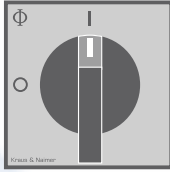




# Switch Wiring Diagrams

POCKETBOOK





## Switch wiring diagrams

### THE BLUE LINE

This pocketbook has been compiled to assist our customers in the selection of our most commonly used cam switches. It contains Kraus & Naimer standard contact arrangements for C-, CA-, CG- and CH-series cam switches.

For details on special or non-standard switches, please contact our local sales office.

# Contents

		Code- no.	Stages C/ CG/ CH	Page
<b>ON/ OFF Sw itches 0-1</b>				
60° Switching	1 pole	A200	1	32
	2 pole	A201	1	32
	3 pole	A202	2	32
	4 pole	A203	2	32
	5 pole	WAA341	3	56
	6 pole	A342	3	56
	7 pole	A343	4	56
	8 pole	A344	4	56
	9 pole	WAA345	5	56
	10 pole	A346	5	56
	11 pole	WAA347	6	56
	12 pole	A348	6	56
90° Switching	1 pole	A290	1	45
	2 pole	A291	1	45
	3 pole	A292	2	45
	4 pole	A324	2	54
4. Pole preclose 30°	4 pole	A293	2	45
	5 pole	A325	3	54
	6 pole	A326	3	54
30° Switching with spring return	1 pole	A204	1	32
	2 pole	A205	1	32
	3 pole	WAA206	2	32
	4 pole	WAA207	2	32
Double-throw Sw itches without „OFF“ Positions (1-2) 60° Switching	1 pole	A220	1	36
	2 pole	A221	2	36
	3 pole	A222	3	36
	4 pole	A223	4	36
	5 pole	A369	5	58
	6 pole	A370	6	58
	7 pole	A371	7	58
	8 pole	A372	8	58
	9 pole	WAA373	9	58
	10 pole	WAA374	10	58
	11 pole	WAA375	11	58
	12 pole	WAA376	12	58

## Contents

		Code- no.	Stages C/ CG/ CH	Page
<b>Double-throw Switches</b>				
without „OFF“ (1-2)	1 pole	A720	1	83
with electrically	2 pole	A721	2	83
isolated contacts	3 pole	A722	3	83
	4 pole	A723	4	83
without „OFF“	1 pole	A295	1	47
with spring return	2 pole	A296	2	47
30° Switching	3 pole	WAA297	3	47
with electrically	1 pole	A795	1	86
isolated contacts				
with „OFF“	1 pole	A210	1	33
Positions (1-0-2)	2 pole	A211	2	33
60° Switching	3 pole	A212	3	33
	4 pole	A213	4	33
	5 pole	A361	5	57
	6 pole	A362	6	57
	7 pole	WAA363	7	57
	8 pole	WAA364	8	57
with electrically	1 pole	A710	1	81
isolated contacts	2 pole	A711	2	81
	3 pole	A712	3	81
	4 pole	A713	4	81
Positions (1-0-2)	1 pole	A218	1	35
90° Switching	2 pole	A219	2	35
	3 pole	WAA299	3	48
KG-, KH-, KF-Serie	3 pole	K900		88
1 Pol preclose 30°	4 pole	WAA294	4	44
KG-, KH-, KF-Serie,	4 pole	K950		88
4. pole preclose 30°				
Positions (1-0-2)	1 pole	A214	1	34
30° with spring return	2 pole	A215	2	34
to center	3 pole	A216	3	34

# Contents

		Code- no.	Stages C/ CG/ CH	Page		
<b>Double-throw Switches</b>						
with electrically isolated contacts	1 pole	A714	1	82		
	2 pole	A715	2	82		
Positions (1-0-2)	1 pole	A320	1	53		
with spring return from left to center	2 pole	A321	3	52		
from 1 to 0	3 pole	A322	2	53		
<b>Multi-step Switches without „OFF“ position</b>						
1 pole	3 Step	60°	A230	2	38	
	4 Step	60°	A231	2	38	
	5 Step	60°	A232	3	38	
	6 Step	60°	A233	3	38	
	7 Step	45°	WAA234	4	38	
	8 Step	45°	WAA236	4	38	
	9 Step	30°	WAA236	5	38	
	10 Step	30°	WAA237	5	38	
	11 Step	30°	WAA239	6	38	
	12 Step	30°	WAA239	6	38	
	2 pole	3 Step	60°	A250	3	41
		4 Step	50°	A251	4	41
5 Step		60°	A252	5	41	
6 Step		60°	WAA253	6	41	
7 Step		45°	WAA254	7	41	
8 Step		45°	WAA255	8	41	
3 pole		3 Step	60°	A270	5	43
		4 Step	60°	A271	6	43
	5 Step	60°	WAA272	8	43	
	6 Step	60°	WAA273	9	43	
	7 Step	45°	WAA274	11	43	
	8 Step	45°	WAA275	12	43	
	4 pole	3 Step	60°	A476	6	71
		4 Step	60°	A477	8	71
5 Step		60°	WAA478	10	71	

# Contents

			Code- no.	Stages C/ CG/ CH	Page
<b>Multi-step Sw itches w ithout „OFF“ position</b>					
5 pole	3 Step	60°	WAA484	8	73
	4 Step	60°	WAA485	10	73
6 pole	3 Step	60°	WAA489	9	75
	4 Step	60°	WAA490	12	75
<b>and electrically isolated contacts</b>					
1 pole	3 Step	60°	A730	2	82
	4 Step	60°	A731	2	85
2 pole	3 Step	60°	A750	3	84
	4 Step	60°	A751	4	85
<b>Multi-step Sw itches w ith „OFF“ position</b>					
1 pole	2 Step	60°	A240	1	38
	3 Step	45°	A242	2	39
	4 Step	30°	A242	2	39
	5 Step	30°	A243	3	39
	6 Step	30°	A244	3	39
	7 Step	30°	WAA245	4	39
	8 Step	30°	WAA246	4	39
	9 Step	30°	WAA247	5	39
	10 Step	30°	WAA248	5	39
	11 Step	30°	WAA249	6	39
	2 pole	2 Step	50°	A260	2
3 Step		45°	A261	3	42
4 Step		30°	WAA262	4	42
5 Step		30°	WAA263	5	42
6 Step		30°	WAA264	6	42
7 Step		30°	WAA265	7	42
3 pole		2 Step	60°	A280	3
	3 Step	45°	A281	5	44
	4 Step	30°	WAA282	6	44
	5 Step	30°	WAA283	8	44
	6 Step	30°	WAA284	9	44

# Contents

		Code- no.	Stages C/ CG/ CH	Page
<b>Multi-step Sw itches w ith „OFF“ position</b>				
4 pole	2 Step	60° WAA480	4	72
	3 Step	45° WAA481	6	72
	4 Step	30° WAA482	8	72
5 pole	2 Step	60° WAA486	5	74
	3 Step	45° WAA487	8	74
6 pole	2 Step	60° WAA491	6	75
<b>General Application Sw itches</b>				
2 Gang	1 pole	60° A310	1	49
Switching sequence:	2 pole	60° A312	2	50
0, A, A+B	3 pole	60° WAA314	3	51
3 Gang	1 pole	30° A311	2	49
Switching sequence:	2 pole	30° WAA313	3	50
0, A, A+B, A+B+C	3 pole	30° WAA315	5	52
<b>General Application Series - Sw itching</b>				
2 Gang	1 pole	30° WAA330	1	55
Switching sequence:	2 pole	30° WAA331	2	55
0, A, B, A+B	3 pole	30° WAA332	3	55
<b>Coding Sw itches/ Binary Code</b>				
0 up to 7	30°	A540	2	76
0 up to 7 complement	45°	WAA541	2	76
0 up to 7+complement	45°	WAA542	3	77
0 up to 11	30°	A543	2	77
0 up to 11+complement	30°	WAA545	4	78
<b>Coding Sw itches/ BCD-Code</b>				
0 up to 9	30°	A550	2	78
0 up to 9 complement	30°	WAA551	2	79
0 up to 9+complement	30°	WAA552	4	79



# Contents

		Code- no.	Stages C/ CG/ CH	Page
<b>Voltmeter-Double-throw Sw itches</b>				
without „OFF“				
3 phase 3 wire	45°	A023	2	19
3 phase 3 wire and phase to neutral	45°	A025	3	19
with „OFF“				
3 phase 3 wire	45°	A004	2	14
3 phase to neutral	45°	WAA005	2	15
3 phase 3 wire and phase to neutral	45°	A007	3	16
2 separate 3 phase with „OFF“	45°	WAA008	4	17
<b>Ammeter-Double-throw Sw itches</b>				
with „OFF“				
1 pole 3 Current transformers	90°	A048	3	24
2 pole 2 Current transformers	90°	WAA037	3	21
2 pole 3 Current transformers	90°	A038	5	22
without „OFF“				
1 pole 3 Current transformers	90°	A017	3	18
1 pole 4 Current transformers	90°	WAA036	4	20
2 pole 4 Current transformers	90°	WAA039	6	23

