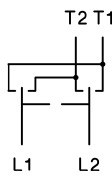
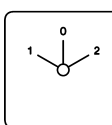
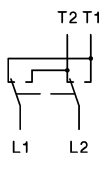
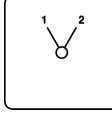
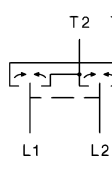
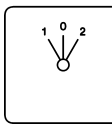
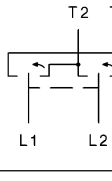
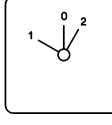
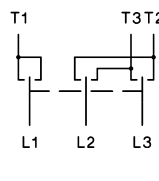
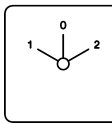
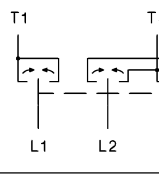
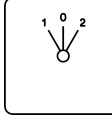
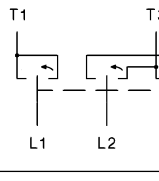
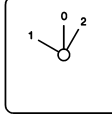


## Switching programs

Description	Wiring diagram	Switching angle	Number of cells ↓ Size ↓ AC21	Type	Design see page 6-8 E. Z. V. SMA. P. G.	Switch pro- gram	Escutcheon plate
<b>Reversing switches WU</b>							
2-pole		60°	2	48 □ 20A	M10H . x x x x x <sup>1)</sup> - . WU2	. WU2	
				32A	M20 . x x x x - - . WU2		
				64 □ 32A	N20 . x - x - x x . WU2		
				50A	N33F . x x x - x - . WU2		
				88 □ 63A	N40 . x - x - x - . WU2		
80A	N60 . x - x - x - . WU2						
115A	N80 . x - x - - - . WU2						
132 □ 150A	N100 . x - x - - - . WU2						
250A	N200 . x - x - - - . WU2						
2-pole without off cross switch		60°	2	48 □ 20A	M10H . x x x x x <sup>1)</sup> - . WK2	. WK2	
				32A	M20 . x x x x - - . WK2		
				64 □ 32A	N20 . x - x - x x . WK2		
				50A	N33F . x x x - x - . WK2		
				88 □ 63A	N40 . x x - x - . WK2		
80A	N60 . x - x - x - . WK2						
115A	N80 . x - x - - - . WK2						
132 □ 150A	N100 . x - x - - - . WK2						
250A	N200 . x - x - - - . WK2						
2-pole with spring return from both sides to off		30°	2	48 □ 20A	M10H . x x x x x <sup>1)</sup> - . WU2R2	. WU2R2	
				32A	M20 . x x x x - - . WU2R2		
				64 □ 32A	N20 . x - x - x x . WU2R2		
50A	N33F . x x x - x - . WU2R2						
88 □ 63A	N40 . x - x - x - . WU2R2						
2-pole position 1 latched position 2 with spring return to off		60°+30°	2	48 □ 20A	M10H . x x x x x <sup>1)</sup> - . WU2R1	. WU2R1	
				32A	M20 . x x x x - - . WU2R1		
				64 □ 32A	N20 . x - x - x x . WU2R1		
50A	N33F . x x x - x - . WU2R1						
88 □ 63A	N40 . x - x - x - . WU2R1						
3-pole		60°	3	48 □ 20A	M10H . x x x x x <sup>1)</sup> - . WU3	. WU3	
				32A	M20 . x x x x - - . WU3		
				64 □ 32A	N20 . x - x - x x . WU3		
				50A	N33F . x x x - x - . WU3		
				88 □ 63A	N40 . x - x - x - . WU3		
80A	N60 . x - x - x - . WU3						
115A	N80 . x - x - - - . WU3						
132 □ 150A	N100 . x - x - - - . WU3						
250A	N200 . x - x - - - . WU3						
3-pole with spring return from both sides to off		30°	3	48 □ 20A	M10H . x x x x x <sup>1)</sup> - . WU3R2	. WU3R2	
				32A	M20 . x x x x - - . WU3R2		
				64 □ 32A	N20 . x - x - x x . WU3R2		
50A	N33F . x x x - x - . WU3R2						
88 □ 63A	N40 . x - x x - . WU3R2						
3-pole position 1 latched position 2 with spring return to off		60°+30°	3	48 □ 20A	M10H . x x x x x <sup>1)</sup> - . WU3R1	. WU3R1	
				32A	M20 . x x x x - - . WU3R1		
				64 □ 32A	N20 . x - x - x x . WU3R1		
50A	N33F . x - x - x - . WU3R1						
88 □ 63A	N40 . x - x - x - . WU3R1						

**Ordering example:** AC21 63A base mounting, reversing switch 3-pole, position 2 with spring to off N40 V WU3R1

1) Plastic enclosed switches are delivered with switch type M10.

