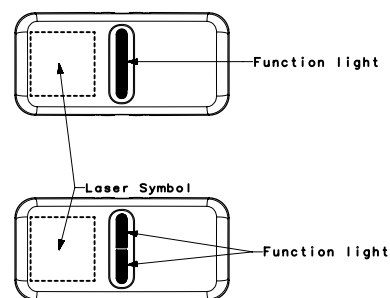
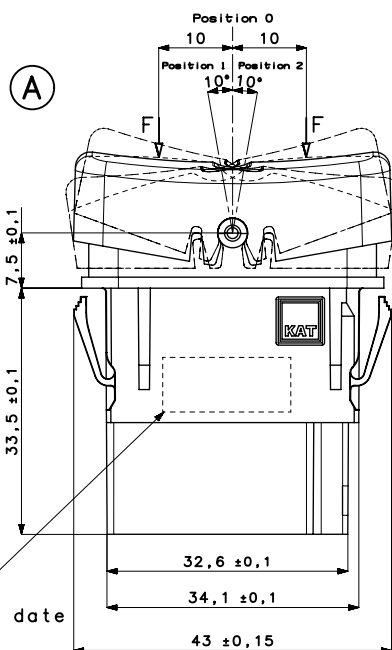
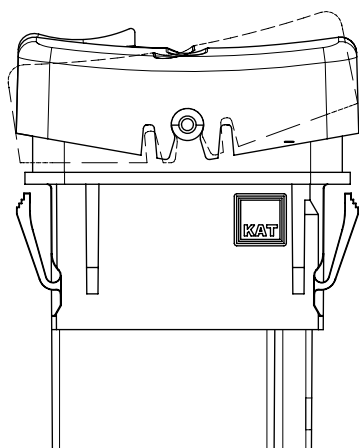
1	2	3	4	5	6
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

- 1- Switch Type
- 2- Mechanical diagram
- 3- Electrical diagram
- 4- Night Illumination LED color
- 5- Function Illumination LED color
- 6- Symbol No

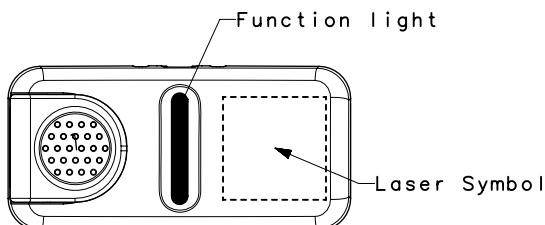
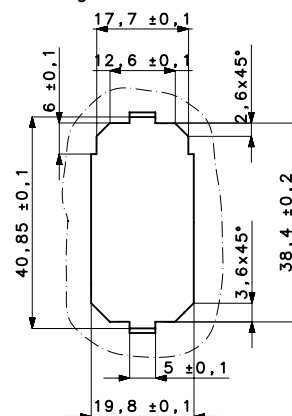
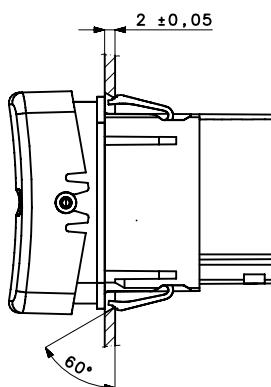
1	SWITCH TYPE
A	Standart switch
B	Locked switch



B



Assembly opening



2

MECHANICAL DIAGRAM (Please see TABLE-1 for Electrical Diagram matches)

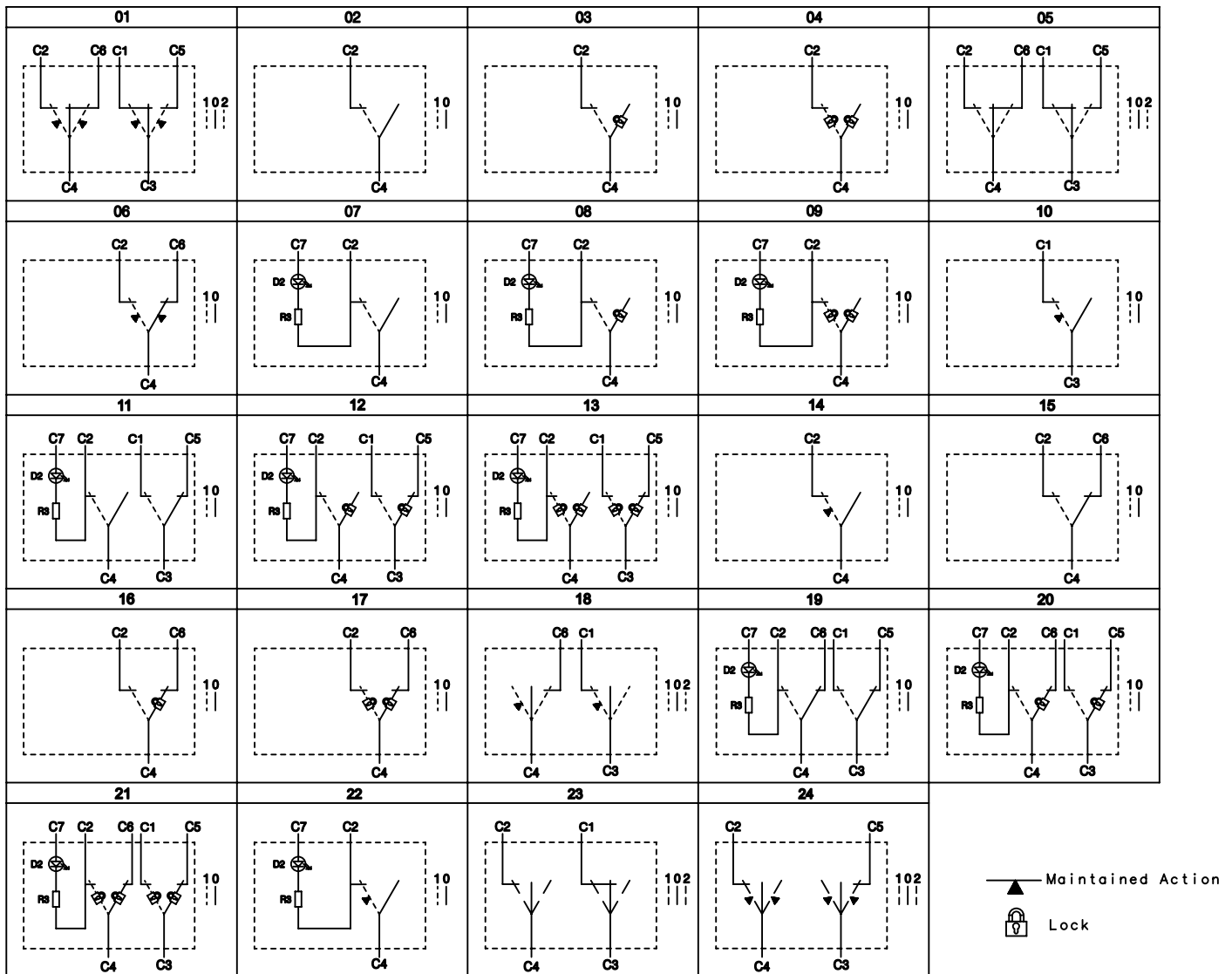
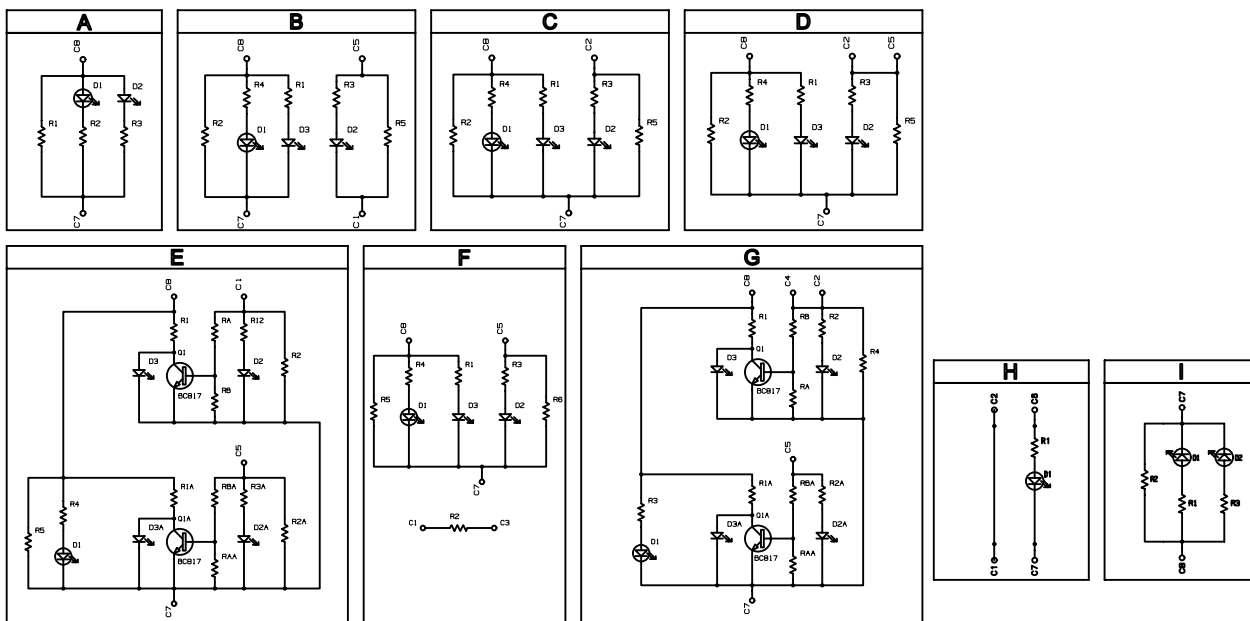


TABLE-1			
		Application	Explanations
1	A	Electronic switching / Load switching	
2	B/E		
3			
4			
5	A	Load switching	
6	B		
7	C/D		
8			
9			
10	D/G		
11	C		
12			
13			
14	A	Electronic switching / Load switching	
15	B/F	Electronic switching / Hazard warning switvhing	For Hazard warning switch "F"
16			Electrical diagram shall be used.
17			
18	A	Electronic switching / Load switching	
19	C	Load switching	
20			
21			
22	C/D		
23	H	Electronic switching	
24	I	Electronic switching	

3 ELECTRICAL DIAGRAM



4 LED TABLE

D1	Night Illumination LED color
A	Amber (Standard)
Y	Yellow
G	Green
R	Red

5 LED TABLE

D2/D2A/ D3/D3A	Function Illumination LED color
A	Amber (Standard)
Y	Yellow
G	Green
R	Red
—	No

6

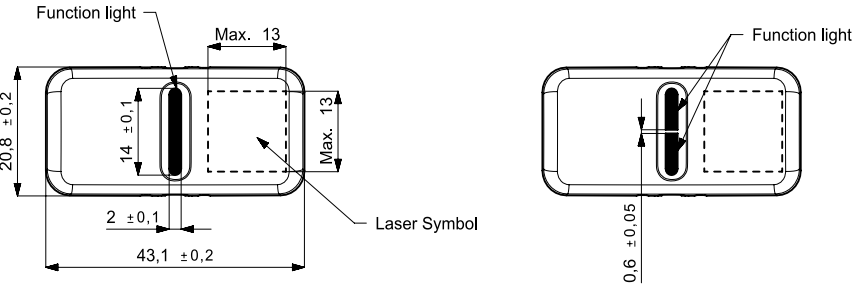
No	SYMBOL DEFINITION
01	Working light
02	Interior heating; heater
03	Interior compartment illumination; interior (dome)
04	Horn
05	Parking aid
06	Windscreen (windshield) rain sensor
07	ASR
08	Headlamp cleaner
09	Combine, grain elevator/auger
10	Cruise control
11	Interior directed illumination (reading/map light)
12	Interior directed illumination (reading/map light)
13	Identification Light, beacon
14	Hill-holding system for truck
15	Roof sign illumination
16	Height control, truck
17	Power take-off (PTO)
18	Axle lifting
19	Convertible top
20	Road vehicle stability-control system
21	Differential lock
22	Rear camera
23	Rear working light
24	Fast
25	Slow
26	High beam; main beam
27	Low beam; dipped beam
28	Parking lights
29	Hazard warning
30	Turn signals