## Contents













		Code- no.	Stages C/ CG/ CH	Page
<b>Control Switches</b>				
Stop switch	1 pole	30° WAA174	1	25
Start switch	1 pole	30° A175	1	25
Stop start switch	1 pole	30° A176	1	26
	2 pole	30° WAA183	2	30
Stop start switch with spring return from start to run				
		90°+30° A178	1	28
Double-Stop start switch with spring return from start to run				
		60°+30° WAA177	2	27
for contactor interlock with spring return from start to run				
		60°+30° WAA182	2	30
and electrically isolated contacts				
Stop start switch	1 pole	30° A789	1	86
Stop start switch with spring return form start to run				
		90°+30° A791	1	86
for 2 contactors, Contactor control with spring return to „OFF“				
		30° WAA179	3	29
Main Switches 3, 4, 6, 8 pole, with and without auxiliary contacts				87

# Contents

		Code- no.	Stages C/ CG/ CH	Page
<b>Motor Switches</b>				
<b>Motor Reversing Switches</b>				
Position (1-0-2)	2 pole 60°	A400	2	59
	3 pole 60°	A401	3	59
with spring return to „OFF“	3 pole 30°	A228	3	37
<b>Star-delta Switches</b>				
Normal version	60°	A410	4	60
Reversing	45°	WAA413	5	61
with auxiliary contact, closed in „OFF“ Position	60°	WAA416	5	62
For use with contactors	90°	A419	4	62
<b>Motor Control Switches</b>				
Position (0-1-2)	60°	A440	4	64
without „OFF“	60°	A466	4	69
Position (1-0-2)	60°	A441	4	64
Reversing	45°	A442	6	65
for reversing for for use with contactors and	60°	WAA444	5	66
with slip clutch for „OFF“ load use	45°	WAA468	10*	70
<b>Motor Control Switches</b>				
2 speed, 2 winding 0 - A - B, Y or Δ	60°	WAA451	3	67
3 speed, 2 winding 0 - AΔ - BY - AY	45°	WAA457	6	68
<b>Start and Run Switches</b>				
Split-phase start Reversing	90°+30°	A425	2	63
Split-phase start	60°+30°	WAA426	3	63
Split-phase reversing, auto cutout of start winding	60°	A622	3	80

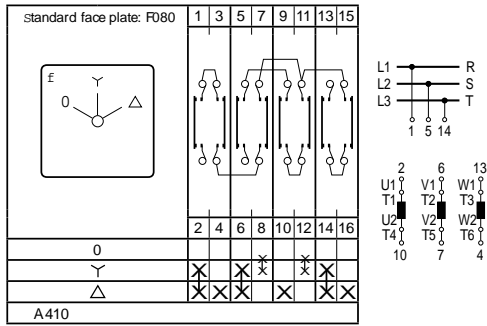
\* with slip clutch

## Caption

Contactor or Relay	
Thermal Relay	
Motor	
Coil / Inductance	
Ammeter	
Voltmeter	
Earth / Ground	
NO-contact	
NC-contact	
Motor - star circuit	
Motor - delta circuit	
Motor - double star circuit	

# Connection Details

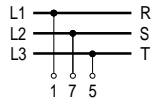
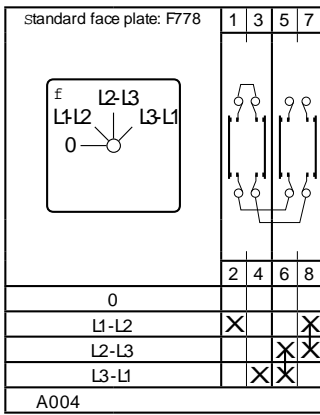
The information is presented with either a switch chart only or a switch chart and connection diagrams when appropriate.



## A410 Star-Delta Switch

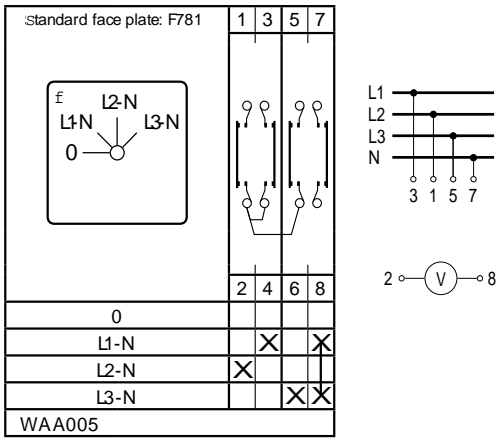
The large image shows the switch chart. A cross in a column indicates that the contact above it is closed, when the switch is in the position as indicated to the left of the cross. For example, contact 3/4 closes in the delta position. A vertical line between 2 or more crosses indicate that the contact remains closed while the switch moves from one position to the next. The images on the right show the wiring connections for both the supply and load. For example, L1 connects to switch terminal 1 while U1 or T1 connects to terminal 2.

# Voltmeter switches



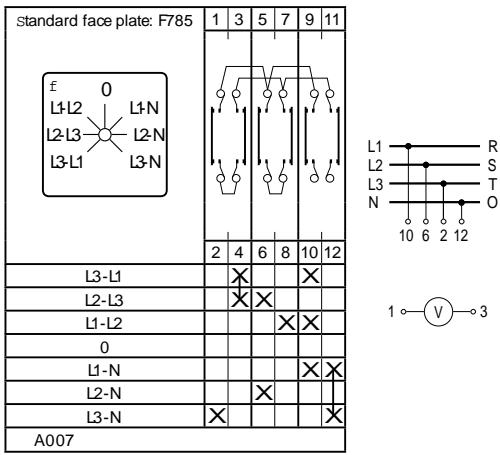
A004 Voltmeter Switch  
3 phase 3 wire

# Voltmeter switches



WAA005 Voltmeter Switch  
(formerly A005) 3 phase to neutral

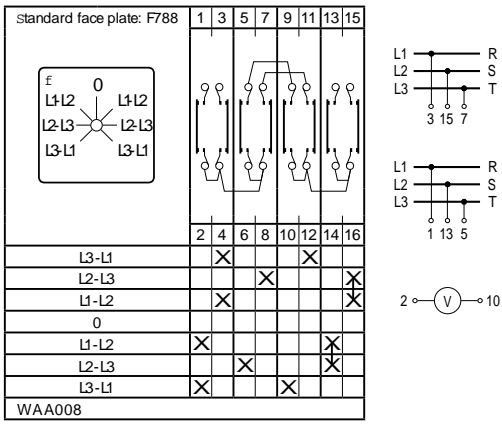
# Voltmeter switches



A007 Voltmeter Switch  
3 phase to neutral

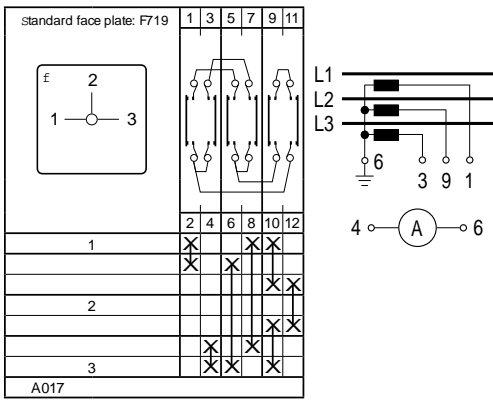


# Voltmeter switches



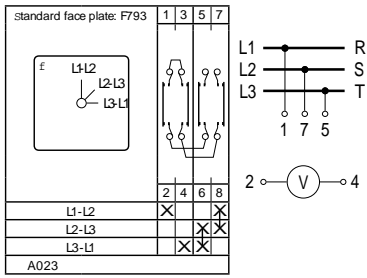
WAA008 Voltmeter Switch  
(formerly A008) 2 separate 3 phase