## Switching programs

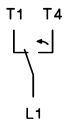
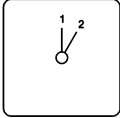
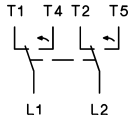
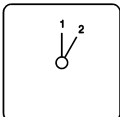
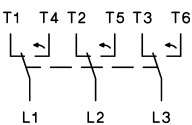
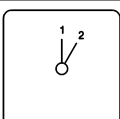
Description	Wiring diagram	Switching angle	Number of cells ↓ Size ↓ AC21	Type	Design see page 6-8 E. Z. V. SMA. P. G.	Switch pro- gram	Escutcheon plate
for starting up single-phase motors with split-phase, spring return from START to Off		30°+60°	2 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . HP1 M20 . x x x x - - . HP1			
			64 □ 32A	N20 . x - x - x x . HP1 N33F . x - x - x - . HP1			
			88 □ 63A	N40 . x - x - x - . HP1			
for starting up single-phase motors with split-phase, spring return from START to 1		90°+30°	2 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . HP2 M20 . x x x x - - . HP2			
			64 □ 32A	N20 . x - x - x x . HP2 N33F . x - x - x - . HP2			
			88 □ 63A	N40 . x - x - x - . HP2			
for starting up single-phase motors with split-phase, both rotary directions		60°+30°	3 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . HPR1 M20 . x x x x - - . HPR1			
			64 □ 32A	N20 . x - x - x x . HPR1 N33F . x - x - x - . HPR1			
			88 □ 63A	N40 . x - x - x - . HPR1			
as type HPR1 with starting and phase-shifting capacitor		60°+30°	4 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . HPR2 M20 . x x x x - - . HPR2			
			64 □ 32A	N20 . x - x - x x . HPR2 N33F . x - x - x - . HPR2			
			88 □ 63A	N40 . x - x - x - . HPR2			

Ordering example: AC21 63A panel mounting, split phase switch, both rotary directions


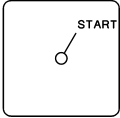
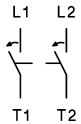
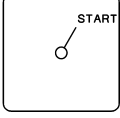
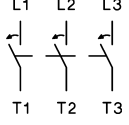
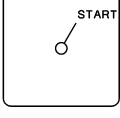
N40 E HPR1

1) Plastic enclosed switches are delivered with switch type M10.

## Switching programs

Description	Wiring diagram	Switching angle	Number of cells ↓ Size ↓ AC21	Type	Design see page 6-8 E. Z. V. SMA. P. G.	Switch pro- gram	Escutcheon plate
<b>Double throw switches with spring return to off WR</b>							
<b>1-pole</b>		30°	1 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . W1R			
			32A	M20 . x x x x - - . W1R			
			64 □ 32A	N20 . x - x - x x . W1R			
50A	N33F . x - x - x - . W1R						
88 □ 63A	N40 . x - x - x - . W1R						
<b>2-pole</b>		30°	2 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . W2R			
			32A	M20 . x x x x - - . W2R			
			64 □ 32A	N20 . x - x - x x . W2R			
50A	N33F . x - x - x - . W2R						
88 □ 63A	N40 . x - x - x - . W2R						
<b>3-pole</b>		30°	3 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . W3R			
			32A	M20 . x x x x - - . W3R			
			64 □ 32A	N20 . x - x - x x . W3R			
50A	N33F . x - x - x - . W3R						
88 □ 63A	N40 . x - x - x - . W3R						

## Start-Stop switches S

<b>Start-switch, 1-pole</b>		30°	1 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . SE			
			32A	M20 . x x x x - - . SE			
			64 □ 32A	N20 . x - x - x x . SE			
50A	N33F . x - x - x - . SE						
<b>Start-switch, 2-pole</b>		30°	1 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . S2E			
			32A	M20 . x x x x - - . S2E			
			64 □ 32A	N20 . x - x - x x . S2E			
50A	N33F . x - x - x - . S2E						
<b>Start-switch, 3-pole</b>		30°	2 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . S3E			
			32A	M20 . x x x x - - . S3E			
			64 □ 32A	N20 . x - x - x x . S3E			
50A	N33F . x - x - x - . S3E						

**Bestellbeispiel:** AC21 50A base mounting, Start-switch, 3-pole

**N33F V S3E**

1) Plastic enclosed switches are delivered with switch type M10.