No	SYMBOL DEFINITION
31	Front fog lights
32	Rear fog lights
33	Master lighting switch
34	Windscreen (US: windshield) wiper
35	Windscreen (US: windshield) washer
36	Windscreen (US: windshield) washer and wiper
37	Rear window demisting and defrosting
38	Rear window wiper
39	Rear window washer
40	Rear window washer and wiper
41	Rear window demisting and defrosting
42	Windscreen wiper (US: windshield), intermittent
43	Windscreen washer fluid; windshield washer fluid
44	Rear window wiper, intermittent
45	Rear window washer fluid
46	Side (lateral) window, demisting/defrosting
47	Exterior rear view mirror adjustment, horizontal type
48	Cooling; air conditioning
49	Ventilating fan; air circulating fan
50	Pto on
51	Pto Quick on
52	Night Light
53	Bedside light
54	Door lock
55	Rear load light
56	Differential
57	Engine brake
58	Up-down arrow
59	OK-ESC

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
								OK	
51	52	53	54	55	56	57			
								ESC	
							58	59	

Note:

- * Other standard icons are available.
- Contact your sales representative for a complete listing of standard icons.
- * Hazard warning & function light shall be red.



Connector
Product Nr : 33437

Hole Plug 1
Product Nr : 36186

Hole Plug 2
Product Nr : 35004

Delivery Volume		
Item	Designation	Number
1	Rocker Switch	1
2	Actuator	1

“HEAVY DUTY ROCKER SWITCH,”



MAIN PROPERTIES

- Temperature Range: -40°C / + 85°C
- Insulation Resistance: 50 Megohms
- Initial Contact Resistance: 10 miliohms max./4 VDC
- Electromechanical Life: min. 90.000 - 200.000 cycles, current dependent
- Illumination: All Led's are amber unless otherwise stated.
- Wave length= 610 nm peak, luminous intensity 16-50 mcd.
- Protection Class: IP 66 / IP 68



TECHNICAL CHARACTERISTICS

KAT heavy duty rocker switches are specially designed to operate under severe conditions of heavy-duty, commercial, agriculture and construction vehicles and 100% exchangeable to products which are on the market for years- but semi automatic produced with latest technologies and under statistical process controll according ISO TS 16949. In the most known forklifts, construction machines and cranes you find the KAT heavy duty rocker switches. We offer complete range of variants, frames ,miscellaneous accessories and product customization like individual rocker design, rocker colour, LED colour, etc.

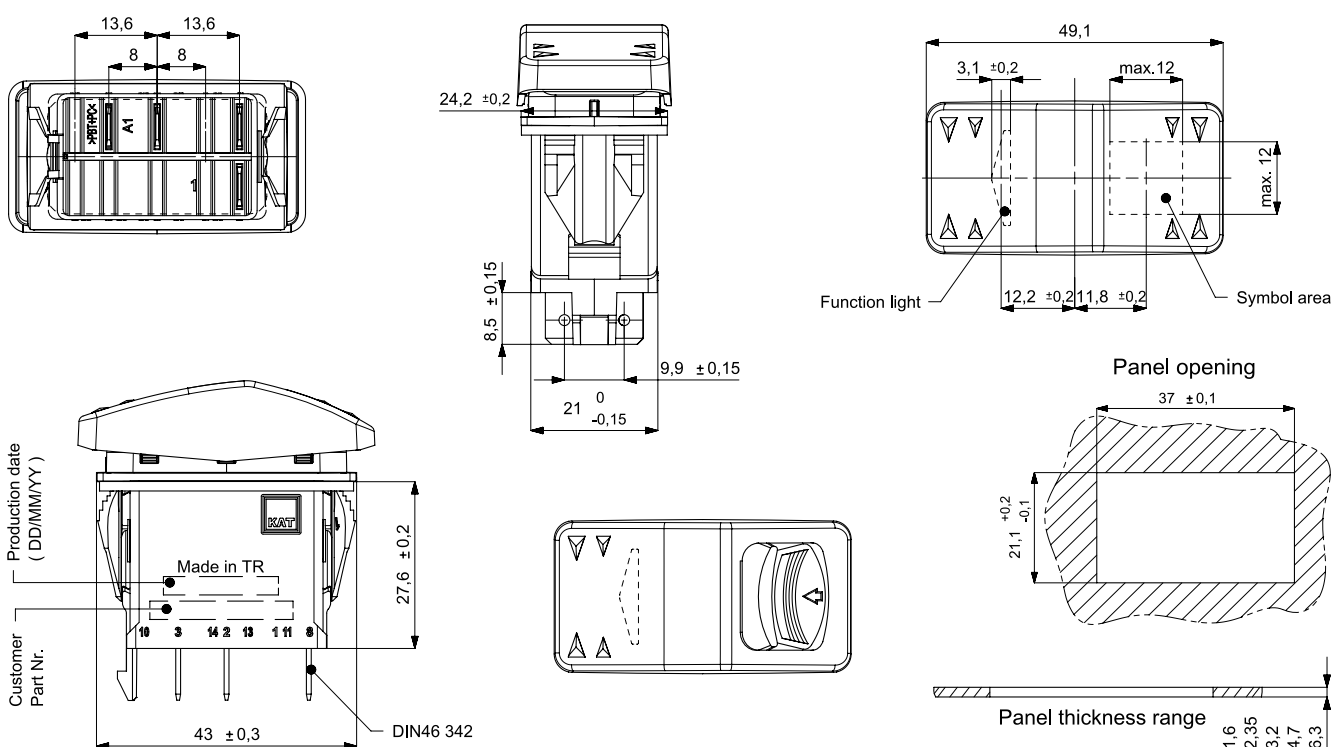
Protection class is IP 66 / IP 68, and it is offered with a gasket that allows the sealing of the panel. With these features, it is durable against dust, prolonged spraying water and underwater pressure (up to 1 m). It adapts to all kinds of panels with its compact structure and provides gain in panels with limited space.

The switch has versions such as single pole (1P2T & 1P1T) and double pole (2P2T & 2P1T). It includes circuits positioned as two or three stage maintained or momentary.

The lighting feature is offered as dependent (LED illuminated with external triggering) or independent (LED illuminated by internal mechanism). The optional LED colors offered for the lighting feature are Amber, Red, Green, Yellow, Blue and White.

The product is mounted on top of the panel. It is mounted easily and quickly to vehicle panel or frames offered as accessory with its specially designed latches (changeable). And again, it is dismantled with the removal apparatus offered as accessory. With these features it allows easy assembly (mounting) and removal (dismounting) for the user.

The products offer various alternatives with options such as variable electrical values, button designs and shapes, lighting shapes and colors, paint colors, symbols, etc. The products are durable against vibration, mechanical and thermal shock, moisture and saline environments.