# Ammeter switches

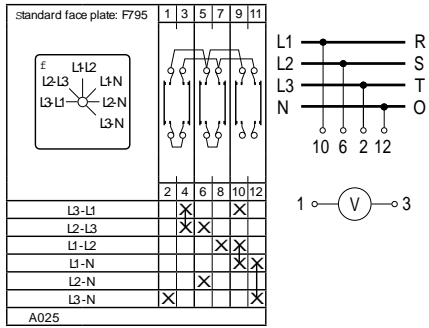


A017 Ammeter Switch  
1 pole, 3 Current transformers

## Voltmeter switches

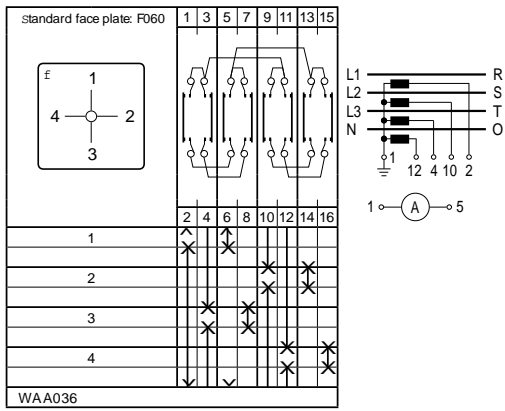


A023 Voltmeter Switch, 3 phase 3 wire



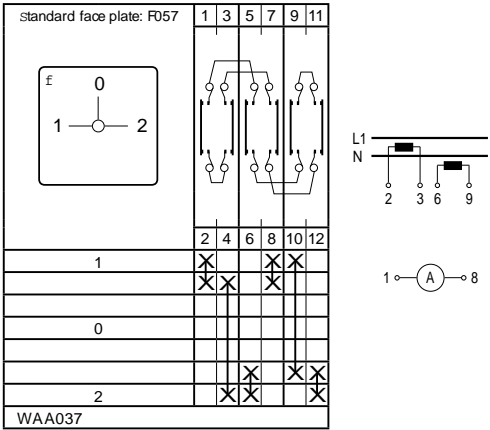
A025 Voltmeter Switch, 3 phase 3 wire,  
3 phase to neutral

# Ammeter switches



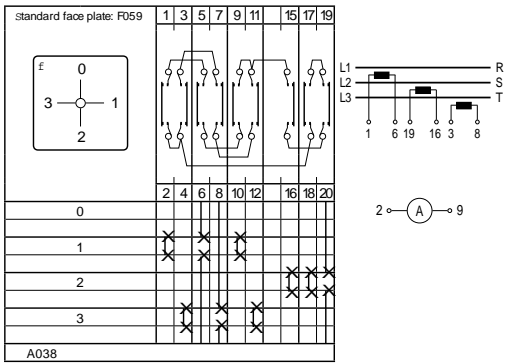
WAA036 Ammeter Switch  
(formerly A036) 1 pole, 4 Current transformers

# Ammeter sw itches



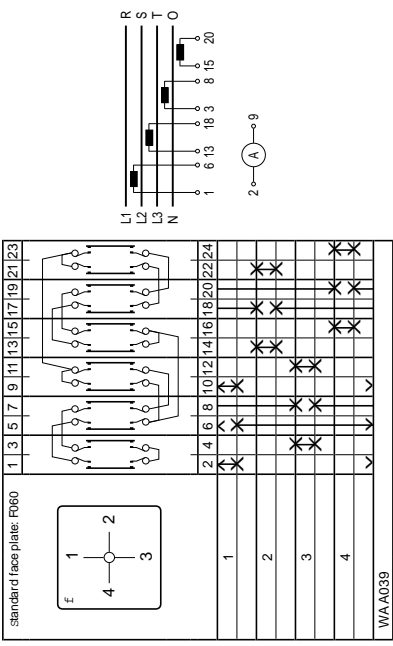
WAA037 Ammeter Switch  
(formerly A037) 2 pole, 2 Current transformers

# Ammeter switches



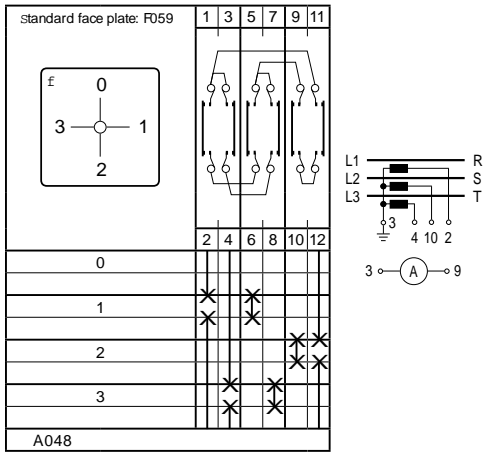
A038 Ammeter Switch  
2 pole, 3 Current transformers

# Ammeter switches



**WAA039 Ammeter Switch**  
(formerly A039) 2 pole, 4 Current transformers

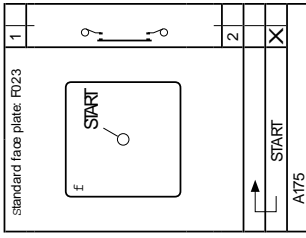
# Ammeter switches



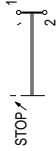
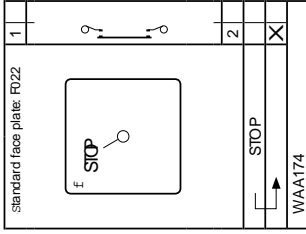
A048 Ammeter Switch  
1 pole, 3 Current transformers



# Control Switches

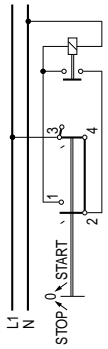
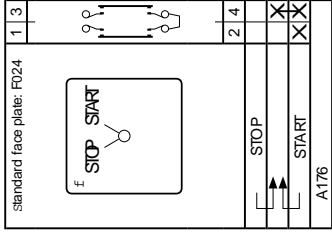


**A175 Start switch**  
1 pole



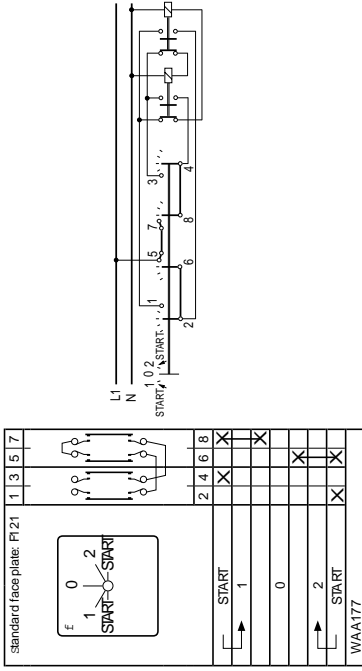
**WAA174 Stop switch**  
(formerly A174) 1 pole

# Control Switches



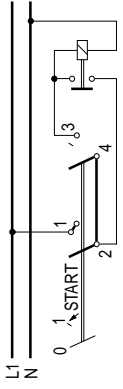
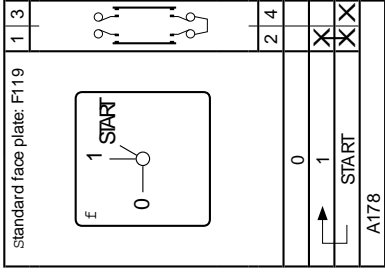
**A176 Stop start switch**  
 2 pole see page 31  
 Electrically isolated contacts see page 86

# Control Switches



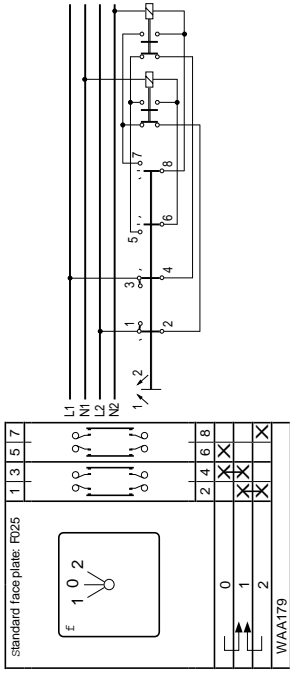
**WAA177 Stop Start Switch for two units**  
 (formerly A177) 2 pole, with spring return from start to run

# Control Sw itches



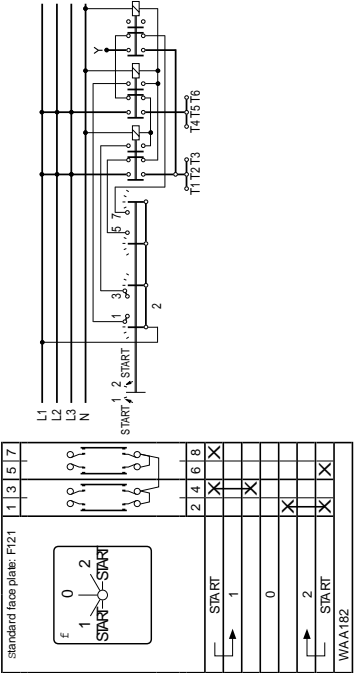
**A178 Stop start switch**  
 1 pole, with spring return from start to run  
 Electrically isolated contacts see page 86

# Control Switches



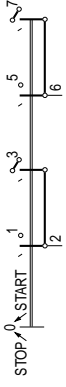
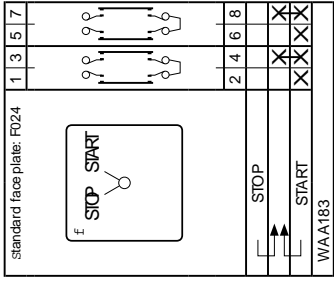
**WAA179** Contactor control with spring return to „OFF“  
(formerly A179)