## Switching programs

Description	Wiring diagram	Switching angle	Number of cells ↓ Size ↓ <b>AC21</b>	Type	Design see page 6-8 <b>E. Z. V. SMA. P. G.</b>	Switch pro- gram	Escutcheon plate
<b>Start-Stop switches S</b>							
<b>Stop-switch, 1-pole</b>		30°	1 48 □ 20A 32A 64 □ 32A 50A 88 □ 63A	<b>M10H</b> . x x x x x <sup>1)</sup> - <b>M20</b> . x x x x - - <b>N20</b> . x - x - x x <b>N33F</b> . x - x - x - <b>N40</b> . x - x - x -	. SA . SA . SA . SA . SA		
<b>Stop-switch, 2-pole</b>		30°	1 48 □ 20A 32A 64 □ 32A 50A 88 □ 63A	<b>M10H</b> . x x x x x <sup>1)</sup> - <b>M20</b> . x x x x - - <b>N20</b> . x - x - x x <b>N33F</b> . x - x - x - <b>N40</b> . x - x - x -	. S2A . S2A . S2A . S2A . S2A		
<b>Stop-switch, 3-pole</b>		30°	2 48 □ 20A 32A 64 □ 32A 50A 88 □ 63A	<b>M10H</b> . x x x x x <sup>1)</sup> - <b>M20</b> . x x x x - - <b>N20</b> . x - x - x x <b>N33F</b> . x - x - x - <b>N40</b> . x - x - x -	. S3A . S3A . S3A . S3A . S3A		
<b>Start-Stop-switch, 1-pole</b>		30°	1 48 □ 20A 32A 64 □ 32A 50A	<b>M10H</b> . x x x x x <sup>1)</sup> - <b>M20</b> . x x x x - - <b>N20</b> . x - x - x x <b>N33F</b> . x - x - x -	. SEA . SEA . SEA . SEA		
<b>Start-Stop-switch, 1-pole position START with spring return to 1</b>		90°+30°	1 48 □ 20A 32A 64 □ 32A 50A	<b>M10H</b> . x x x x x <sup>1)</sup> - <b>M20</b> . x x x x - - <b>N20</b> . x - x - x x <b>N33F</b> . x - x - x -	. S392 . S392 . S392 . S392		
<b>Start-Stop-switch, 1-pole for reversing contactors</b>		60°+30°	2 48 □ 20A 32A 64 □ 32A 50A	<b>M10H</b> . x x x x x <sup>1)</sup> - <b>M20</b> . x x x x - - <b>N20</b> . x - x - x x <b>N33F</b> . x - x - x -	. S2EA . S2EA . S2EA . S2EA		
<b>Start-Stop-switch, 1-pole for reversing contactors with limit switches</b>		30°	2 48 □ 20A 32A 64 □ 32A 50A	<b>M10H</b> . x x x x x <sup>1)</sup> - <b>M20</b> . x x x x - - <b>N20</b> . x - x - x x <b>N33F</b> . x - x - x -	. S22 . S22 . S22 . S22		

**Ordering example:** AC21 50A panel mounting, Start-Stop-switch, 1-pole for reversing contactors

**N33F E S2EA**

1) Plastic enclosed switches are delivered with switch type M10.