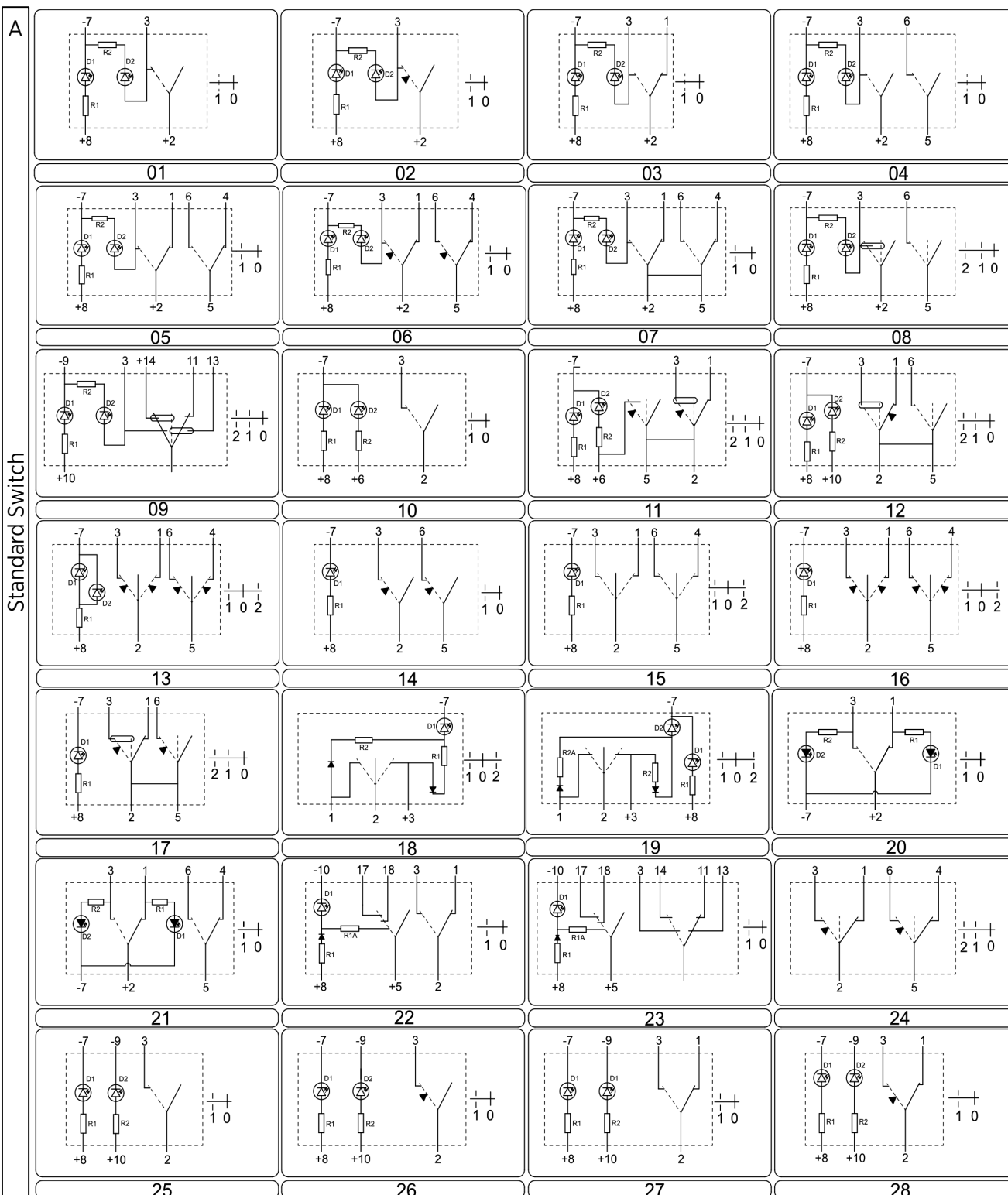
ORDERING SCHEME

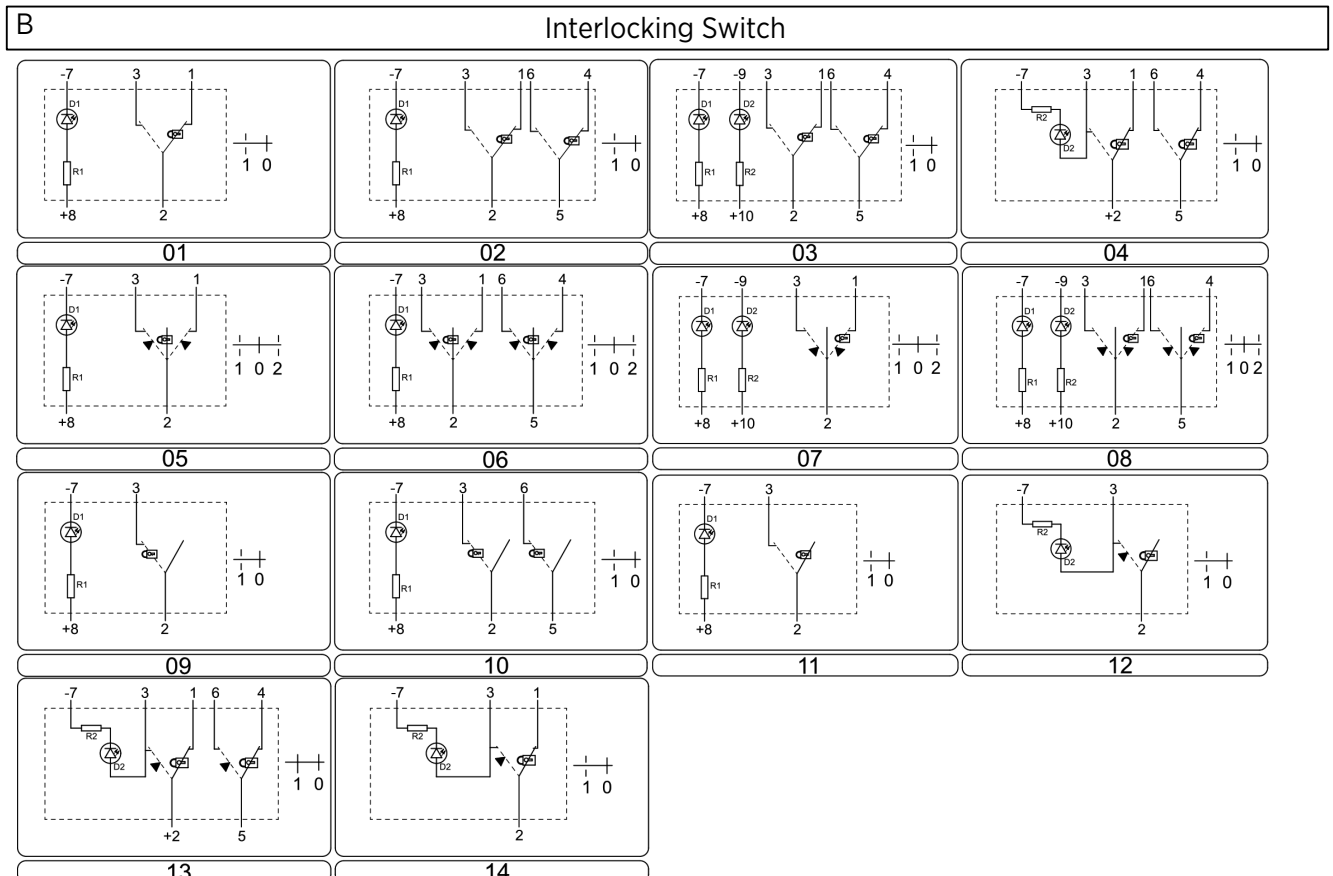
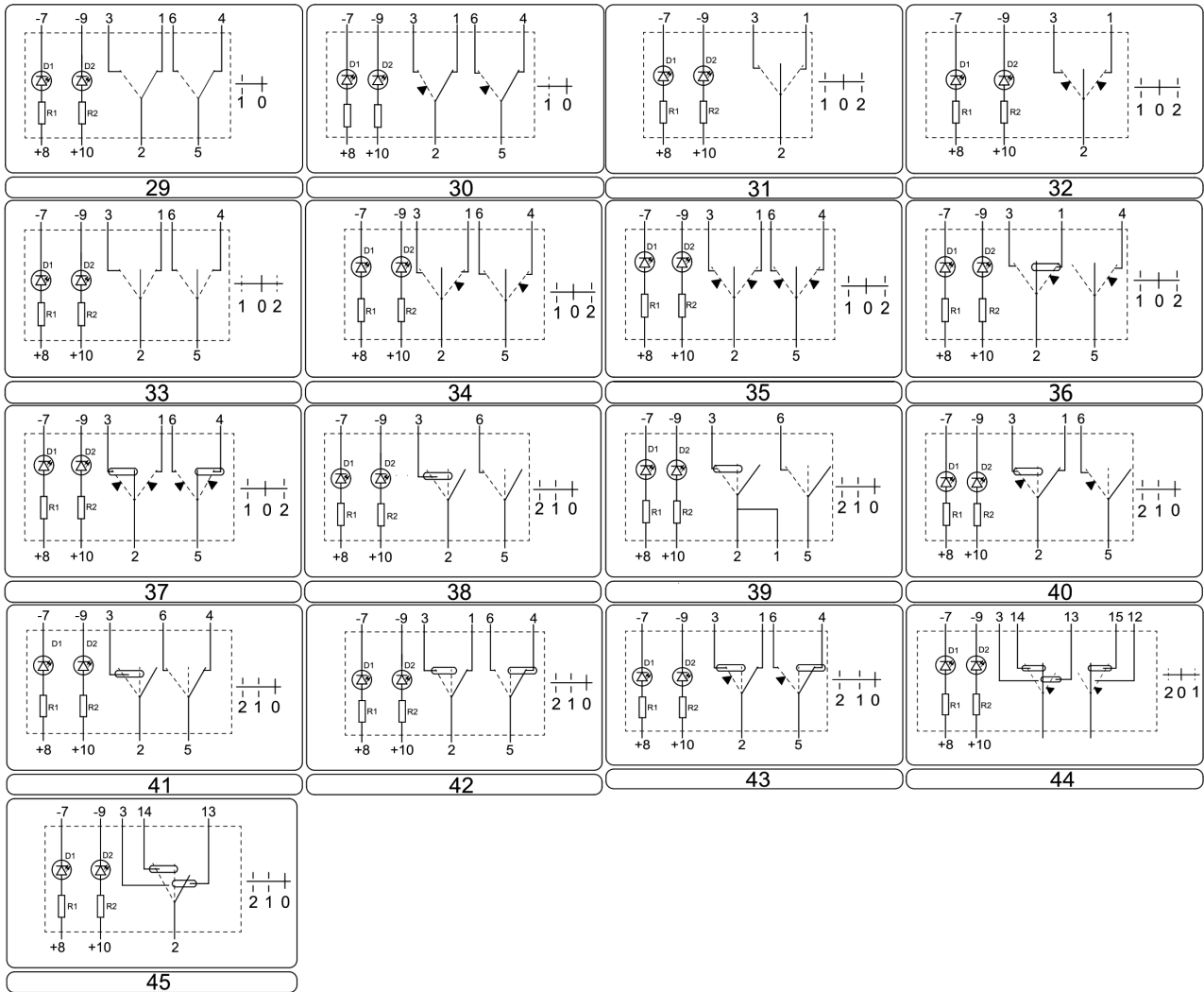
Please define your product by selecting the technical features below

1	2	3	4	5	6	7	8	9
_____	_____	_____	_____	_____	_____	_____	_____	_____

- 1- Circuit diagram
- 2- Symbol No
- 3- Assembly direction of Switch to the Customer Counter Part
- 4- Night Illumination LED COLOR TABLE
- 5- Function Illumination LED COLOR TABLE
- 6- Actuator Color
- 7- Actuator Paint Color
- 8- Voltage Rating
- 9- Actuator Lock Color

1 MECHANICAL AND ELECTRICAL DIAGRAM





A

Single Symbol

Special Request													
001	002	003	004	005	006	007	008	009	010	011	012	013	014
015	016	017	018	019	020	021	022	023	024	025	026	027	028
029	030	031	032	033	034	035	036	037	038	039	040	041	042
043	044	045	046	047	048	049	050	051	052	053	054	055	056
057	058	059	060	061	062	063	064	065	066	067	068	069	070
		Mode											
071	072	073	074	075	076	077	078	079	080	081	082	083	084
085	086	087	088	089	090	091	092	093	094	095	096	097	098
099	100	101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124	125	126
127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154

B

Double Symbol

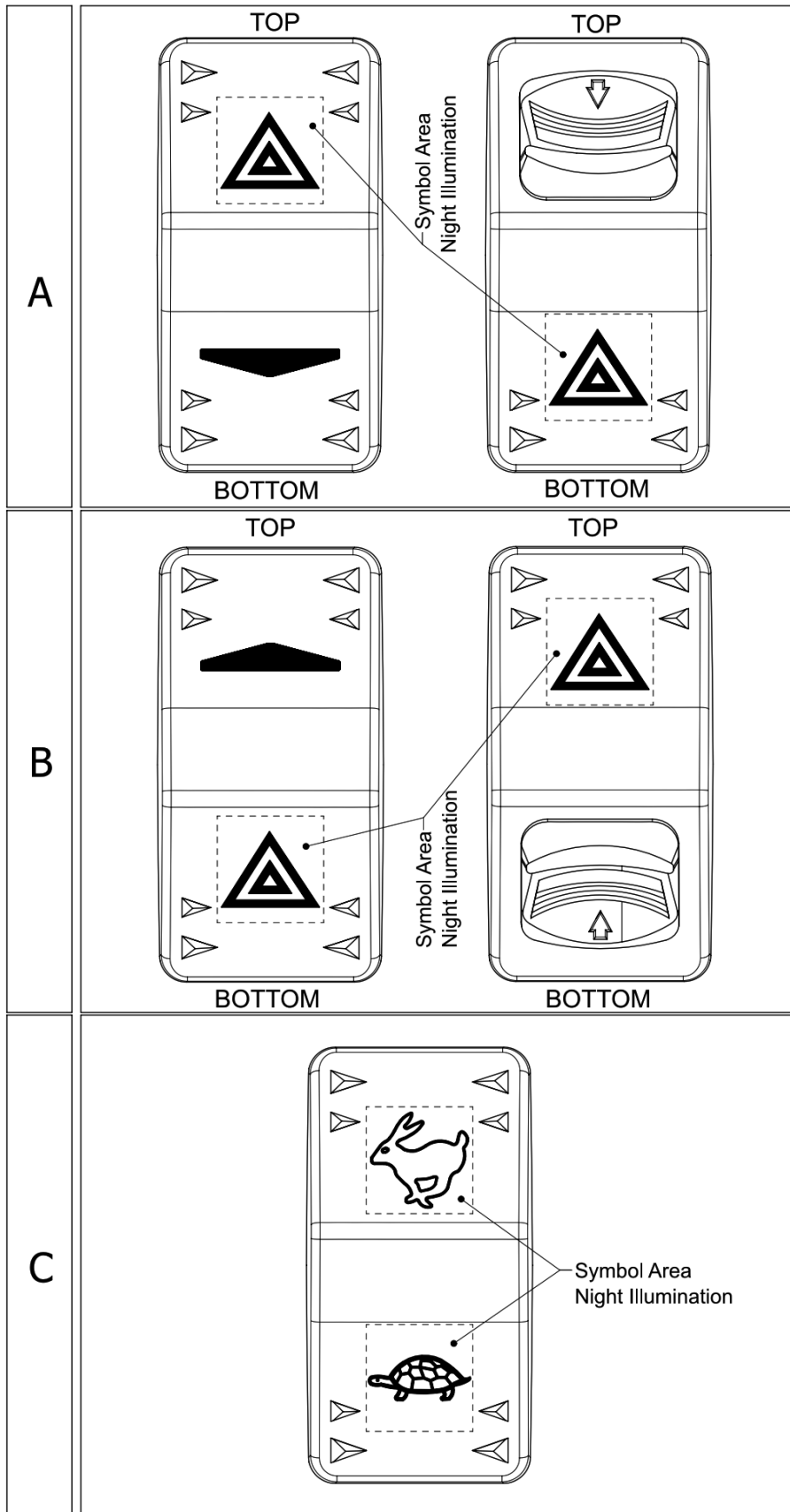
Special Request													
001	002	003	004	005	006	007	008	009	010	011	012	013	014
015	016	017	018	019	020	021	022	023	024	025	026	027	028
029	030	031	032	033	034	035	036	037	038	039	040	041	042