Control Sw itches



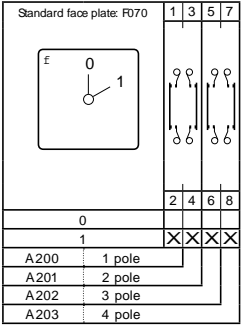
WAA182 Stop Start Switch (formerly A182) with spring return to run with contactor interlock

# Control Switches



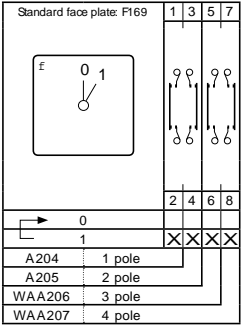
WAA183 Stop start switch  
(formerly A183) 2 pole

# ON/ OFF Sw itches



A200 up to A203  
ON/ OFF Switches,  
60° Switching

ON/ OFF Switches 5-up to 12 pole  
see page 56

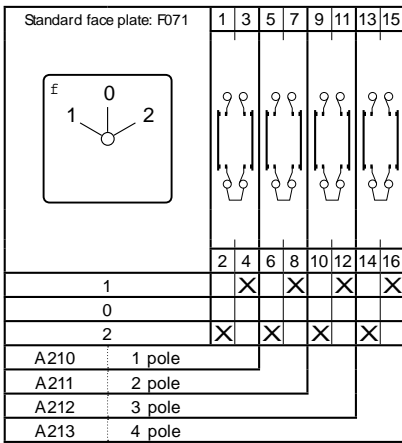


A204 up to WAA207  
(formerly A207)

ON/ OFF Switches  
with spring return,  
30° Switching



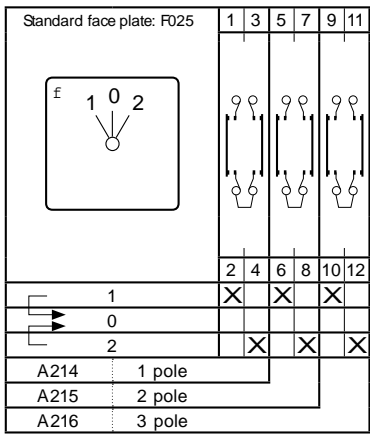
# Double-throw Switches



## A210 up to A213 Double-throw Switches, with „OFF“, 60° Switching

Electrically isolated contacts see page 81  
 Double-throw Switches with „OFF“, 5-8 pole see page 57

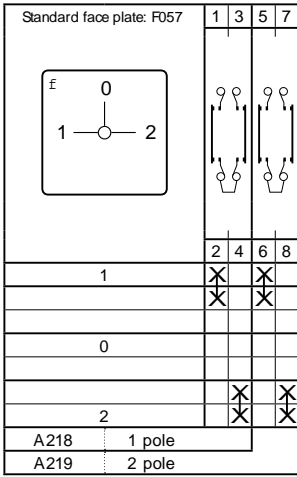
# Double-throw Switches



A214 up to A216 Double-throw Switches with „OFF“ and with spring return to „OFF“, 30° Switching

Electrically isolated contacts see page 82

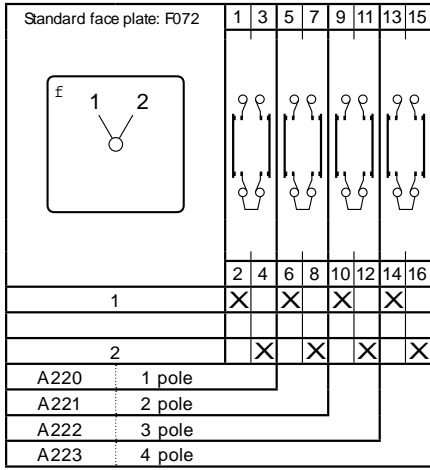
# Double-throw Switches



A218, A219  
 Double-throw Switches with „OFF“,  
 90° Switching

For 3 & 4 pole options see pages 48 & 46 respectively

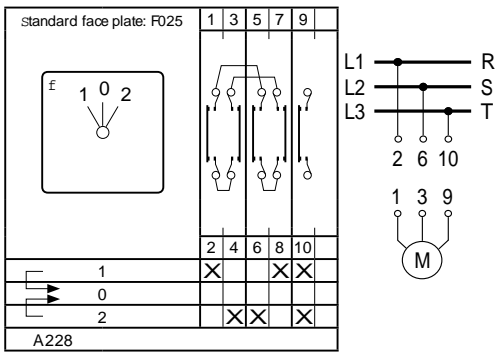
# Double-throw Switches



A220 up to A223  
 Double-throw Switches without „OFF“,  
 60° Switching

Electrically isolated contacts see page 83  
 Double-throw Switches without „OFF“ 5-12 pole see page 58

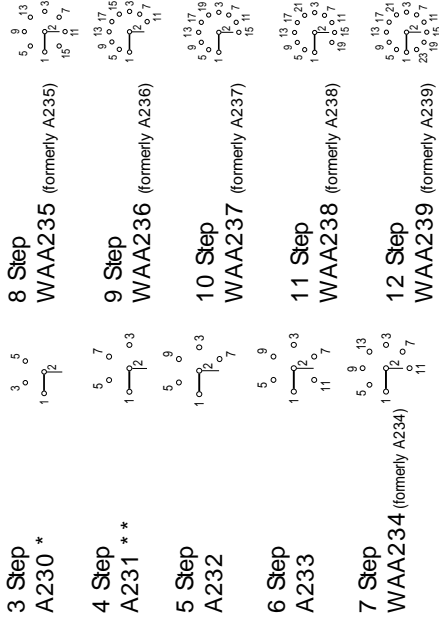
# Motor Switches



A228 Motor Reversing Switches  
3 pole, with spring return to 0

# Multi-step Sw itches 1 pole without „OFF“

38



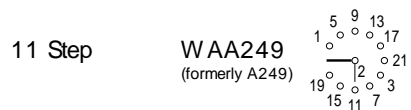
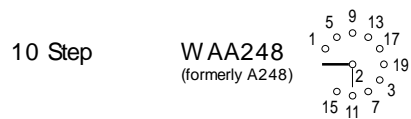
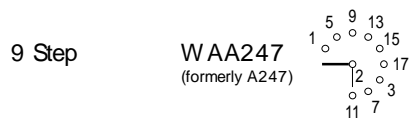
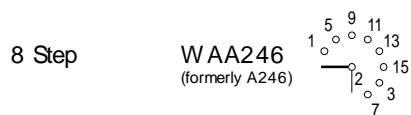
Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate, and electrically isolated contacts see \* Page 84 resp. \*\* Page 85

## Multi-step Switches 1 pole with „OFF“

2 Step	A240	
3 Step	A241	
4 Step	A242	
5 Step	A243	
6 Step	A244	
7 Step	WAA245 (formerly A245)	

Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.

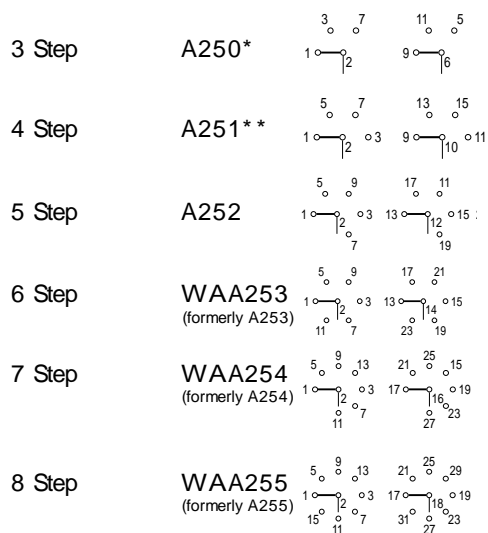
## Multi-step Switches 1 pole with „OFF“



Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.



## Multi-step Switches 2 pole without „OFF“



Electrically isolated contacts see \* Page 84 resp. \*\* Page 85

Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.

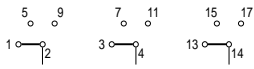
## Multi-step Switches 2 pole with „OFF“

2 Step	A260	
3 Step	A261	
4 Step	WAA262 (formerly A262)	
5 Step	WAA263 (formerly A263)	
6 Step	WAA264 (formerly A264)	
7 Step	WAA265 (formerly A265)	

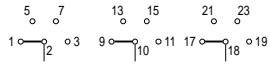
Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.