## Switching programs

Description	Wiring diagram	Switching angle	Number of cells ↓ Size ↓ <b>AC21</b>	Type	Design see page 6-8 <b>E. Z. V. SMA. P. G.</b>	Switch pro- gram	Escutcheon plate		
<b>Gang switches GR</b>									
<b>2 circuits A and B</b> <b>1-pole</b> <b>0 - A - A+B</b>  		45°	1 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . GR11 M20 . x x x x - - . GR11	. GR11 GR11	. GR11 GR11			
			64 □ 32A	N20 . x - x - x x . GR11 N33F . x x x - x - . GR11				+126	
			88 □ 63A	N40 . x - x - x - . GR11 N60 . x - x - x - . GR11 N80 . x - x - - - . GR11					
			132 □ 150A	N100 . x - x - - - . GR11 N200 . x - x - - - . GR11					
<b>2 circuits A and B</b> <b>1-pole</b> <b>0 - A - B - A+B</b>  		45°	1 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . GR12 M20 . x x x x - - . GR12	. GR12 GR12	. GR12 GR12			
			64 □ 32A	N20 . x - x - x x . GR12 N33F . x x x - x - . GR12				+127	
			88 □ 63A	N40 . x - x - x - . GR12 N60 . x - x - x - . GR12 N80 . x - x - - - . GR12					
			132 □ 150A	N100 . x - x - - - . GR12 N200 . x - x - - - . GR12					
<b>2 circuits A and B</b> <b>2-pole</b> <b>0 - A - A+B</b>  		45°	2 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . GR21 M20 . x x x x - - . GR21	. GR21 GR21	. GR21 GR21			
			64 □ 32A	N20 . x - x - x x . GR21 N33F . x x x - x - . GR21				+126	
			88 □ 63A	N40 . x - x - x - . GR21 N60 . x - x - x - . GR21 N80 . x - x - - - . GR21					
			132 □ 150A	N100 . x - x - - - . GR21 N200 . x - x - - - . GR21					
<b>2 circuits A and B</b> <b>2-pole</b> <b>0 - A - B - A+B</b>  		45°	2 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . GR22 M20 . x x x x - - . GR22	. GR22 GR22	. GR22 GR22			
			64 □ 32A	N20 . x - x - x x . GR22 N33F . x x x - x - . GR22				+127	
			88 □ 63A	N40 . x - x - x - . GR22 N60 . x - x - x - . GR22 N80 . x - x - - - . GR22					
			132 □ 150A	N100 . x - x - - - . GR22 N200 . x - x - - - . GR22					
<b>2 circuits A and B</b> <b>3-pole</b> <b>0 - A - A+B</b>  		45°	3 48 □ 20A	M10H . x x x x x <sup>1)</sup> - . GR31 M20 . x x x x - - . GR31	. GR31 GR31	. GR31 GR31			
			64 □ 32A	N20 . x - x - x x . GR31 N33F . x - x - x - . GR31				+126	
			88 □ 63A	N40 . x - x - x x . GR31 N60 . x - x - x - . GR31 N80 . x - x - - - . GR31					
			132 □ 150A	N100 . x - x - - - . GR31 N200 . x - x - - - . GR31					

Ordering example: AC21 250A panel mounting, gang switch, 2 circuits A and B, 3-pole

**N200 E GR31**

1) Plastic enclosed switches are delivered with switch type M10.