* Both symbols are same color

C

Without Symbol

Symbol Area



4	(D1) NIGHT ILLUMINATION LED COLOR TABLE
A	Amber (Standard)
Y	Yellow
G	Green
R	Red
W	White
B	Blue
-	NO LED (1)

5	(D2) FUNCTION ILLUMINATION LED COLOR TABLE
A	Amber (Standard)
Y	Yellow
G	Green
R	Red
W	White
B	Blue
-	NO LED (1)

6	ACTUATOR COLOR
1	White
2	Red
3	Gray

7	ACTUATOR PAINT COLOR	COLOR INFORMATION
1	Black (Standard)	NWC (Supply of paint):LACK000194.01 Graphit 85 Paint thickness: 30 - 33 µm
2	Red	NWC (Paint supplier):LACK000214-1K Paint thickness: 23-28 µm
3	Yellow	PETER LACKE : PLTR4910 Paint thickness: 22-28 µm

8	VOLTAGE RATING
A	12V
B	24V

9	ACTUATOR LOCK COLOR
A	Black
B	Red
C	Yellow
D	NO Actuator Lock

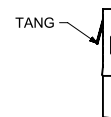
D1 LED :Night illumination
D2 LED :Function illumination

 Maintained Action

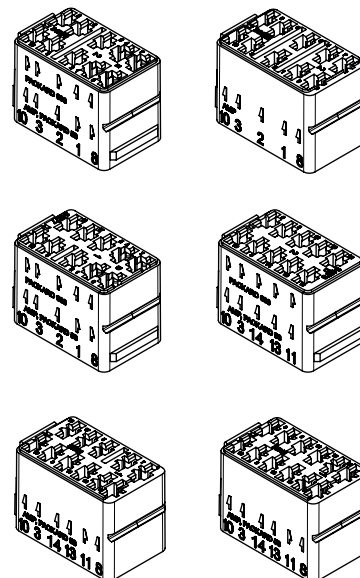
 Lock

ACCESSORIES

<p>Connector 1 Product Nr : 34939</p>	<p>Connector 1 AMP Product Nr : 36130</p>	<p>Connector 2 Product Nr : 34940</p>
<p>Connector 3 Product Nr : 34941</p>	<p>Connector 4 Product Nr : 35611</p>	<p>Connector 5 Product Nr : 35621</p>



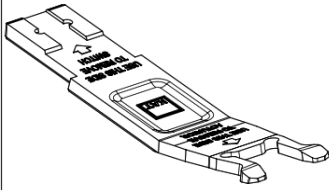
TANG SYMBOL= SHOWS ORIENTATIONS OF TANG IN SLOT
SYMBOLS



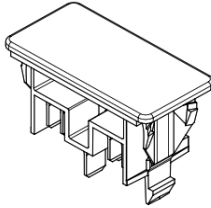
95230 Connectors

Designation	Switch Types
Connector 1	Interlocking Switch : 1,2,3,4,5,6,7,8,9,10.
Connector 1 AMP	Standard Switch : 1,2,3,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,35,36,37,38,40,41,42,43,44,45,46.
Connector 2	Standard Switch : 5
Connector 3	Standard Switch : 4
Connector 4	Standard Switch : 34
Connector 5	Standard Switch : 39

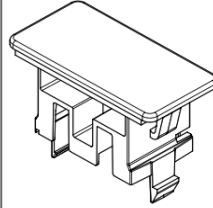
ACCESSORIES



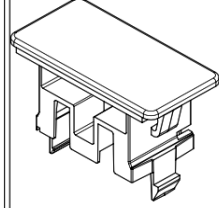
ACTUATOR AND SWITCH REMOVAL TOOL
Product Nr : 34280
For technical details ; please, refer to drawing 95200300008 (95092)



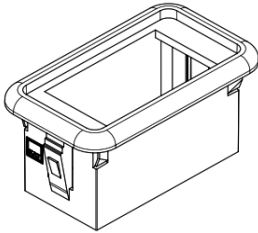
BLIND COVER
Product Nr : 302200300013 (34076)
For technical details ;
please, refer to drawing 95200300008 (95092)



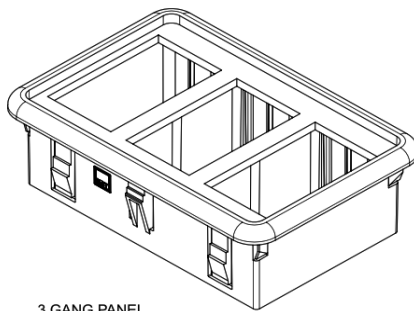
BLIND COVER V2
Product Nr : 302200300107 (35441)
For technical details ;
please, refer to drawing 95200300008 (95092)



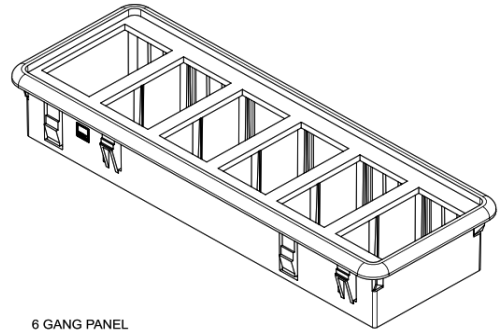
BLIND COVER V3
Product Nr : 35714
For technical details ;
please, refer to drawing 95200300008 (95092)



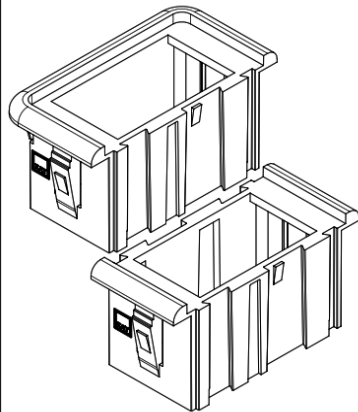
SINGLE FRAM
Product Nr : 302200300279 (36882)
For technical details ;
Please, refer to drawing 95200300009 (95101)



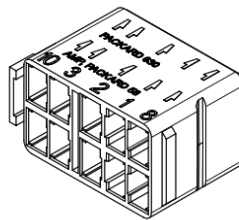
3 GANG PANEL
Product Nr : 302200300015 (34080)
For technical details ;
Please, refer to drawing 95200300009 (95101)



6 GANG PANEL
Product Nr : 302200300016 (34081)
For technical details ;
Please, refer to drawing 95200300009 (95101)

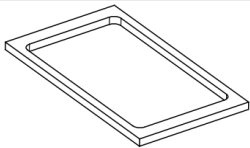


MODULAR PANEL
For technical details ;
please, refer to drawing 95200300011 (95103)

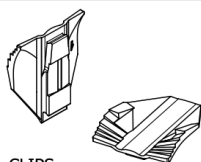


CONNECTOR
For technical details ;
Please, refer to drawing 95200300018 (95230)

SPARE PARTS



GASKET
Product Nr : 302200300033 (34285)
For technical details ;
please, refer to drawing 95200300008 (95092)



CLIPS
Product Nr : 34284
For technical details ;
please, refer to drawing 95200300008 (95092)

Delivery Volume

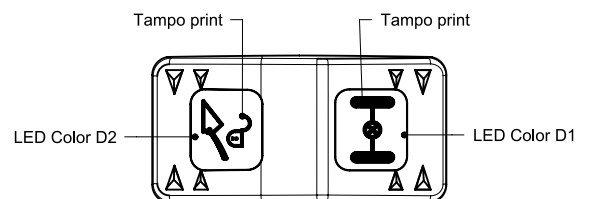
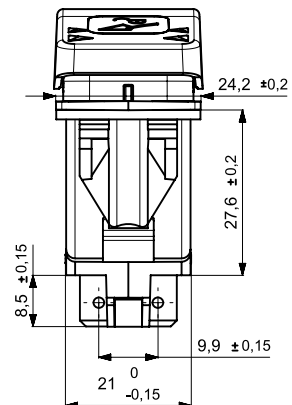
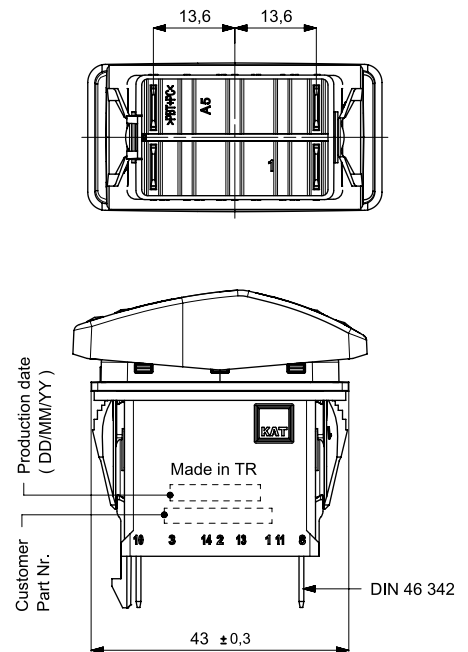
Item	Designation	Number
1	Rocker Switch	1
2	Actuator	1

“INDICATOR LAMP,”



To complete the Heavy Duty Rocker Switch product line, KAT has designed an indicator lamp with same dimensions and same appearance. These indicator lamps can be used in a row together with the switches and give a unique look to the vehicle dash panel.

Different symbols and colours are available.

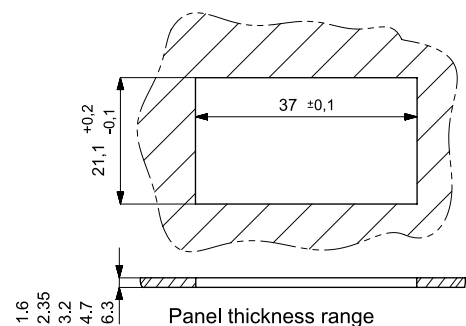


MAIN PROPERTIES

- Insulation Resistance: 50 Megohms
- Actuator side: IP68 (With inserted actuator)
- Terminal side: IP66 (With inserted actuator)
- Operating Temperature: -40°C to +85°C



Panel opening



ORDERING SCHEME

Please define your product by selecting the technical features below

1

2

3

4

5

- 1- Electrical diagram
- 2- (D1) LED Color Table
- 3- (D2) LED Color Table
- 4- Voltage Rating
- 5- Symbol No

1

ELECTRICAL DIAGRAM

D1

7

8

R1

1

D2

9

10

R2

2

D1

7

8

R1

D2

9

10

R2

3

4

VOLTAGE RATING

A

12V

B

24V

5

SYMBOL NO

Single Symbol

A

1

2

3

4

5

6

7

8

Double Symbol

B

1

2

3

4

5

6

7

8

9

ACCESSORIES

Hole Plug

Product Nr : 34076

Actuator and Switch Removal Tool

Product Nr : 34280

Connector

For technical details :
Please, refer to drawing 95230.