## Multi-step Switches 3 pole without „OFF“

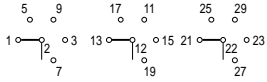
**3 Step  
A270**



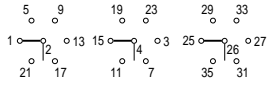
**4 Step  
A271**



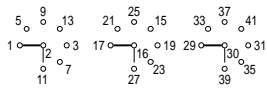
**5 Step  
WAA272  
(formerly A272)**



**6 Step  
WAA273  
(formerly A273)**



**7 Step  
WAA274  
(formerly A274)**

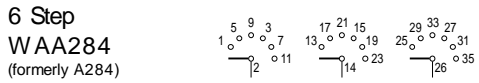
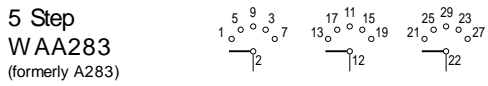
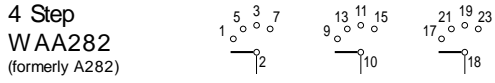
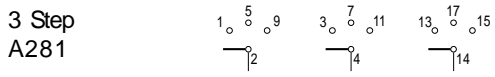
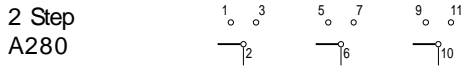


**8 Step  
WAA275  
(formerly A275)**



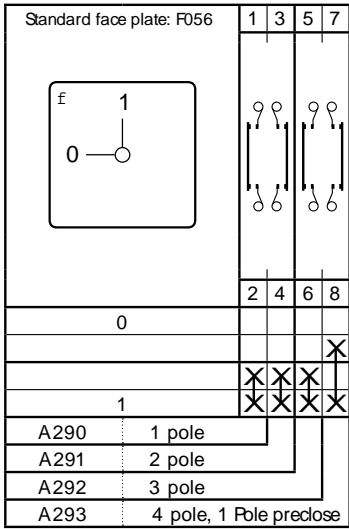
Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.

## Multi-step Switches 3 pole with „OFF“



Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.

# ON/ OFF Sw itches



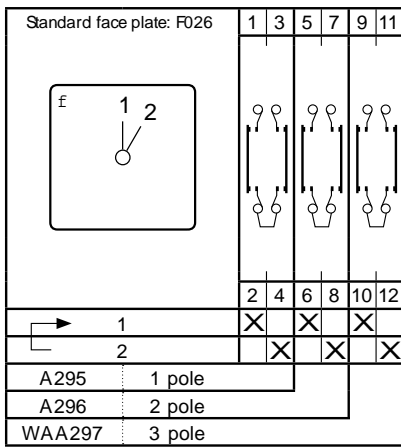
A290 up to A293  
ON/ OFF Switches 90° Switching

# Double-throw Switches

Standard face plate: F057	1	3	5	7	9	11	13	15
	2	4	6	8	10	12	14	16
1	X	X	X	X				
	X	X	X	X				
0							X	
								X
2		X	X	X	X			
		X	X	X	X			
WAA294	4 pole, 1 Pole preclose							

WAA294 Double-throw Switch with „OFF“, (formerly A294) 90° Switching

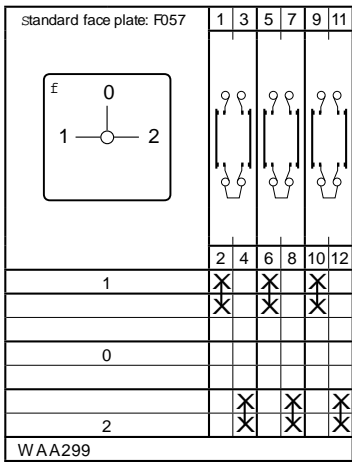
# Double-throw Switches



A295\* up to WAA297 (formerly A297)  
 Double-throw Switches without „OFF“,  
 with spring return, 30° Switching

\* Electrically isolated contacts see page 86

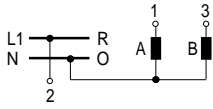
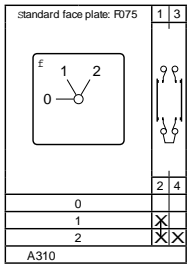
# Double-throw Switches



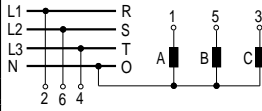
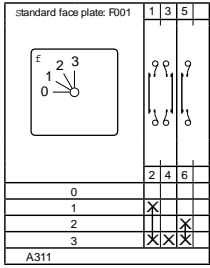
WAA299 Double-throw Switch with „OFF“  
 (formerly A299) 90° Switching, 3 pole



# General Application Switches

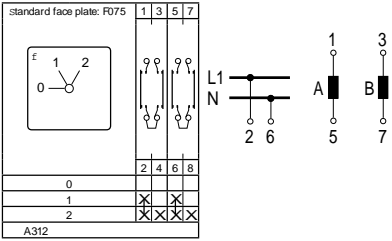


**A310** General Application Switch  
2 Gang, 1 pole  
0, A, A+B

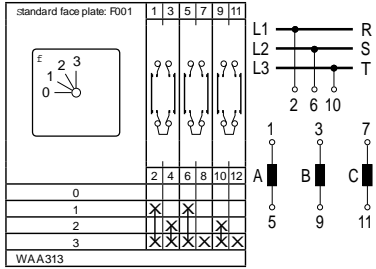


**A311** General Application Switch  
3 Gang, 1 pole  
0, A, A+B, A+B+C

# General Application Switches

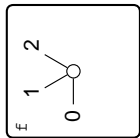
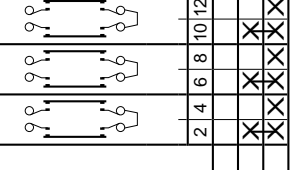


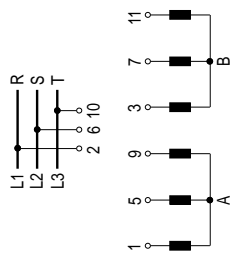
**A312** General Application Switch  
2 Gang, 2 pole  
0, A, A+B



**WAA313** General Application Switch  
(formerly A313) 3 Gang, 2 pole  
0, A, A+B, A+B+C

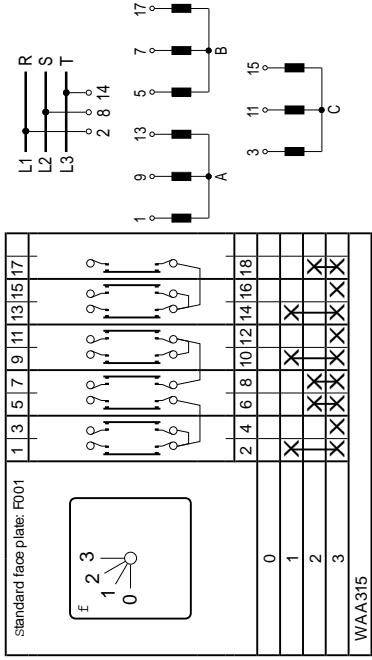
# General Application Switches

standard face plate: F075 	1	3	5	7	9	11
						
	2	4	6	8	10	12
		X	X	X	X	X
WAA314						



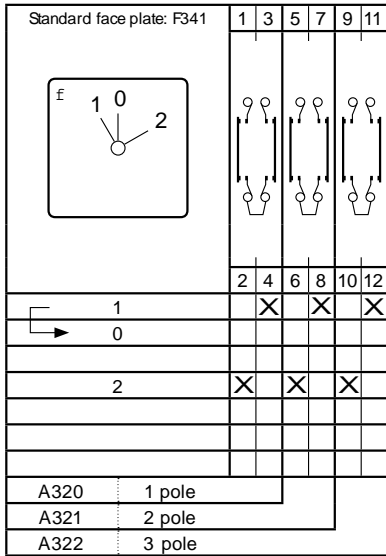
WAA314 General Application Switch  
 (formerly A314) 2 Gang, 3 pole  
 0, A, A+B

# General Application Switches



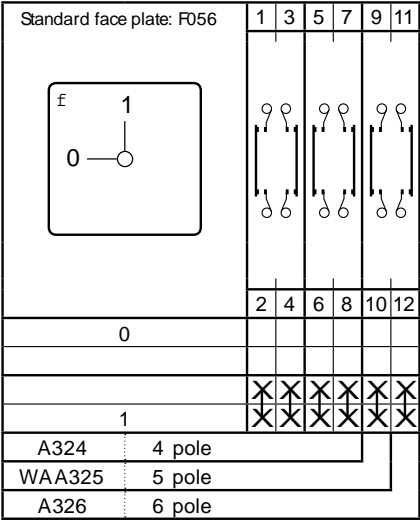
WAA315 General Application Switch  
 (formerly A315) 3 Gang, 3 pole  
 0, A, A+B, A+B+C

