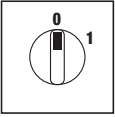

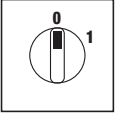

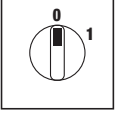

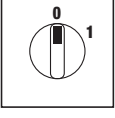
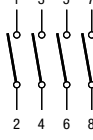
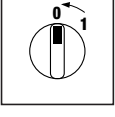
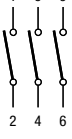
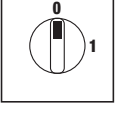

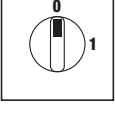
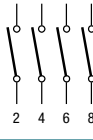

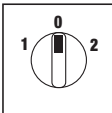
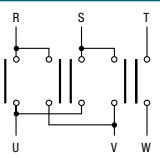
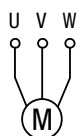
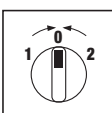
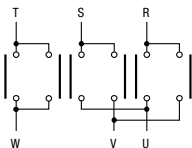
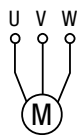
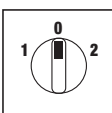
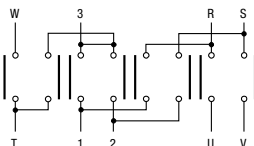
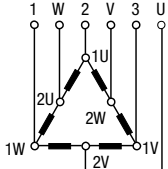
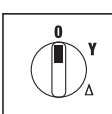
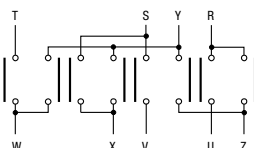
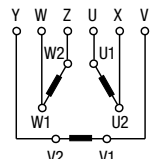
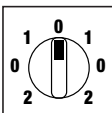
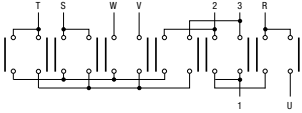
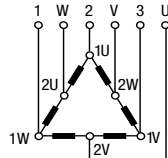


Circuit diagrams


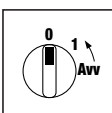
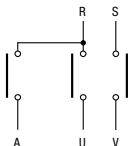
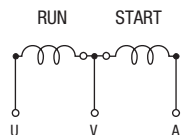
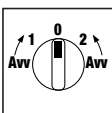
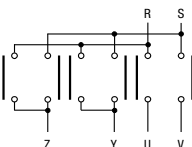
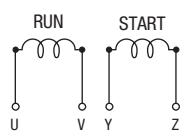
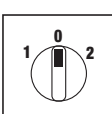
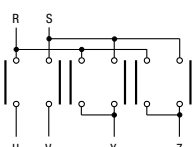
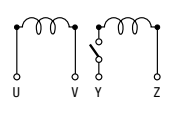
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	0002	ON-OFF switch 2 poles		<table border="1"> <tr> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td>CR</td> <td>60°</td> </tr> <tr> <td></td> <td>1</td> <td>X</td> <td>X</td> <td></td> <td>CA</td> <td>90°</td> </tr> <tr> <td>Contact</td> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>CQ</td> </tr> <tr> <td>Element</td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td>Angle</td> </tr> </table>		0				CR	60°		1	X	X		CA	90°	Contact		1	2	3	4	CQ	Element		1				Angle	1							
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	00G3	ON-OFF switch 3 poles with padlockable handle		<table border="1"> <tr> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td>CR</td> <td>90°</td> </tr> <tr> <td></td> <td>1</td> <td>X</td> <td>X</td> <td>X</td> <td>CA</td> <td>90°</td> </tr> <tr> <td>Contact</td> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> </tr> <tr> <td>Element</td> <td></td> <td>1</td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td>Angle</td> </tr> </table>		0				CR	90°		1	X	X	X	CA	90°	Contact		1	2	3	4	5	6	7	8	Element		1		2					Angle	2	
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	0005	Change-over switch 1 pole		<table border="1"> <tr><td></td><td>2</td><td></td><td>×</td><td></td><td>CR</td><td>60°</td></tr> <tr><td></td><td>0</td><td></td><td></td><td></td><td>CA</td><td></td></tr> <tr><td></td><td>1</td><td></td><td>×</td><td></td><td>CQ</td><td>45°</td></tr> <tr><td>Contact</td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>Angle</td></tr> <tr><td>Element</td><td></td><td>1</td><td></td><td></td><td></td><td></td></tr> </table>		2		×		CR	60°		0				CA			1		×		CQ	45°	Contact		1	2	3	4	Angle	Element		1					1																																								
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	0039	Change-over switch 4 poles		<table border="1"> <tr><td></td><td>2</td><td></td><td>×</td><td></td><td>×</td><td></td><td>×</td><td></td><td>×</td><td>CR</td><td>60°</td></tr> <tr><td></td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>CA</td><td></td></tr> <tr><td></td><td>1</td><td></td><td>×</td><td></td><td>×</td><td></td><td>×</td><td></td><td>×</td><td>CQ</td><td>45°</td></tr> <tr><td>Contact</td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>Angle</td></tr> <tr><td>Element</td><td></td><td>1</td><td></td><td>2</td><td></td><td>3</td><td></td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>		2		×		×		×		×	CR	60°		0									CA			1		×		×		×		×	CQ	45°	Contact		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Angle	Element		1		2		3		4											4	
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Motor control switches 3 phase

plate	scheme	function	circuit diagram	contact/element description	 element no.																																																																																																						
	0008	Reversing switch 3 poles		<table border="1"> <tr><td>2</td><td></td><td>XX</td><td>XX</td><td></td><td>CR</td><td>60°</td></tr> <tr><td>0</td><td></td><td></td><td></td><td></td><td>CA</td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td><td></td><td>CQ</td><td>45°</td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	2		XX	XX		CR	60°	0					CA		1					CQ	45°	Contact	1	2	3	4	5	6	7	8	9	10	11	12	Angle	Element	1	2	3											 3																																																					
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	0036	Reversing switch 3 poles with spring return to "off"		<table border="1"> <tr><td>2</td><td></td><td>XX</td><td>XX</td><td></td><td>CR</td><td>45°</td></tr> <tr><td>0</td><td></td><td></td><td></td><td></td><td>CA</td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td><td></td><td>CQ</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	2		XX	XX		CR	45°	0					CA		1					CQ		Contact	1	2	3	4	5	6	7	8	9	10	11	12	Angle	Element	1	2	3											 3																																																					
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	0009	Changing switch Dahlander pole		<table border="1"> <tr><td>2</td><td>X</td><td>XX</td><td>XX</td><td>XX</td><td>CR</td><td>60°</td></tr> <tr><td>0</td><td></td><td></td><td></td><td></td><td>CA</td><td></td></tr> <tr><td>1</td><td></td><td>X</td><td>XX</td><td>XX</td><td>CQ</td><td>45°</td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	2	X	XX	XX	XX	CR	60°	0					CA		1		X	XX	XX	CQ	45°	Contact	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Angle	Element	1	2	3	4														 4																																													
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	0010	STAR-DELTA Starter		<table border="1"> <tr><td>Δ</td><td>XX</td><td>XX</td><td>XX</td><td>XX</td><td>CR</td><td>60°</td></tr> <tr><td>Y</td><td>XX</td><td>XX</td><td>XX</td><td>XX</td><td>CA</td><td></td></tr> <tr><td>0</td><td></td><td></td><td></td><td></td><td>CQ</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	Δ	XX	XX	XX	XX	CR	60°	Y	XX	XX	XX	XX	CA		0					CQ		Contact	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Angle	Element	1	2	3	4														 4																																													
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	0011	Reversing switch Poles changing		<table border="1"> <tr><td>2</td><td>X</td><td>XX</td><td>XX</td><td>XX</td><td>CR</td><td></td></tr> <tr><td>0</td><td></td><td></td><td></td><td></td><td>CA</td><td>45°</td></tr> <tr><td>1</td><td>X</td><td>X</td><td>XX</td><td>XX</td><td>CQ</td><td></td></tr> <tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>1</td><td>XX</td><td></td><td>XX</td><td>XX</td><td></td><td></td></tr> <tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2</td><td>XX</td><td>XX</td><td>XX</td><td>XX</td><td></td><td></td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	2	X	XX	XX	XX	CR		0					CA	45°	1	X	X	XX	XX	CQ		0							1	XX		XX	XX			0							2	XX	XX	XX	XX			Contact	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Angle	Element	1	2	3	4	5	6																					 6
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

Motor control switches single phase

plate	scheme	function	circuit diagram	contact/element description	 element no.																																																				
	0031	Reversing switch Poles changing		<table border="1"> <tr><td>Avv</td><td>X</td><td>XX</td><td>XX</td><td>CR</td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td><td>CA</td><td>45°</td></tr> <tr><td>0</td><td></td><td></td><td></td><td>CQ</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	Avv	X	XX	XX	CR		1				CA	45°	0				CQ		Contact	1	2	3	4	5	6	7	8	Angle	Element	1	2								 2														
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Contact	1	2	3	4	5	6	7	8	Angle																																																
Element	1	2																																																							
	0032	Reversing Switch single-phase motor + aux phase		<table border="1"> <tr><td>Avv</td><td>XX</td><td>XX</td><td>XX</td><td>CR</td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td><td>CA</td><td>45°</td></tr> <tr><td>0</td><td></td><td></td><td></td><td>CQ</td><td></td></tr> <tr><td>Avv</td><td>X</td><td>XX</td><td>XX</td><td></td><td></td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	Avv	XX	XX	XX	CR		1				CA	45°	0				CQ		Avv	X	XX	XX			Contact	1	2	3	4	5	6	7	8	9	10	11	12	Angle	Element	1	2	3											 3
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	0034	Reversing Switch single-phase motor + centrif.		<table border="1"> <tr><td>2</td><td>XX</td><td>XX</td><td>XX</td><td>CR</td><td></td></tr> <tr><td>0</td><td></td><td></td><td></td><td>CA</td><td>45°</td></tr> <tr><td>1</td><td>XX</td><td>XX</td><td>XX</td><td>CQ</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>Angle</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	2	XX	XX	XX	CR		0				CA	45°	1	XX	XX	XX	CQ		Contact	1	2	3	4	5	6	7	8	9	10	11	12	Angle	Element	1	2	3											 3						
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Voltmeter & Ammeter switches																																																																																														
plate	scheme	function	circuit diagram	contact/element description		element no.																																																																																								
	0016	Voltmeter switch 3 concatenated voltages		<table border="1"> <tr> <td>L3-L1</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td>CR</td> <td rowspan="3">45°</td> </tr> <tr> <td>L2-L3</td> <td></td> <td></td> <td>X</td> <td>X</td> <td></td> <td>CA</td> </tr> <tr> <td>L1-L2</td> <td>X</td> <td></td> <td></td> <td>X</td> <td></td> <td>CQ</td> </tr> <tr> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contact</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>Angle</td> </tr> <tr> <td>Element</td> <td colspan="2">1</td> <td colspan="2">2</td> <td colspan="3"></td> <td></td> <td></td> </tr> </table>	L3-L1	X	X				CR	45°	L2-L3			X	X		CA	L1-L2	X			X		CQ	0								Contact	1	2	3	4	5	6	7	8	Angle	Element	1		2								2																																						
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	0018	Voltmeter switch 3 concatenated voltages and 3 phase voltages		<table border="1"> <tr> <td>L3-N</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>CR</td> <td rowspan="3">45°</td> </tr> <tr> <td>L2-N</td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td>CA</td> </tr> <tr> <td>L1-N</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>CQ</td> </tr> <tr> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L1-L2</td> <td></td> <td></td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L2-L3</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L3-L1</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>Contact</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> <td>Angle</td> </tr> <tr> <td>Element</td> <td colspan="2">1</td> <td colspan="2">2</td> <td colspan="3">3</td> <td colspan="5"></td> </tr> </table>	L3-N	X						CR	45°	L2-N			X				CA	L1-N					X	X	CQ	0									L1-L2			X	X					L2-L3	X	X							L3-L1	X					X			Contact	1	2	3	4	5	6	7	8	9	10	11	12	Angle	Element	1		2		3									3
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	0022	Ammeter switch 1 pole 3 current transformers		<table border="1"> <tr> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>CR</td> <td rowspan="3">90°</td> </tr> <tr> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>CA</td> </tr> <tr> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>CQ</td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>0</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contact</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> <td>Angle</td> </tr> <tr> <td>Element</td> <td colspan="2">1</td> <td colspan="2">2</td> <td colspan="3">3</td> <td colspan="5"></td> </tr> </table>			X	X	X	X		CR	90°			X	X	X	X		CA			X	X	X	X		CQ	3									2									1									0		X	X	X	X				Contact	1	2	3	4	5	6	7	8	9	10	11	12	Angle	Element	1		2		3									3
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Cam switches

International standards and approvals

Country	Authority	Mark of standard	CA012 CA016 CA020	CA025 CA032 CA040	CA050 CA063	CA100 CA200	CQ012 CQ016	CQ032 CQ025	CR012 CR016 CR020	CR025 CR032 CR040
USA / Canada	UL investigated according to CSA	 1	•	•	•	•	•		•	•
		 1				•				
Canada	CSA International	 2	•	•	•	•	•			
Germany	Verband Deutscher Elektrotechniker	VDE 0660 3	+	+	+	+	+	+	+	+
Switzerland	Schweizerischer Elektrotechnischer Verein		+	+	+	+	+	+	+	+
Denmark	Danmarks Elektriske Materielkontrol		+	+	+	+	+	+	+	+
Norway	Norges Elektriske Materielkontrol		+	+	+	+	+	+	+	+
Sweden	Svenska Elektriske Materielkontroll- anstalten		+	+	+	+	+	+	+	+
Finland	Sähötar- kastuskeskus		+	+	+	+	+	+	+	+
Austria	Österreichischer Verband für Elektrotechnik		+	+	+	+	+	+	+	+
Great Britain	British Standards Istitution	BS EN 60947 3	+	+	+	+	+	+	+	+
IEC International electrical Commission		IEC 60947 4	+	+	+	+	+	+	+	+
Russian Federation	GOST		•	•	•	•	•	•	+	+

- Approved
- + conforms to requirements

Note:

- 1) UL Approval File E101686
- 2) CSA Approval File 039540-0-000
- 3) It is not required to bear a symbol but switches must conform to requirements.
- 4) IEC does not operate an approval scheme