Product Nr : 34082

Modular Panel

Product Nr : 34083

3 Gang Panel

Product Nr : 34080

6 Gang Panel

Product Nr : 34081

SPARE PARTS

Gasket

Product Nr : 34285

Clips

Product Nr : 34284

82

“IMMOBILISER PRODUCT LINE,,



“IMMOBILISER UNIVERSAL”



MAIN PROPERTIES

a) Electrical data

- Voltage Range: 7,5V - 32V
- Nominal Voltage: 24 V/ 12 V
- Power Consumption Relay Open: typically 50mA
- Power Consumption Relay Closed: typically 800mA
- Stand-by Current (operation clamp 30): $\sim 30 \mu\text{A}$

b) Relay outputs

- Maximum Switching Voltage: 27V
- Maximum Switching Current: 15A
- Continuous Current (Tu 23°C): 10A
- Voltage Drop (10A): typically 50mV

c) RF module

- Transmission Frequency: typically 134.2 kHz
- Coding Scheme: FSK
- Range: approx. 10cm



TECHNICAL CHARACTERISTICS

Universal Version

The system consist of a mechanical locking system and an independently functioning, electronically coded, immobiliser. The mechanical locking system is a starting switch made by the KAT Company. This switches clamp 15/54 is switched on, the key is mechanically locked and can not be removed.

When activated, the electronically coded immobiliser disconnects 3 operating-relevant control devices: for example the starter the fuel pump and the brake valve. The disconnection takes place potential-free via 3 independent power relays.

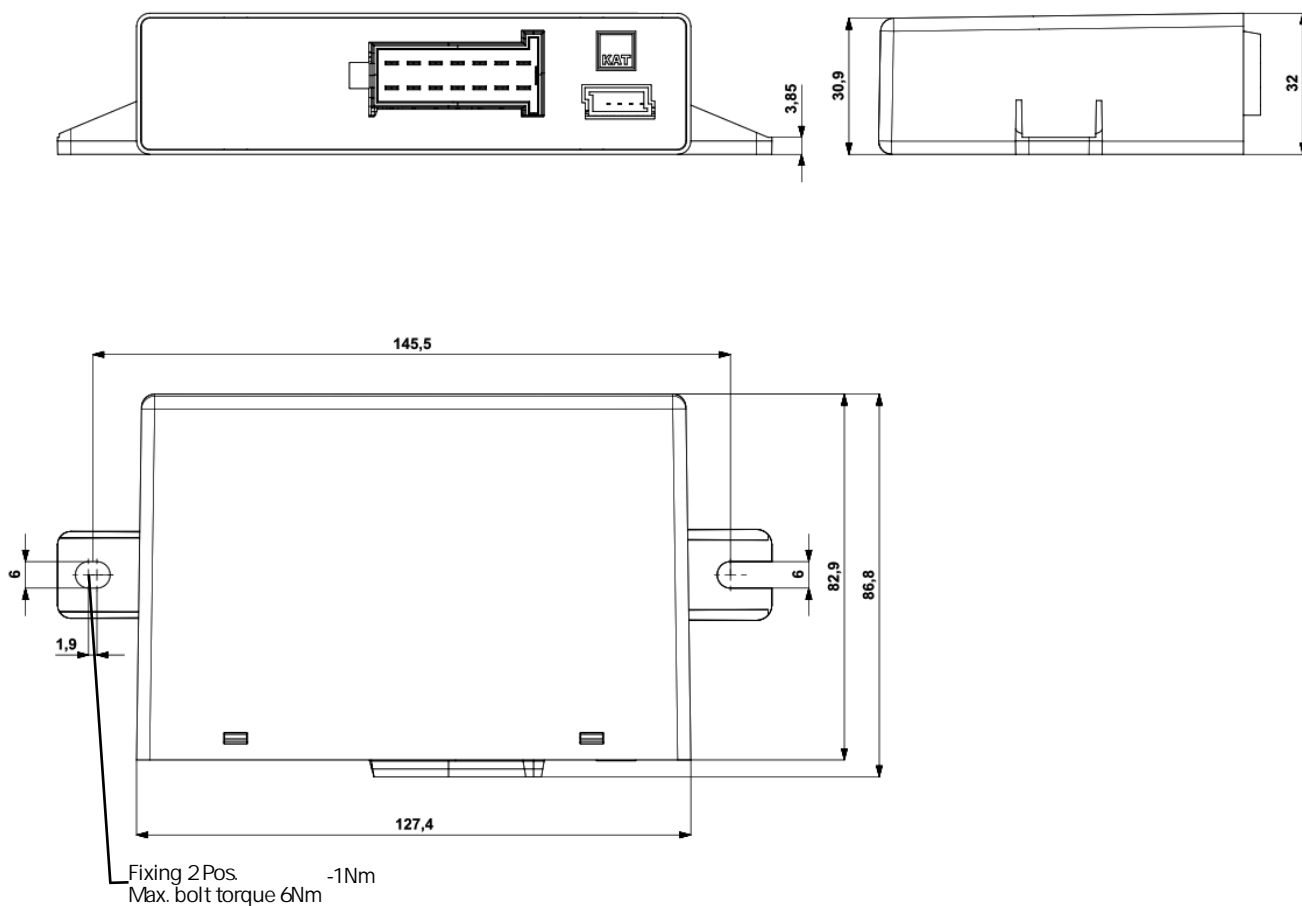
The immobiliser control electronic is based on microprocessor technology. The electronic key is based on proximity transponder technology and is securely integrated into the key handle of the starting switch.

Antenna is installed below dashboard which energises the transponder, causing it on transmit a code back to the antenna using a charge/response mechanism. This response code is red by the ECU and disarms the immobiliser circuits if valid. Also top mount antenna is available in standart production. Immobiliser ECU controls six electronic outputs that are isolated when the immobiliser is armed and able to send specific CAN messages to block other system ECU's. The current is limited with 15A due to the limitations of the connector.

Designation	Material	Color	Weight (g)
Housing	PA66 GF30	Black	85,4
Cover 14 pin			6,7

PANEL OPENING	
BELOW DASHBOARD FOR ANTENNA TYPES 1&2	ABOVE DASHBOARD FOR ANTENNA TYPES 3,4&5
<p>33,5 $\begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix}$</p> <p>26,5 $\begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$</p> <p>7,5 $\begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$</p> <p>26,5 $\begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$</p> <p>panel thickness is max. 3 mm</p>	<p>9,41 8 R10 R23,75 R10 8 R1,3 26,5 33,4 34,2 78° 7,4</p>

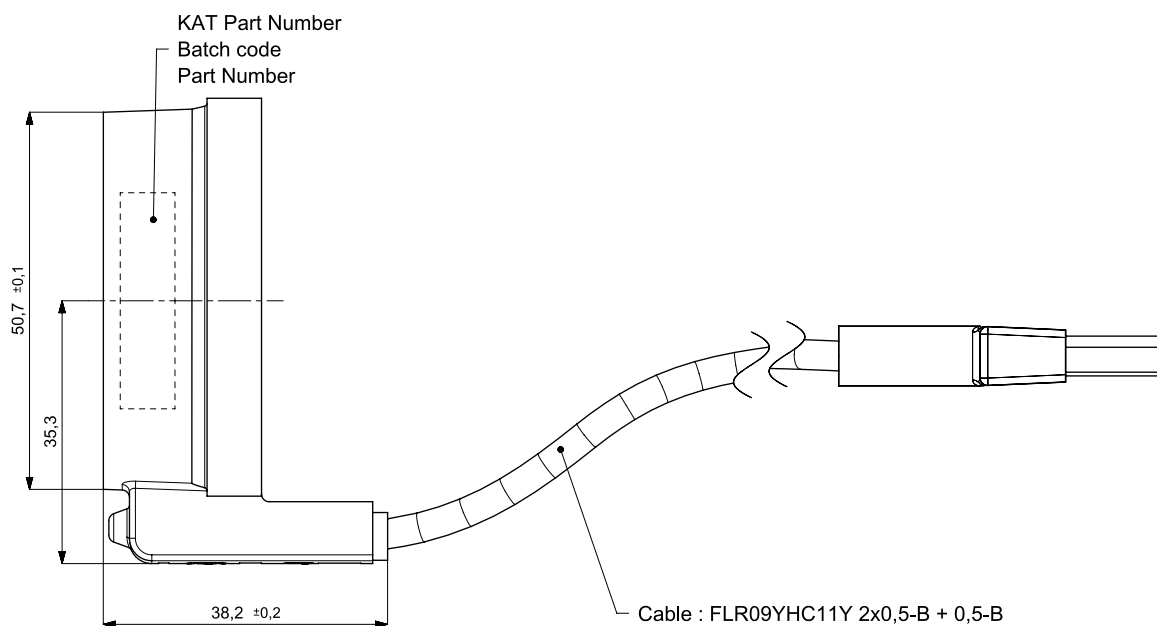
HOUSING MEASUREMENTS



IMPORTANT REMARKS

- * KAT immobiliser system is approved by the German Federal Motor Transport Authority
Date and nr of approval certificate are 11.10.2021 and E24 10R-06 3588
- * The standard cable type and length is shown on the drawing unless otherwise requested by the customer.
- * KAT Immobiliser will only be activated by KAT Ignition Switch. Immobiliser keys are standardly produced in blue and master keys in red colour.