# Double-throw Switches



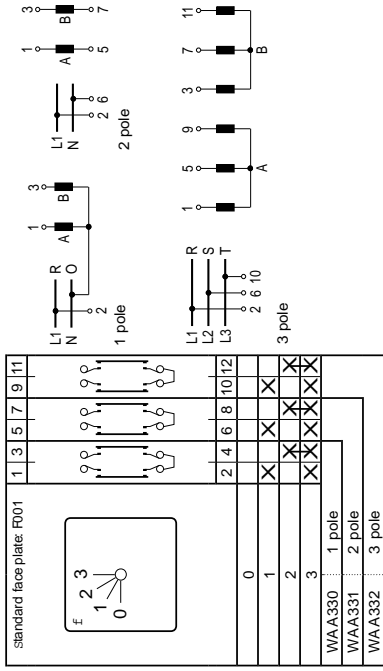
A320 up to A322  
 Double-throw Switches with „OFF“ with  
 spring return from left to center

# ON/ OFF Sw itches



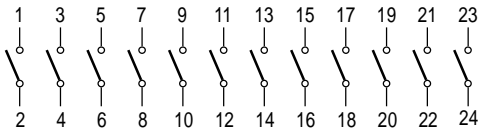
A324 up to A326  
ON/ OFF Switches, 90° Switching

## 2 Gang Series Switching



WAA330 up to WAA332 2 Gang Series Switching  
 (formerly A330 up to A332) 0, A, B, A+B

## ON/ OFF Sw itches

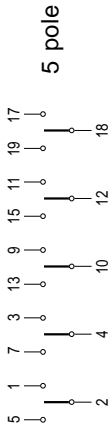


WAA341 (formerly A341)	5 pole
A342	6 pole
A343	7 pole
A344	8 pole
WAA345 (formerly A345)	9 pole
A346	10 pole
WAA347 (formerly A347)	11 pole
A348	12 pole

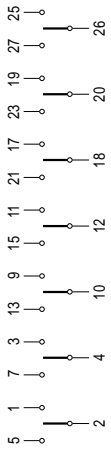
ON/ OFF Switches, 60° Switching



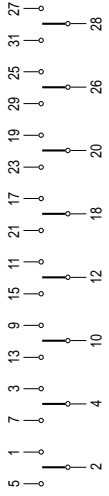
# Double-throw Switches



5 pole



6 and 7 pole



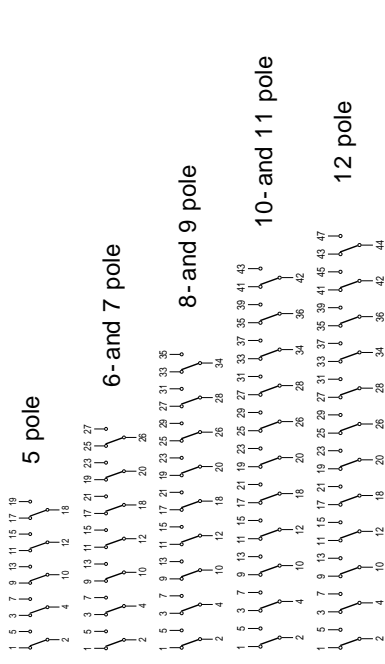
8 pole

## Double-throw Switches with "OFF" 60° Switching

A361 5 pole WAA363 (formerly A363) 7 pole

A362 6 pole WAA364 (formerly A364) 8 pole

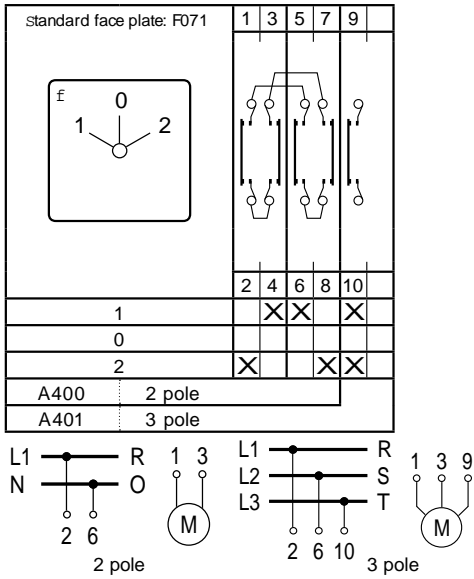
# Double-throw Switches



## Double-throw Switches without „OFF“, 60° Switching

- A369 5 pole A371 7 pole WAA373 9 pole WAA375 11 pole  
(formerlyA373) (formerlyA375)
- A370 6 pole A372 8 pole WAA374 10 pole WAA376 12 pole  
(formerlyA374) (formerlyA376)

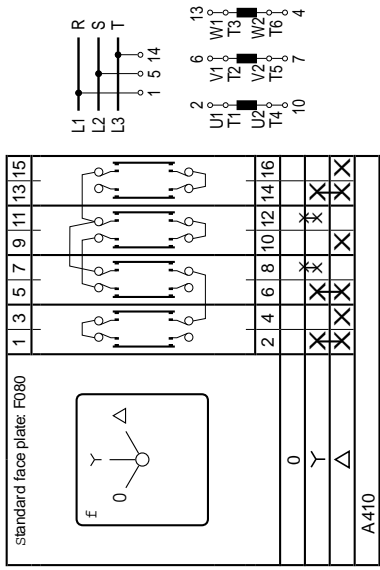
# Motor Switches



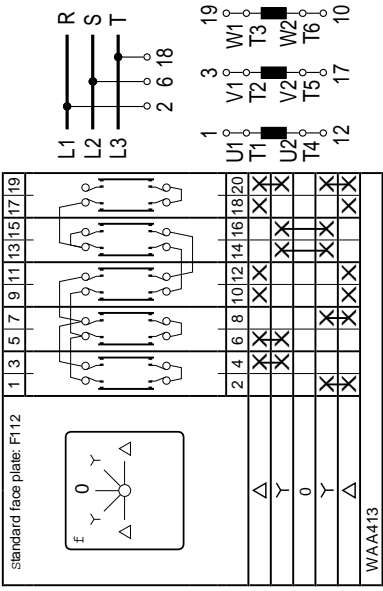
## A400, A401 Motor Reversing Switches

With spring return to „OFF“ see page 37

# Motor Switches

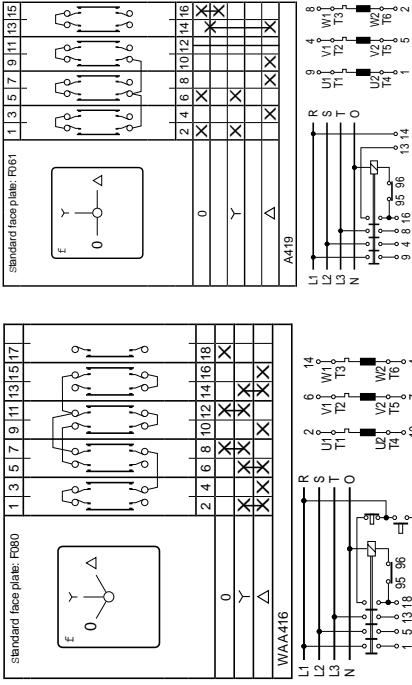


# Motor Switches



**WAA413 Star-delta Switch**  
(formerly A413) **Reversing**

# Motor Switches

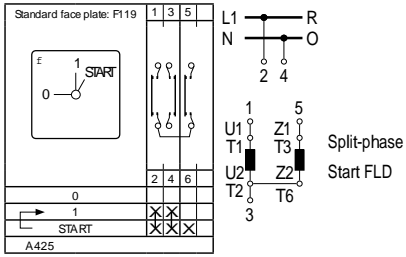


WAA416 With auxiliary contact, A419 For use with reversing contactors

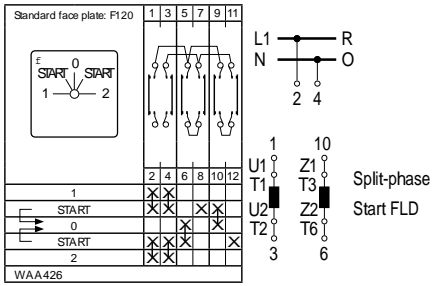
## Star-delta Switches

WAA416 With auxiliary contact, A419 For use with reversing contactors

# Motor Switches

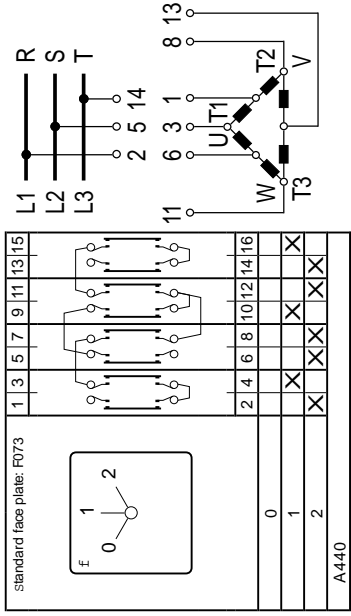


**A425 Start and Run Switch**  
Split-phase start



**WAA426 Start and Run Switch**  
(formerly A426) Split-phase start reversing

# Motor Switches



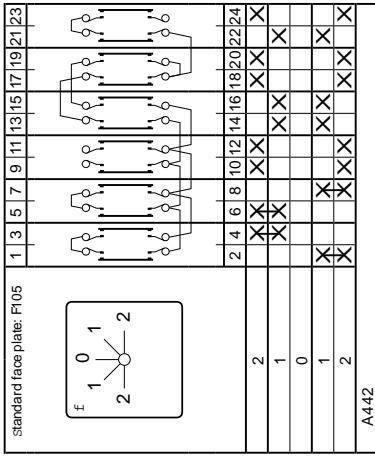
A440 2 speed, single winding  
 0 - AΔ - AΥ