## Switching programs

Description	Wiring diagram	Switching angle	Number of cells ↓ Size ↓ AC21	Type	Design see page 6-8 E. Z. V. SMA. P. G.	Switch pro- gram	Escutcheon plate
<b>2 circuits A and B</b> <b>3-pole</b> <b>0 - A - B - A+B</b>  		45°	3 48 □ 20A 32A  64 □ 32A 50A  88 □ 63A 80A 115A  132 □ 150A 250A	<b>M10H</b> . x x x x x <sup>1)</sup> - . GR32 <b>M20</b> . x x x x - - . GR32  <b>N20</b> . x - x - x x . GR32 <b>N33F</b> . x - x - x - . GR32  <b>N40</b> . x - x - x - . GR32 <b>N60</b> . x - x - x - . GR32 <b>N80</b> . x - x - - - . GR32  <b>N100</b> . x - x - - - . GR32 <b>N200</b> . x - x - - - . GR32			
<b>3 circuits A, B and C</b> <b>1-pole</b> <b>0 - A - A+B - A+B+C</b>  		45°	2 48 □ 20A 32A  64 □ 32A 50A  88 □ 63A 80A 115A  132 □ 150A 250A	<b>M10H</b> . x x x x x <sup>1)</sup> - . GR14 <b>M20</b> . x x x x - - . GR14  <b>N20</b> . x - x - x x . GR14 <b>N33F</b> . x - x - x - . GR14  <b>N40</b> . x - x - x - . GR14 <b>N60</b> . x - x - x - . GR14 <b>N80</b> . x - x - - - . GR14  <b>N100</b> . x - x - - - . GR14 <b>N200</b> . x - x - - - . GR14			
<b>3 circuits A, B and C</b> <b>2-pole</b> <b>0 - A - A+B - A+B+C</b>  		45°	3 48 □ 20A 32A  64 □ 32A 50A  88 □ 63A 80A 115A  132 □ 150A 250A	<b>M10H</b> . x x x x x <sup>1)</sup> - . GR23 <b>M20</b> . x x x x - - . GR23  <b>N20</b> . x - x - x x . GR23 <b>N33F</b> . x - x - x - . GR23  <b>N40</b> . x - x - x - . GR23 <b>N60</b> . x - x - x - . GR23 <b>N80</b> . x - x - - - . GR23  <b>N100</b> . x - x - - - . GR23 <b>N200</b> . x - x - - - . GR23			
<b>3 circuits A, B and C</b> <b>3-pole</b> <b>0 - A - A+B - A+B+C</b>  		45°	5 48 □ 20A 32A  64 □ 32A 50A  88 □ 63A 80A 115A  132 □ 150A 250A	<b>M10H</b> . x x x x x <sup>1)</sup> - . GR33 <b>M20</b> . x x x x - - . GR33  <b>N20</b> . x - x - x x . GR33 <b>N33F</b> . x - x - x - . GR33  <b>N40</b> . x - x - x - . GR33 <b>N60</b> . x - x - x - . GR33 <b>N80</b> . x - x - - - . GR33  <b>N100</b> . x - x - - - . GR33 <b>N200</b> . x - x - - - . GR33			

**Ordering example:** AC21 250A panel mounting, gang switch, 3 circuits A, B and C, 3-pole **N200 E GR33**

1) Plastic enclosed switches are delivered with switch type M10.

## Switching programs

Description	Wiring diagram	Switching angle	Number of cells ↓ Size ↓ <b>AC21</b>	Type	Design see page 6-8 <b>E. Z. V. SMA. P. G.</b>	Switch pro- gram	Escutcheon plate		
<b>Series-Parallel switches SP</b>									
<b>2 circuits A and B</b> <b>2-pole</b> 0 - A + B - A,B (parallel)		45°	2	48 □ 20A	<b>M10H</b> . x x x x x <sup>1)</sup> - . SP1	. SP1			
				32A	<b>M20</b> . x x x x - - . SP1			+126	
				64 □ 32A	<b>N20</b> . x - x - x x . SP1				
				50A	<b>N33F</b> . x x x - x - . SP1				
88 □ 63A 80A 115A		45°	2	132 □ 150A	<b>N100</b> . x - x - - - . SP1	. SP1			
				250A	<b>N200</b> . x - x - - - . SP1				
<b>2 circuits A and B</b> <b>2-pole</b> 0 - A,B (parall.) - A - A+B		90°	3	48 □ 20A	<b>M10H</b> . x x x x x <sup>1)</sup> - . SP4	. SP4			
				32A	<b>M20</b> . x x x x - - . SP4				
				64 □ 32A	<b>N20</b> . x - x - x x . SP4				
				50A	<b>N33F</b> . x x x - x - . SP4				
88 □ 63A 80A 115A		90°	3	132 □ 150A	<b>N100</b> . x - x - - - . SP4	. SP4			
				250A	<b>N200</b> . x - x - - - . SP4				
<b>2 circuits A and B</b> <b>for 3-phase systems</b> 0 - A+B - A - B - A,B		30°	2	48 □ 20A	<b>M10H</b> . x x x x x <sup>1)</sup> - . SP3	. SP3			
				32A	<b>M20</b> . x x x x - - . SP3				
				64 □ 32A	<b>N20</b> . x - x - x x . SP3				
				50A	<b>N33F</b> . x x x - x - . SP3				
88 □ 63A 80A 115A		30°	2	132 □ 150A	<b>N100</b> . x - x - - - . SP3	. SP3			
				250A	<b>N200</b> . x - x - - - . SP3				

**Ordering example:** AC21 250A panel mounting, series-parallel switch, 2 circuits for 3-phase systems **N200 E SP3**

1) Plastic enclosed switches are delivered with switch type M10.