ANTENNA MEASUREMENTS

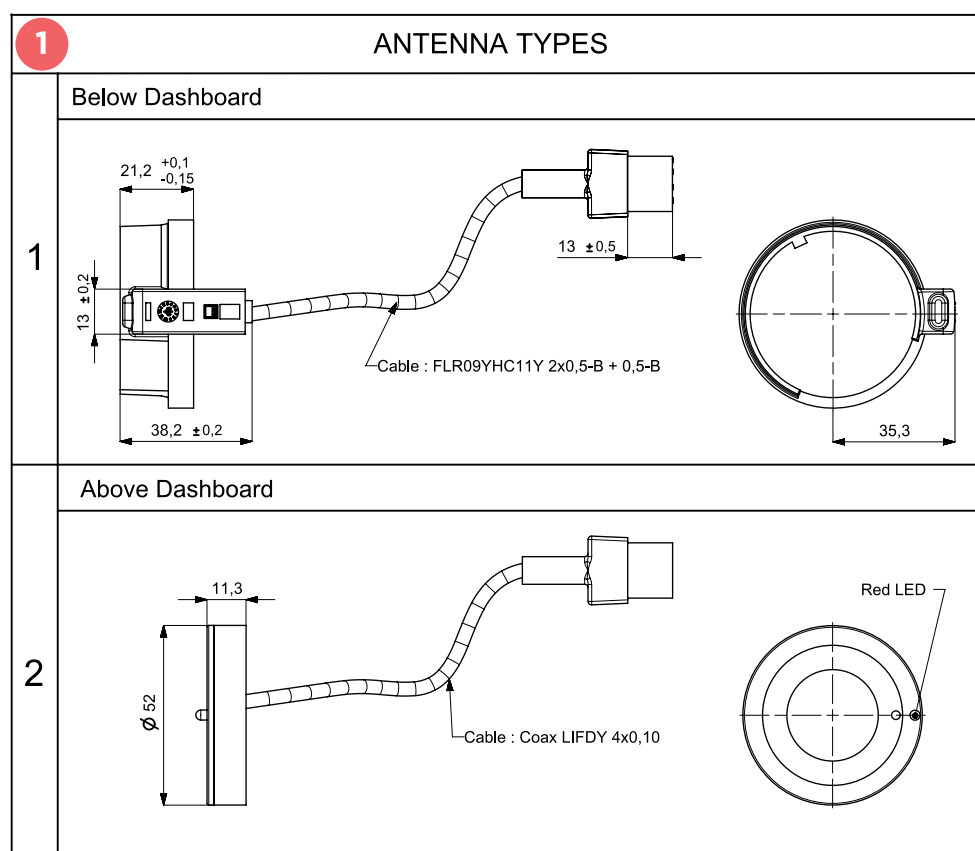


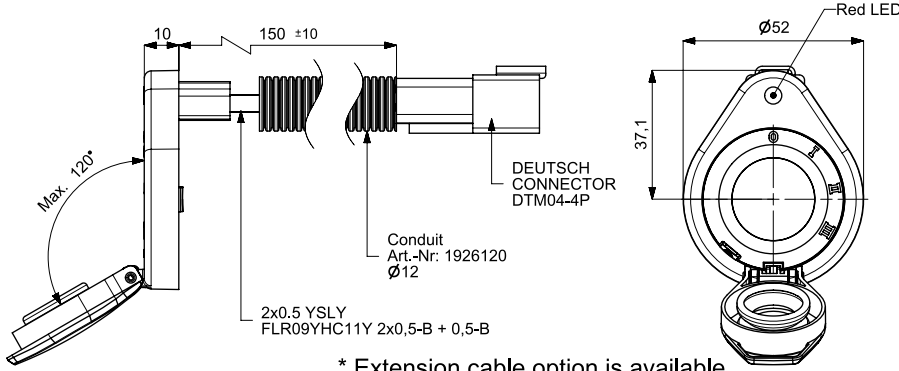
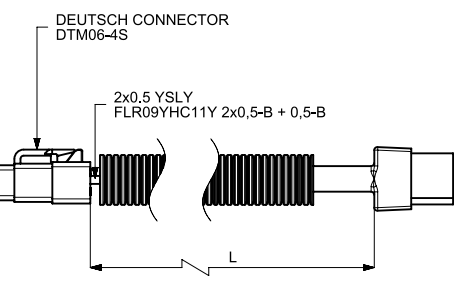
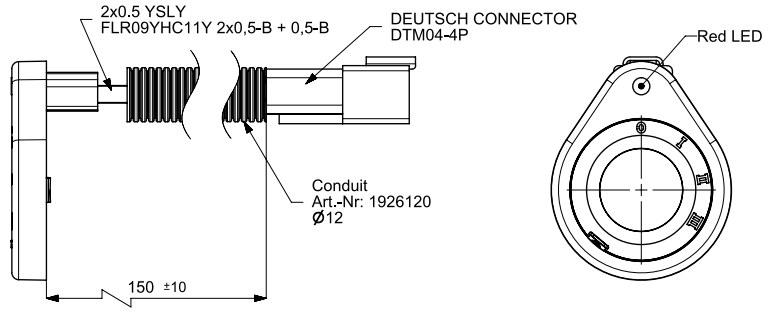
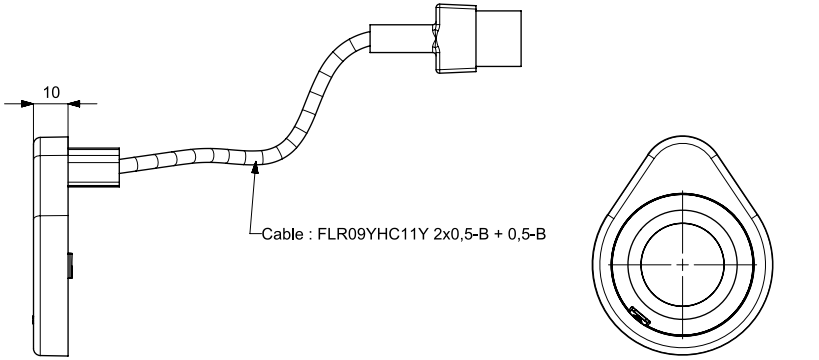
ORDERING SCHEME

Please define your product by selecting the technical features below

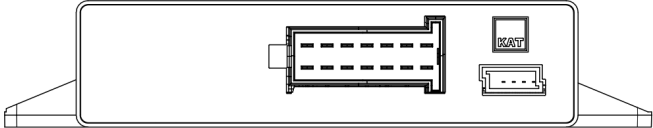
1	2	3	4	5
—	—	—	—	—

- 1-** Antenna Types
- 2-** Types of electronic control unit
- 3-** Cable length
- 4-** Key Types
- 5-** Customer logo on key



	Above Dashboard With Cap	Extension Cable
3	 <p>* Extension cable option is available</p>	<p>Extension Cable for antenna types 3 and 4</p>  <p>See table 3 for "L" length options</p>
4	<p>Above Dashboard Without Cap</p>  <p>* Extension cable option is available</p>	
5	<p>Above Dashboard Without Cap and LED</p> 	
6	No ANTENNA	

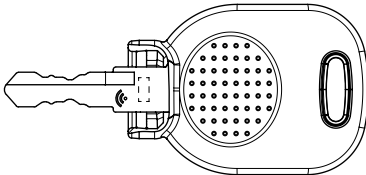
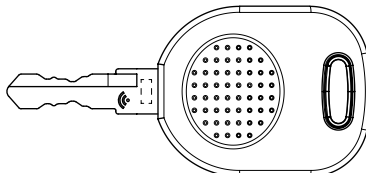
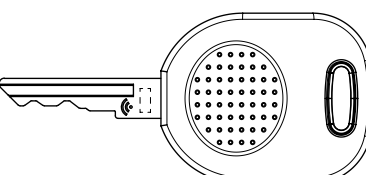
* For technical details refer to;
 (Antenna type-1) 95200100006 (95090) ,
 (Antenna type 2,3,4&5) 95200100018 (95421)

2 TYPES OF ELECTRONIC CONTROL UNIT	
A	With 14 pin plug
	
B	NO ELECTRONIC CONTROL UNIT

Tyco Article Nr : 828801-5 to be fitted with 929504-5
Used for relay controlled immobiliser systems.
Supports up to 4-relays.

3 CABLE LENGTH		
	Cable length for Antenna Types 1,2&5	Extension Cable length(L) for Antenna Types 3&4
1	1000mm	850mm
2	1700mm	1550mm
3	1800mm	1650mm
4	2000mm	1850mm
5	2200mm	2050mm
6	2500mm	2350mm
7	Customer specific	
8	Without	

5 CUSTOMER LOGO ON KEY	
A	With
B	Without

4		KEY TYPES	
L	606		
M	607		
N	608		
P	0-250		
R	602		
S	603		
T	0-250		
U	609		
V	610		
W	628		
Y	Customer specific		
Z	Without Key		

LEADING PRODUCT VERSIONS

Versions which are not listed below are also included in our production program

Product Nr.	Technical Characteristics				
	Code 1	Code 2	Code 3	Code 4	Code 5
36173	1	A	1	L	B
33248	1	A	1	M	B
33241	1	A	1	S	B
35007	1	A	2	M	B
31968	1	B	1	Z	B
34272	1	B	2	Z	B
34273	1	B	3	Z	B
34274	1	B	4	Z	B
34275	1	B	5	Z	B
34276	1	B	6	Z	B
33226	2	A	1	L	B

Product Nr.	Technical Characteristics				
	Code 1	Code 2	Code 3	Code 4	Code 5
33230	2	A	1	M	B
31882	2	A	1	R	B
33223	2	A	1	S	B
31967	2	B	1	Z	B
36094	3	B	1	Z	B
34874	5	B	1	Z	B
35163	5	B	2	Z	B
33262	6	A	8	L	B
33266	6	A	8	M	B
31969	6	A	8	R	B
34932	6	A	8	S	B

SPARE PARTS												
Part Name	Cable Length											
	1000 mm		1700 mm		1800 mm		2000 mm		2200 mm		2500 mm	
	Old KAT Nr.	New KAT Nr.	Old KAT Nr.	New KAT Nr.	Old KAT Nr.	New KAT Nr.	Old KAT Nr.	New KAT Nr.	Old KAT Nr.	New KAT Nr.	Old KAT Nr.	New KAT Nr.
Below Dashboard	31968	302200100103	34272	302200100153	34273	-	34274	-	34275	302200100154	34276	-
Above Dashboard	31967	302200100102	*		*		*		*		*	
Above Dashboard With Cap	*		*		*		*		*		*	
Above Dashboard Without Cap	*		*		*		*		*		*	
Above Dashboard Without Cap and LED	34874	-	35163	302200100221	*		*		*		*	
Extension Cable	34713	-	34714	-	34715	-	*		34716	-	*	

* Available upon request

Delivery Volume		
Item	Designation	Number
1	Control Unit	1
2	Antenna	1
3	Ignition Key (Blue)	2
4	Master Key (Red)	1
5	Manual	1

“IMMOBILISER COMPACT,”



MAIN PROPERTIES

a) Electrical data

- Supply Voltage: 6-32V
- Operating Voltage: 12V/24V
- Communication Interface: 250/500 Kbps CAN 2.0 B
- LED Drive Output: 1A (max.)
- Operating Current: 15A
- CAN-Bus: SAE J1939 v2.0B

b) RF Module

- Frequency: 134.2kHz
- Encoding Method: Frequency Key Shifting (FSK)

c) Mechanical data

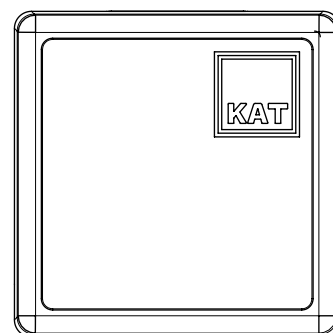
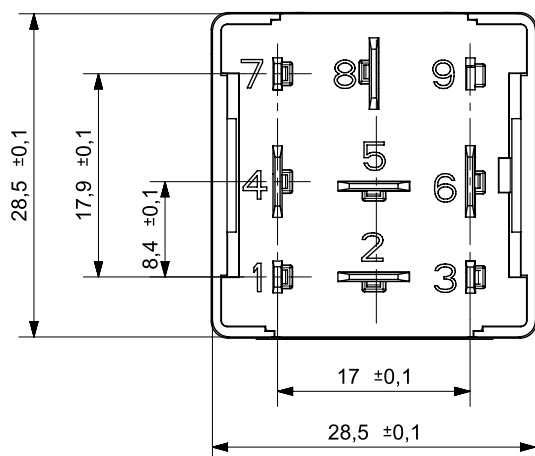
- Mounting Position: Frequency Key
- Shifting (FSK)
- Housing Material: PA 66 / UL 94 V0



TECHNICAL CHARACTERISTICS

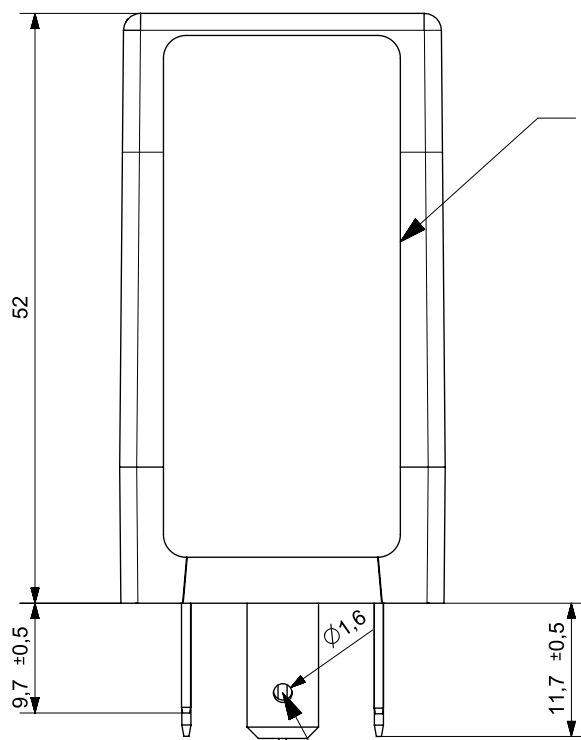
Compact Version

The system consists of a relay containing the record of the transponder code, an ignition switch with integrated transponder and an antenna. The antenna and switch key with integrated transponder fulfill their function without the need for an external power source.



Firmware version: v1.00

Key memory: 15 keys



PRODUCT LABEL

PART NO

FIRMWARE

SERIAL NO / BATCHCODE: (YYWWDD.XXX)

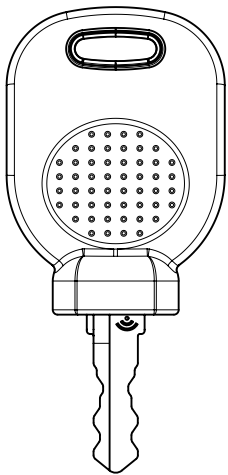
(E1) APPROVAL NO: 10 R - 057597

DATAMATRIX

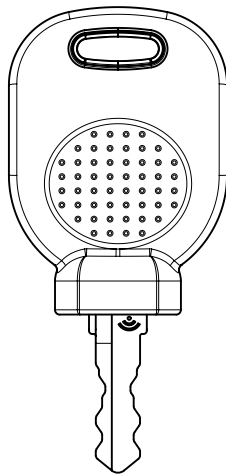
PLUG HOLE DIMENSIONS ARE
ACCORDING TO DIN 46342

PIN-OUT TABLE

Pin Number	Signal	Description
1	ANT-2 (SIGNAL)	Antenna Connection
2	Output	Low side switching - LED drive
3	Ignition IN- KI.15	Ignition supply
4	CAN-Low	CAN Interface
5	ANT-1 (SHIELD)	Antenna Connection
6	GND (-)	Ground
7	CAN-High	CAN Interface
8	Battery (+)	Power Supply
9	Input	N/A



2x SLAVE KEY
BLUE (RAL-5005)
BLACK (RAL-9017)



1X MASTER KEY
RED (RAL-3020)
BLACK (RAL-9017)

The main properties are:

- Communication with CAN Bus J1939 protocol
- IP54 protection class
- 1x Analog output
- 1x Digital output
- Panel top and panel bottom antenna options (Illuminated warning for operator, optional)
- Diagnostic feature
- Compact size
- Connection suitable to standard relay connector
- Approved by the German Federal Motor Transport Authority

***Product will be customised upon request**

Delivery Volume		
Item	Designation	Number
1	Immobiliser	1
2	Ignition Key (Blue)	2
3	Master Key (Red)	1
4	Manual	1

“IMMOBILISER HEAVY DUTY,”



MAIN PROPERTIES

a) Electrical data

- Supply Voltage: 6-32V
- Operating Voltage: 12V/24V
- Communication Interface: 250/500 Kbps CAN 2.0 B
- LED Drive Output: 1A (max.)
- Operating Current: 15A
- CAN-Bus: SAE J1939 v2.0B

b) RF Module

- Frequency: 134.2kHz
- Encoding Method: Frequency Key Shifting (FSK)

c) Mechanical data

- Mounting Position: Frequency Key
- Shifting (FSK)
- Housing Material: PA 66 / UL 94 V0



TECHNICAL CHARACTERISTICS

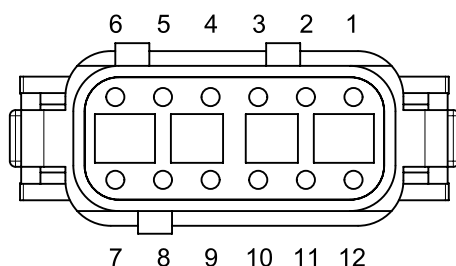
Heavy Duty Version

KAT Immobiliser System for Heavy Duty has 2 versions, with keypad or with antenna.

- IP67 Housing, IP 64 Membrane
- Coaxial cable
- LED indicated
- Directly connected to CAN-Bus Harness system
- Metal dome membran plate
- Crypto message for high security

To disarm immobiliser and operate vehicle with a customer specified keypad code, keypad solution is suggested. In this solution antenna and transponder in the key is not required.

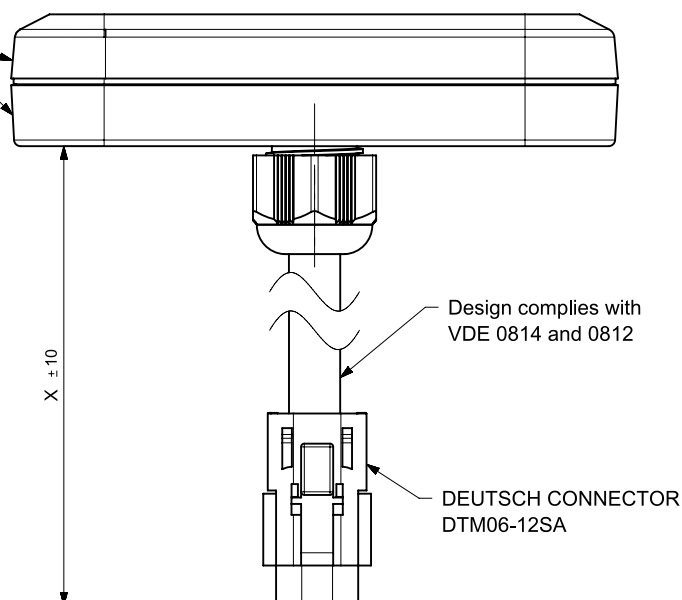
Deutsch Connector



PIN-OUT TABLE

PIN	FUNCTION
1	KEY 7
2	KEY 6
3	KEY 5
4	KEY 4
5	KEY 3
6	KEY 2
7	KEY 1
8	KEY 0
9	GND
10	LED - DRW
11	NC
12	NC

Surface texture VW 41
RAL 9005



The main properties are :

- Communication with CAN Bus J1939 protocol (Encrypted communication, optional)
- IP69K protection class
- 2x 5A Electromechanical relay
- 1x 1A Electromechanical relay
- Panel top and panel bottom antenna options (Illuminated warning for operator, optional)
- Option to use with keypad (for vehicles, where usage of antenna is inapplicable)
- Diagnostic feature
- Connection with DTM series Deutsch connector
- Thatcham (3 Star) approval

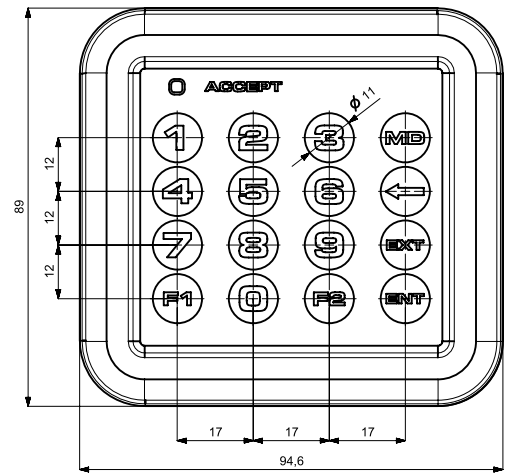
Keystroke : 400 g ± 50
Operating life is 200.000 push

Storage Temperature : -40 +85 C
Operation Temperature : -40 +85 C
Water and Dust Ingress : IP 69 K

Mechanical/ Electrical/ Electronic/Environmental characteristics are according to
STD00140 JCB Specification
Keypad endurance / Life test according to STD00262

Accessories
M5x8mm Socket Button Head Screw Zinc Plated Black Passivated

Quantity
2 Pcs



PIN-OUT TABLE KEYPAD VERSION

GREY CONNECTOR	
PIN	FUNCTION
1	KEY 7
2	KEY 6
3	KEY 5
4	KEY 4
5	KEY 3
6	KEY 2
7	KEY 1
8	KEY 0
9	GND
10	LED - DRW
11	NC
12	NC

BLACK CONNECTOR	
PIN	FUNCTION
1	RELAY 3A - (COM)
2	RELAY 3B - (NO)
3	RELAY 2A - (COM)
4	RELAY 2B - (NO)
5	RELAY 1 - (NO)
6	RELAY 1 - (NC)
7	+12/24DC BAT
8	IGNITION 15/54
9	CAN-H
10	CAN-L
11	GND - (-)
12	RELAY 1 - (COM)

PIN-OUT TABLE ANTENNA VERSION

GREY CONNECTOR	
PIN	FUNCTION
1	NC
2	NC
3	NC
4	NC
5	NC
6	NC
7	NC
8	NC
9	GND
10	LED - DRW
11	ANT-2 (Signal)
12	ANT-1 (Shield)

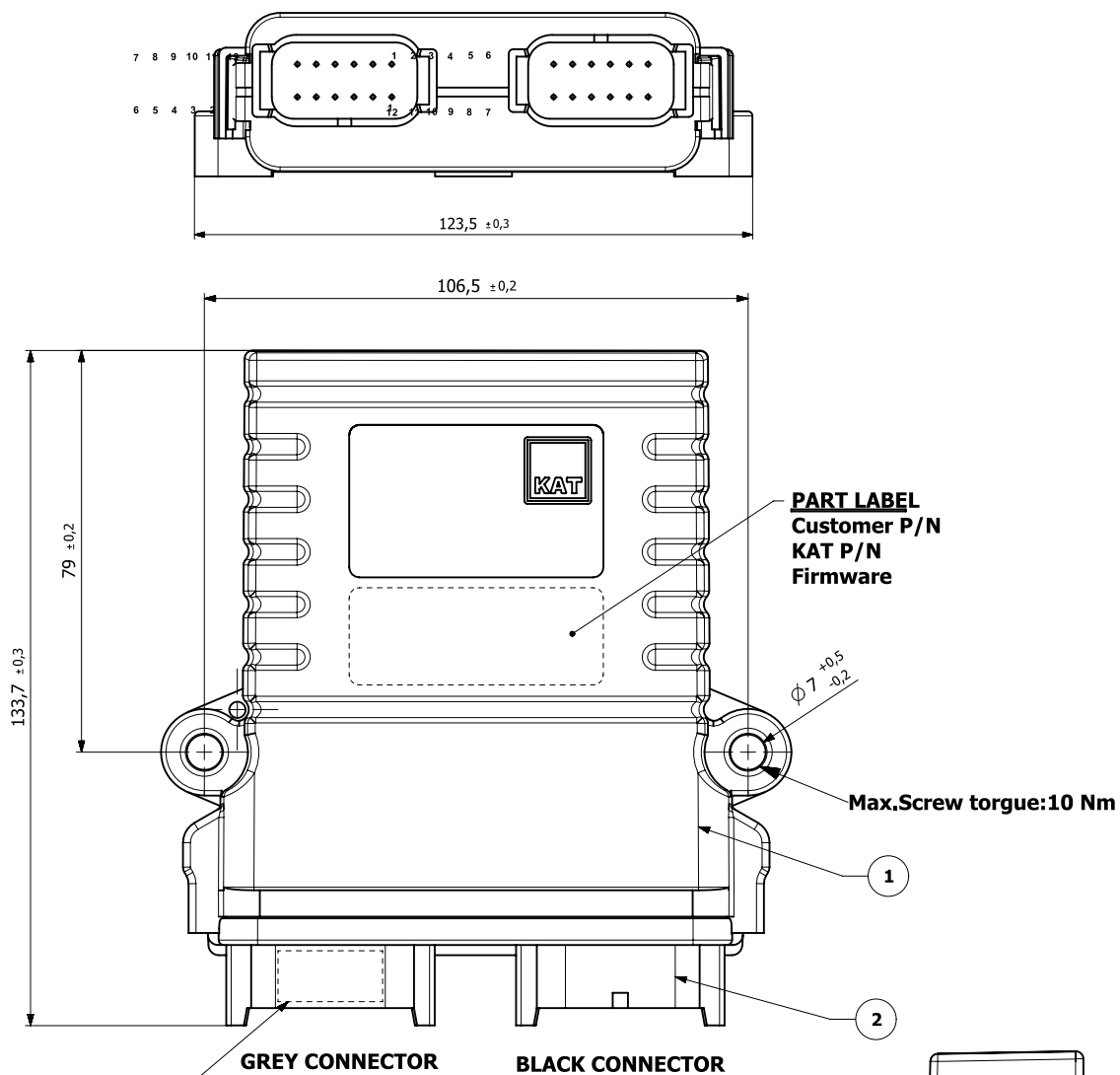
* NC: Not connected

BLACK CONNECTOR	
PIN	FUNCTION
1	RELAY 3A - (COM)
2	RELAY 3B - (NO)
3	RELAY 2A - (COM)
4	RELAY 2B - (NO)
5	RELAY 1 - (NO)
6	RELAY 1 - (NC)
7	+12/24DC BAT
8	IGNITION 15/54
9	CAN-H
10	CAN-L
11	GND - (-)
12	RELAY 1 - (COM)

* NC: Normally closed

** NO: Normally open

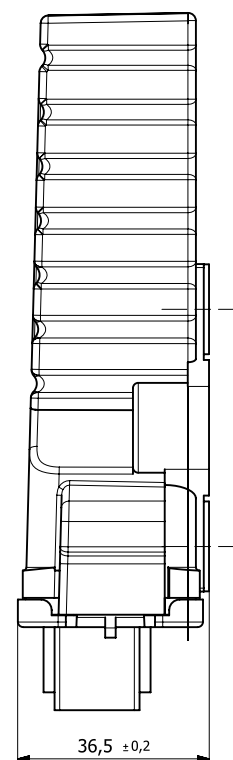
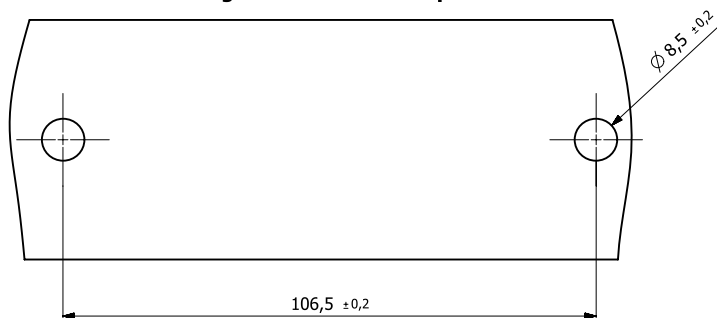
*** COM: Common



Serial number
(Batch code, Date code)

No	Partname	Material
1	Housing	PA66 GF30 / Black
2	DEUTSCH Connector	DTM13-12PA-12PB-R008

Mounting Hole dimesions on panel



***Product will be customised upon request**

Delivery Volume		
Item	Designation	Number
1	Immobiliser	1

“IMMOBILISER INTEGRATED,”



MAIN PROPERTIES

- Operating Temperature: -40°C/ +85°C
- IP Rating: IP 67
- Operating Voltage: 12V/ 24V
- LED Drive Output: 250mA
- CAN-BuS: SAE J1939 v2.0B
- Approvals: CE
- Communication Interface: 250Kbps
CAN 2.0 B



TECHNICAL CHARACTERISTICS

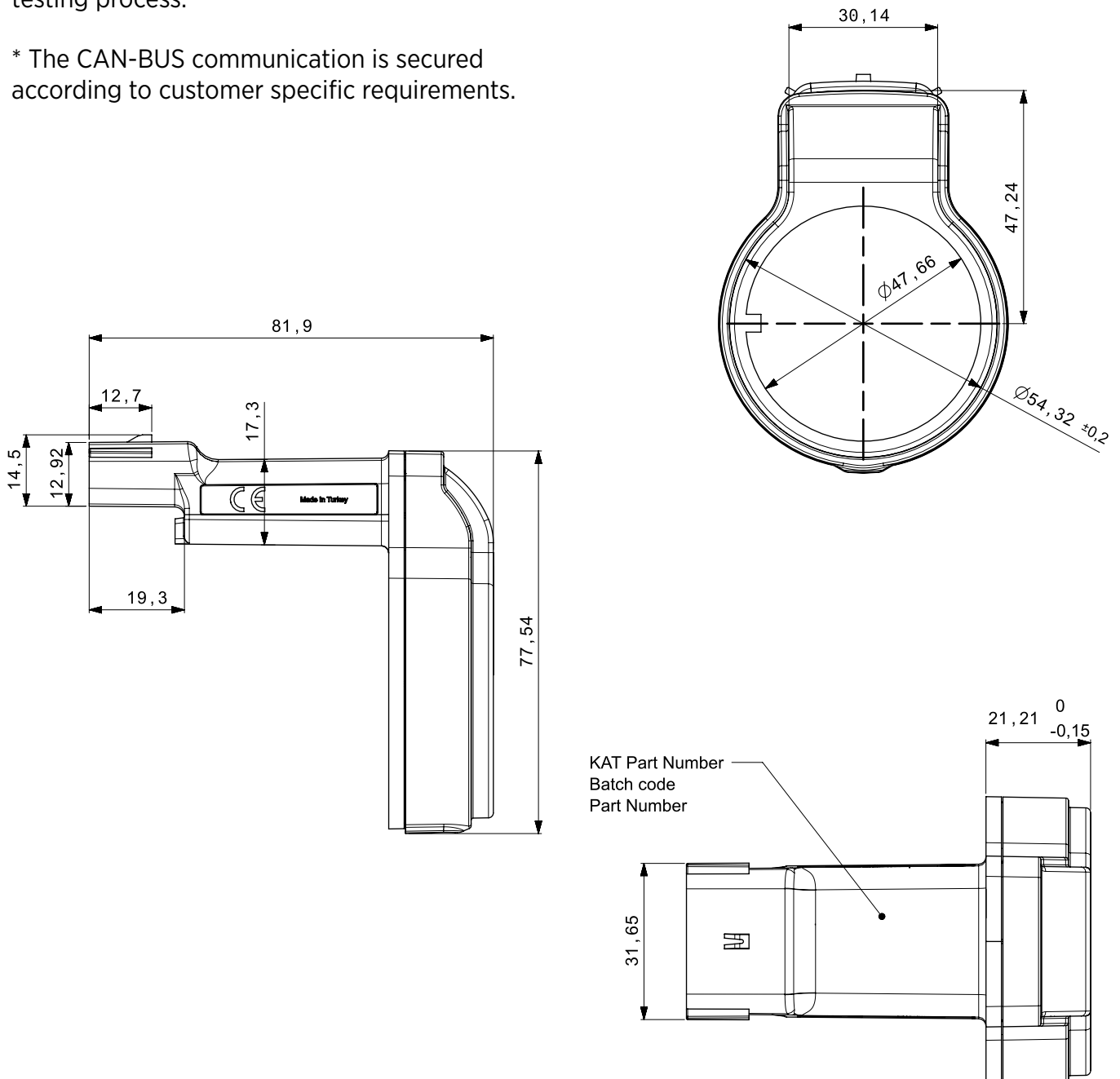
Integrated Version

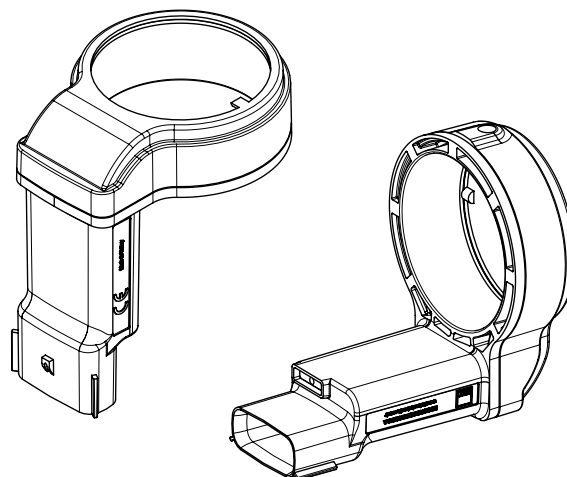
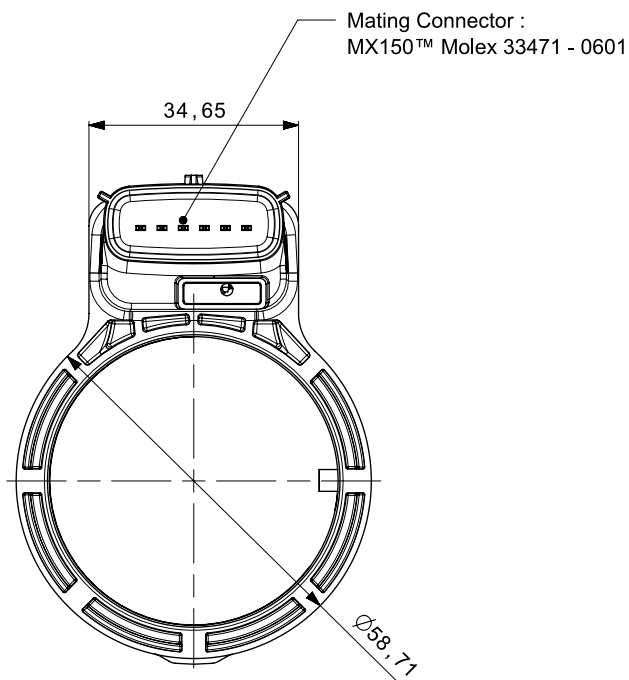
The main purpose of KAT Immobiliser systems is to prevent theft of the vehicle by blocking the ignition system of the vehicle. The system consists of a control unit (ECU) and key(s) with transponder. The antenna and ECU are combined in the same housing which makes the system compact and easy to assemble. The design is compatible to the KAT Ignition Switch and fitting below dashboard.

The system is capable to communicate securely* via CAN-Bus with another controller carrying out functionality to immobilize the machine.

KAT Immobiliser models are offered to our customers with certifications obtained from international institutions as a result of meticulous work and a long testing process.

* The CAN-BUS communication is secured according to customer specific requirements.





Sharp 90 degree bends in the harness should be avoided!
Excessive force, or severe bending of the wire harness may damage the harness.

ANTENNA	
Operating frequency	134,2 kHz
Encoding method	FSK
Coil winding	65 turns
Coil wire	Enameled copper wire
Coil wire diameter	0,18mm

ELECTRICAL SPECIFICATION	
Supply voltage	6-30V
Operating voltage	12V/ 24V
Operating temperature	-40°C to +85°C
Communication Interface	250Kbps CAN 2.0B
LED Drive Output	250mA
Current consumption	40mA
Current consumption (Sleep mode)	<10mA

PIN-OUT TABLE	
Pin Number	Connection
1	Ignition KL 15/54
2	LED (Low Side Switching)
3	CAN-L
4	CAN-H
5	Ground (-)
6	Battery (+)

Designation	Material	Material code	Weight
Resin	TBD	N/A	25 gr
PCB	FR4	N/A	N/A
Pins	C26000 Brass, Plating; 1.25 µm Nickel Overall 2.5µm Select Matte Tin PC Tail Area 0.05-0.25µm Select Gold Contact Area	N/A	N/A
Housing	ZYTEL 70 G30 HSL BK-39B Black	PA66 GF30	25,50 gr
Cover	ZYTEL 70 G30 HSL BK-39B Black	PA66 GF30	8,6 gr

***Product will be customised upon request**

Delivery Volume		
Item	Designation	Number
1	Immobiliser	1

REFERENCE CUSTOMERS