A441 AΔ - 0 - AΥ

without „OFF“ see page 69



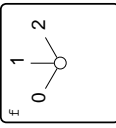
# Motor Switches



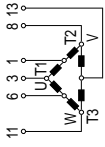
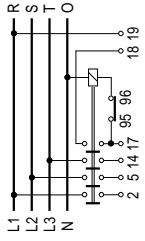
A442 2 speed, single winding with reverse  
 A Y - AΔ - 0 - AΔ - A Y

# Motor Switches

Standard face plate: F703

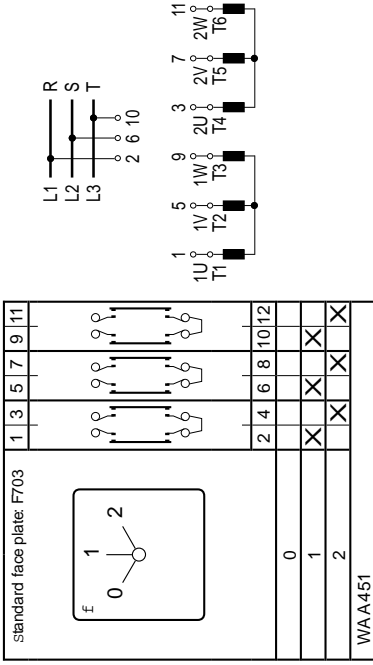


	1	3	5	7	9	11	13	15	17	19
0										
1										
2										
WAA444										

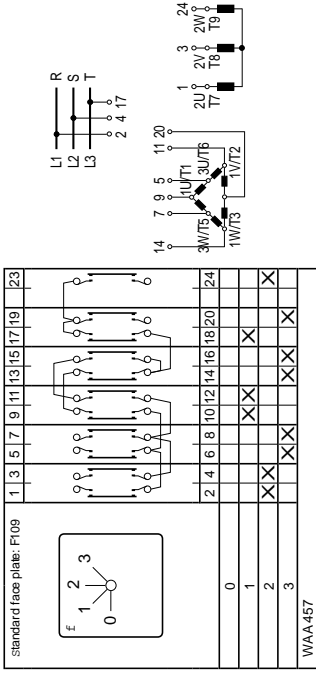


**WAA444 Motor Control Switch**  
(formerly A444) For use with reversing contactors

# Motor Switches

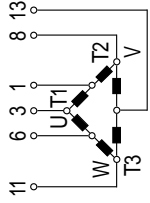
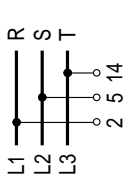
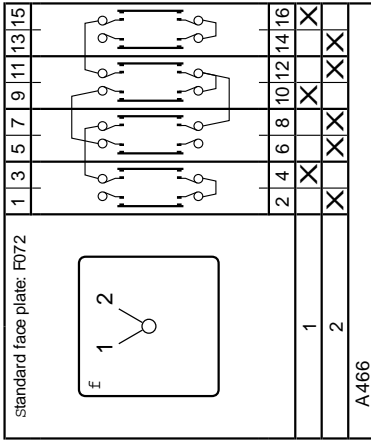


# Motor Switches



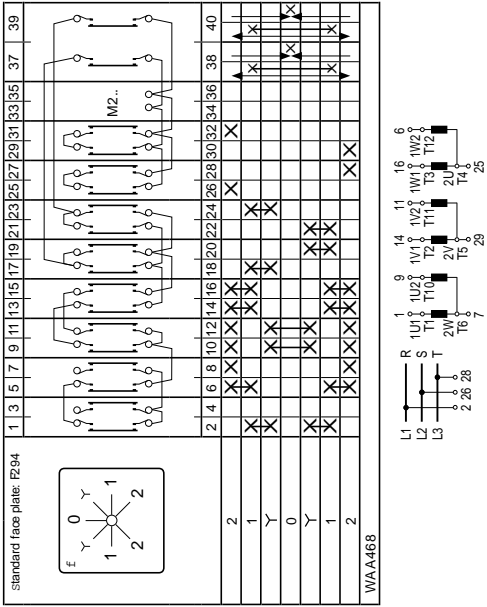
WAA457 Motor Control Switch  
 (formerly A457) 3 speed, 2 winding  
 0 - AΔ - BY - AY

# Motor Switches



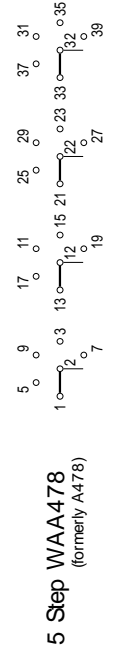
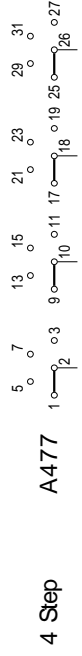
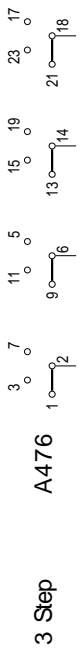
A466 2 speed, single winding without „OFF“  
 $\Delta$  -  $\overline{A}$   $\overline{Y}$

# Motor Switches



**WAA468 Motor Control Switch**  
 (formerly A468) 2 speed reversing for 2 way operation  
 with slip clutch for „OFF“ load use

# Multi-step Switches 4 pole without „OFF“



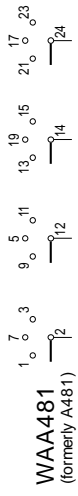
Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.

# Multi-step Switches 4 pole with „OFF“

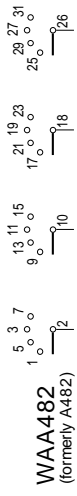
## 2 Step



## 3 Step



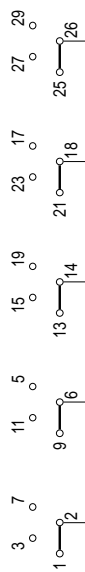
## 4 Step



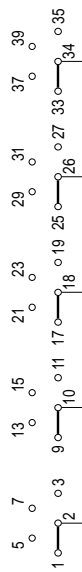
Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.



# Multi-step Switches 5 pole without „OFF“



**3 Step WAA484**  
(formerly A484)



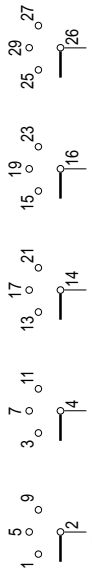
**4 Step WAA485**  
(formerly A485)

Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate.

# Multi-step Switches 5 pole with „OFF“



**2 Step WAA486**  
(formerly A486)

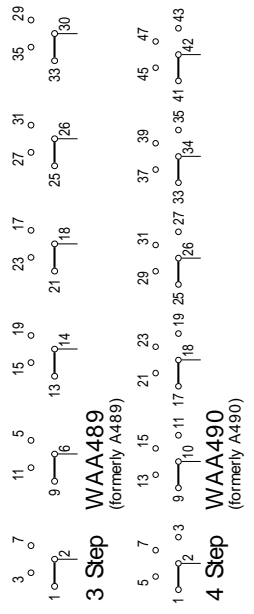


**3 Step WAA487**  
(formerly A487)

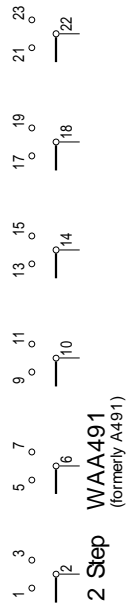
Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate

# Multi-step Switches 6 pole

without „OFF“

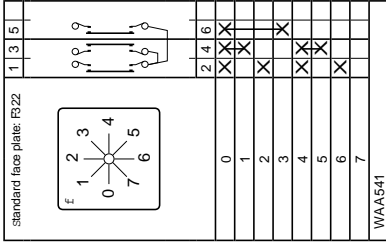


with „OFF“

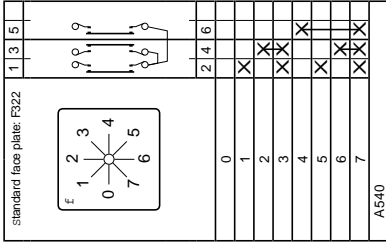


Numbers shown at the connection points on the above diagrams, correspond to the terminal numbers on the switch. The position of connection points correspond to the positions indicated on the face plate

# Coding Switches/ Binary Code

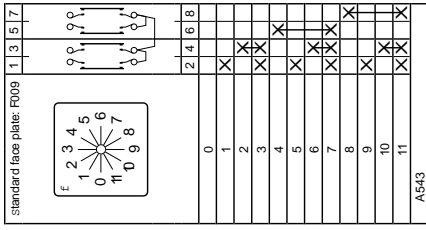


WAA541 0-7+complement  
(formerly A541)

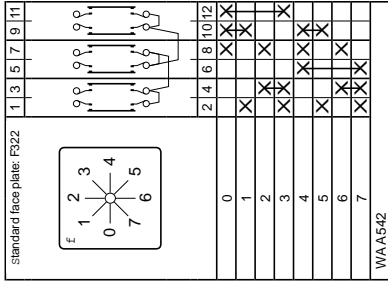


A540 0-7

# Coding Switches/ Binary Code

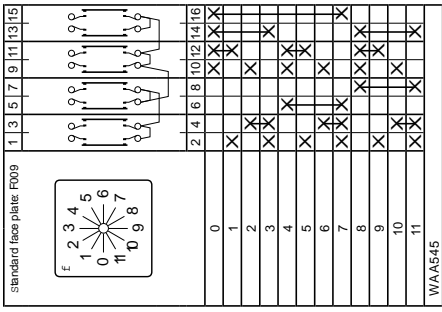


A543 0-11

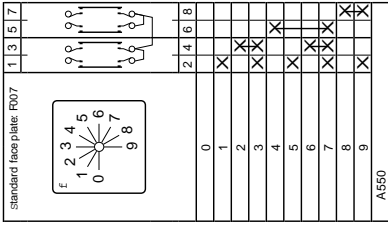


WAA542 0-7 + complement  
(formerly A542)

# Coding Switches/ Binary Code

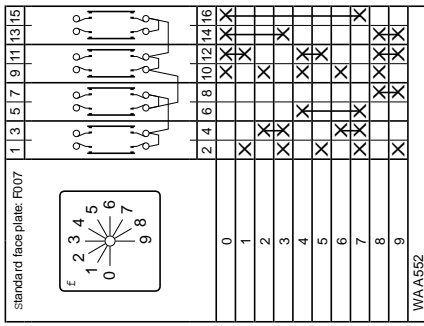


**WAA545 0-11 +complement**  
(formerly A545)

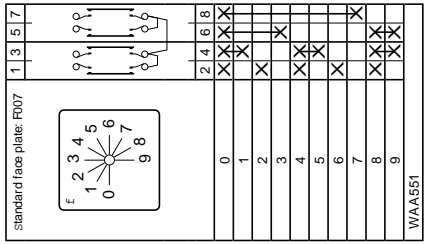


**A550 0-9**

# Coding Switches/ BCD-Code

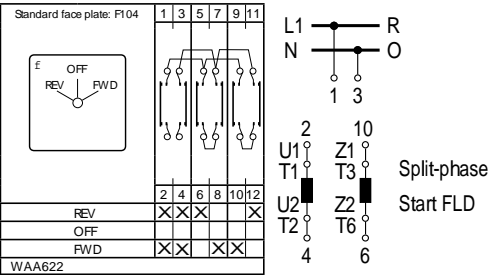


**WAA552 0-9+complement**  
(formerly A552)



**WAA551 0-9**  
(formerly A551)

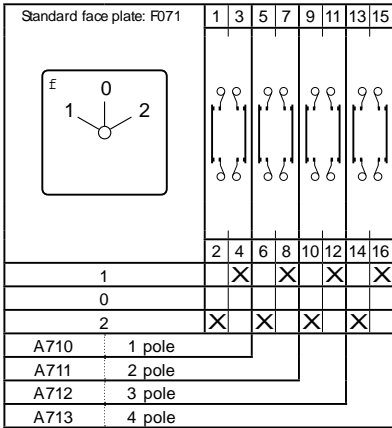
# Motor Switches



WAA622 (formerly A622) Start and Run Switch  
 Split-phase reversing  
 auto cutout of start  
 field winding

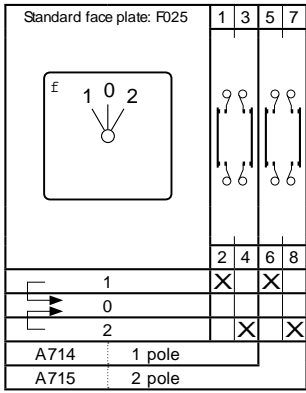


# Double-throw Switches with electrically isolated contacts



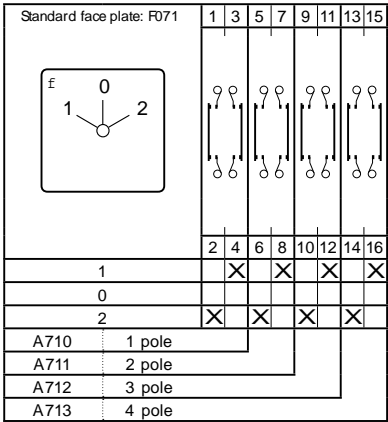
A710 up to A713 Double-throw Switch with „OFF“, 60° Switching

# Double-throw Switches with electrically isolated contacts



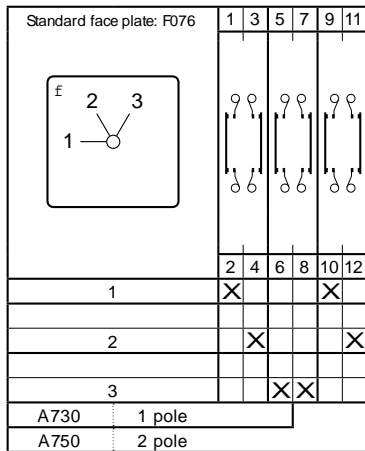
A714 up to A715 Double-throw Switch with „OFF“ with spring return to center, 30° Switching

# Double-throw Switches with electrically isolated contacts



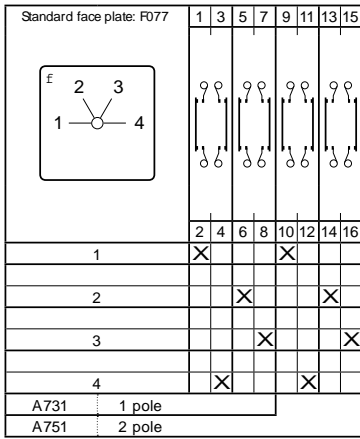
A720 up to A723  
 Double-throw Switch without „OFF“,  
 60° Switching

# Multi-step Switch with electrically isolated contacts



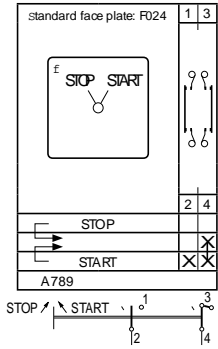
A730, A750  
Multi-step Switch without „OFF“, 3 Positions

# Multi-step Switch with electrically isolated contacts

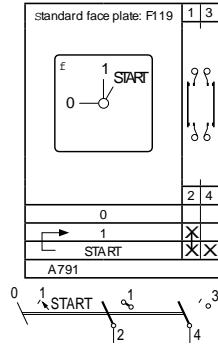


A731, A751  
Multi-step Switch without „OFF“, 4 Positions

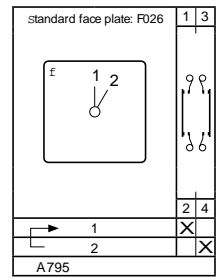
# Control Switch with electrically isolated contacts



A789 Stop start switch

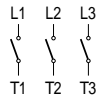


A791 Stop start switch with spring return from start to run



A795 Double-throw Switch without „OFF“, 1 pole with spring return

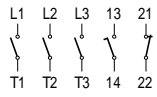
## Main Switches of KG-, KH- and KF-series



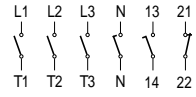
3 pole



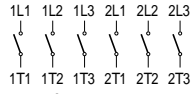
4 pole (3+N)



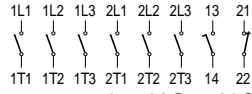
3 pole, 1NO+1NC



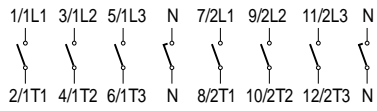
4 pole, 1NO+1NC



6 pole

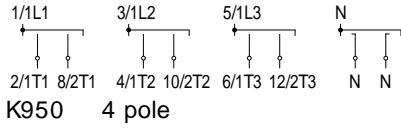
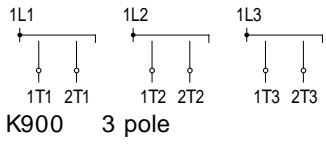


6 pole, 1NO+1NC



8 pole

Double-throw Switches with „OFF“  
of KG-, KH- and KF-series











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Switch Wiring Diagrams as App:

