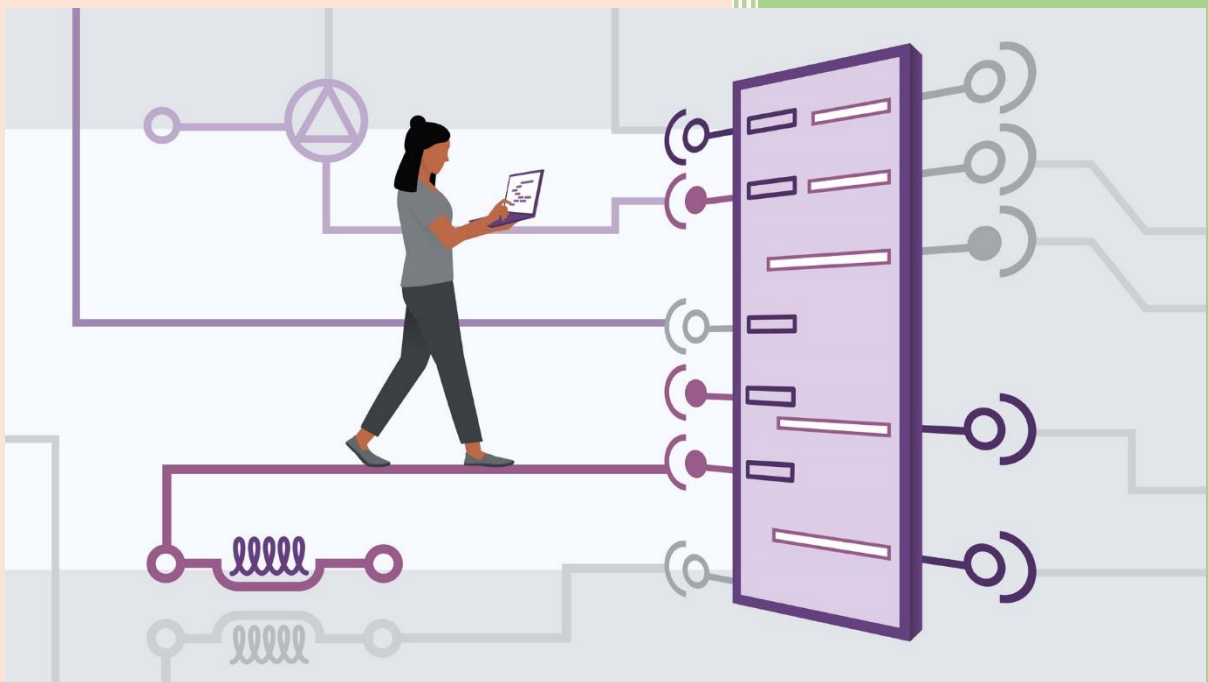


2021

Electrical Single Line Diagram



Yousef Belghis Azar

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5/17/2021



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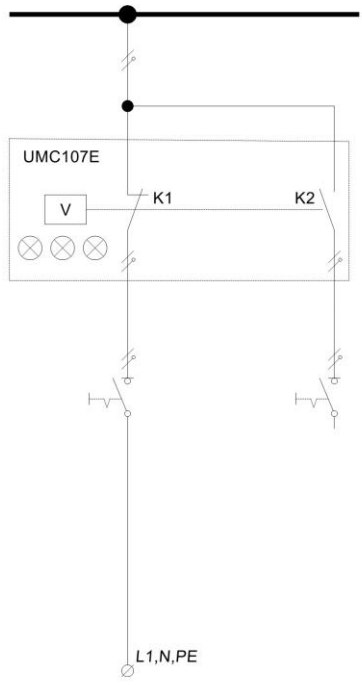

Low Voltage (LV)

1. Single-phase Incomers

Description 2p disconnecter switch
Category Single-phase Incomers

 <p>L1,N,PE</p>	<p>PACCO-2p, 2-pole load switch (Pacco)</p> 
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p> 

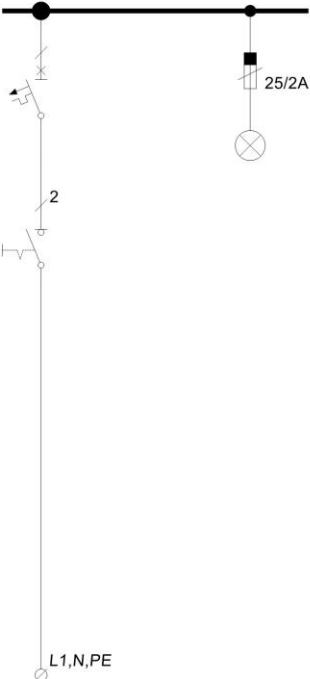



Description 2p change-over switch for medical rooms
Category Single-phase Incomers

	<p>COMED201, 2-pole switchover and monitoring module for medical locations</p> 
<p>SW.07.02, TWO 2-POLES LOAD SWITCHES</p> <p style="text-align: center; font-size: 48px;">?</p>	

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Description: 2p DIN-rail disconnecter switch , 1p MCB 6kA curve B

Category: Single-phase Incomers

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p> 
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p> 

Description 2p DIN-rail disconnecter switch , 1p MCB 6kA curve B, 2p RCD 30mA , lamp
Category Single-phase Incomers

	<p>RCD-2P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 2-pole</p>
	<p>SWIDR101, Switch disconnecter - DIN rail - 1 pole</p>
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p>

Description 2p DIN-rail disconnecter switch , 1p DIAZED fuse, 2p RCD 30mA , lamp
Category Single-phase Incomers

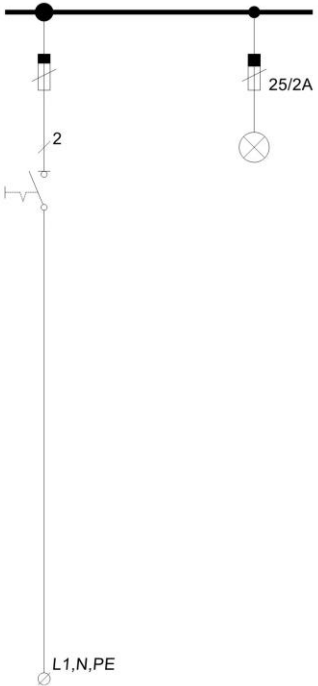



	<p>RCD-2P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 2-pole</p>
	<p>DIAZ-1P, DIAZED Screw-In Fuse Link Systems, 1-pole</p>
	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p>
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p>

Description 2p DIN-rail disconnector switch , 2p RCD 30mA , 1p DIAZED fuse , lamp
Category Single-phase Incomers

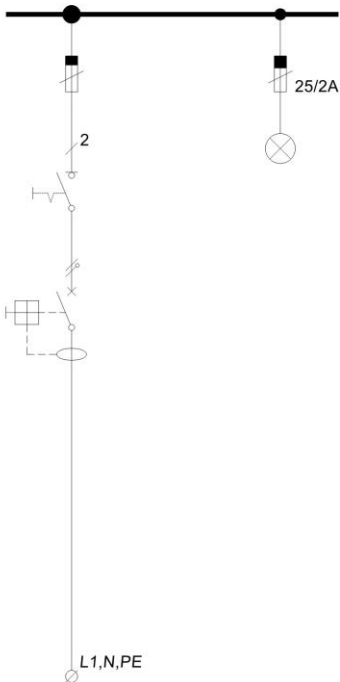




	<p>NEOZ-1P, NEOZED Screw-In Fuse Link Systems, 1-pole</p>
	<p>RCD-2P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 2-pole</p>
	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p>
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p>

Description 2p DIN-rail disconnecter switch , 1p DIAZED fuse , lamp

Category Single-phase Incomers

	<p>DIAZ-1P, DIAZED Screw-In Fuse Link Systems, 1-pole</p> 
	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p> 
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p> 




Description 2p RCD 30mA , 2p DIN-rail disconnecter switch , 1p DIAZED fuse , lamp
Category Single-phase Incomers

	<p>DIAZ-1P, DIAZED Screw-In Fuse Link Systems, 1-pole</p> 
	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p> 
	<p>RCD-2P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 2-pole</p> 
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p> 

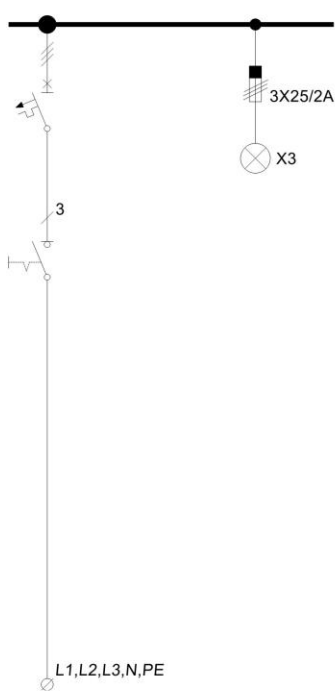



Low Voltage (LV)

2. Three-phase Incomers

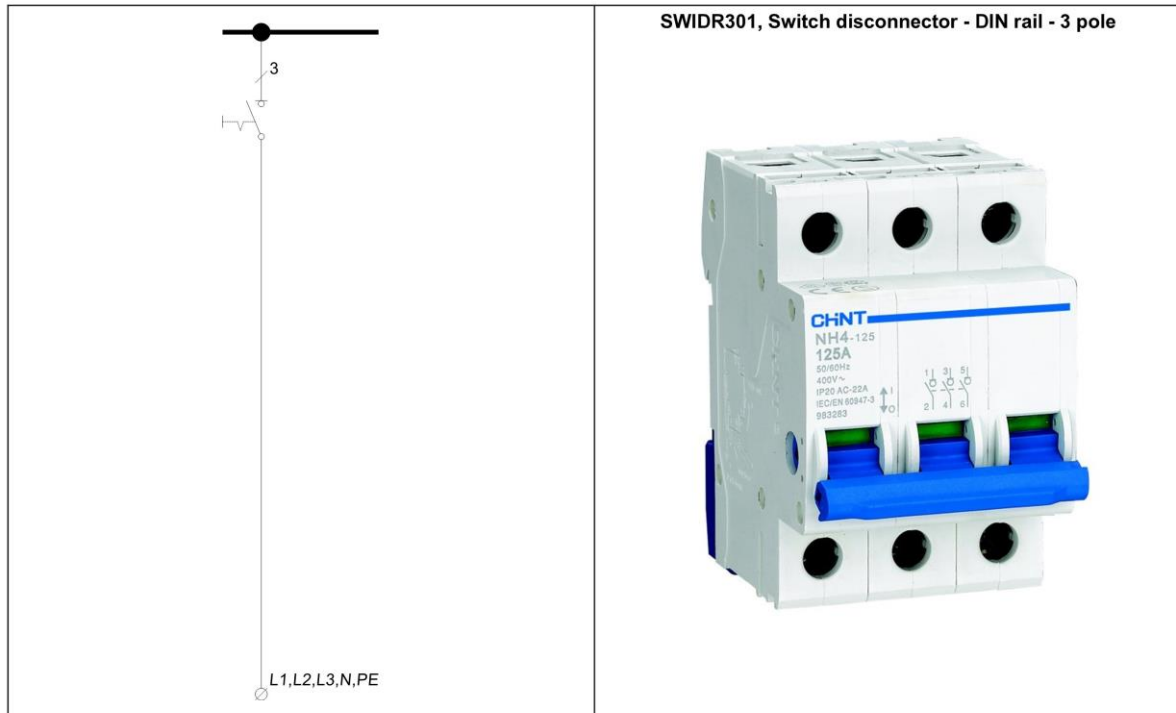
Description 3p DIN-rail disconnecter switch , 3p MCB 6kA curve C, 4p RCD 30mA
Category Three-phase Incomers

 <p>L1,L2,L3,N,PE</p>	<p>RCD-4P-AC300, Residual Current Protective Device - Type AC - IDn=300mA - 4-pole</p> 
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p> 

Description 3p DIN-rail disconnecter switch , 3p MCB 6kA curve B
 C, lamps
Category Three-phase Incomers




	<p>MCB-3P-B-6kA, Miniature circuit breaker (MCB) - 3P - curve B (3-5xIn) - 6 kA</p> 
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p> 
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p> 

Description 3p DIN-rail disconnecter switch , 3p MCB 6kA curve C
Category Three-phase Incomers



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Description 3p DIN-rail disconnecter switch , 3p MCB 6kA curve C, lamps
Category Three-phase Incomers

	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p> 
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p> 

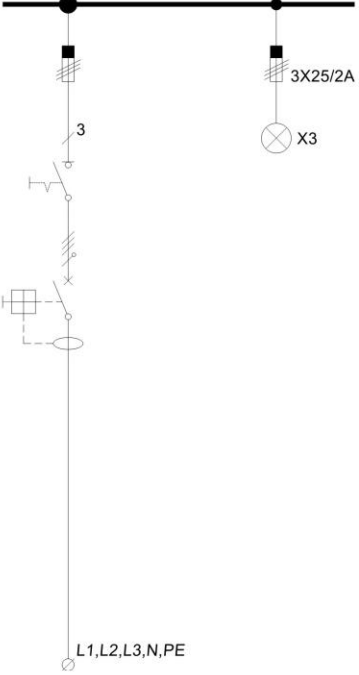




Description 4p RCD 30mA, 3p DIN-rail disconnecter switch , 3p NEOZED fuses , lamps
Category Three-phase Incomers

	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p>
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p>
	<p>RCD-4P-A30, Residual Current Protective Device - Type A - IΔn=30 mA - 4-pole</p>
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p>

Description 3p DIN-rail disconnecter switch , 3p NEOZED fuses ,
 4p RCD 30mA , lamps
Category Three-phase Incomers

	<p>RCD-4P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 4-pole</p>
	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p>
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p>
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p>




Description 4p RCD 30mA, , 3p DIN-rail disconnecter switch , 3p
 NEOZED fuses , lamps
Category Three-phase Incomers

	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p> 
	<p>RCD-4P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 4-pole</p> 
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p> 

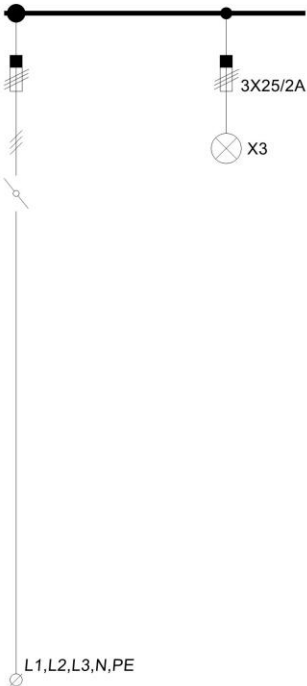



Description 3p disconnecter switch, 3p NH fuses , Ampermeters with CTs , Voltmeter with selector switch
Category Three-phase Incomers

	<p>HRC-3P, NH knife blade fuse, 3-pole</p>
	<p>PACCO-3p, 3-pole load switch (Pacco)</p>
	<p>AM-ANA-DIN-CT-102, Three Analog Ammeters - DIN rail - transformer connected</p>
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p>

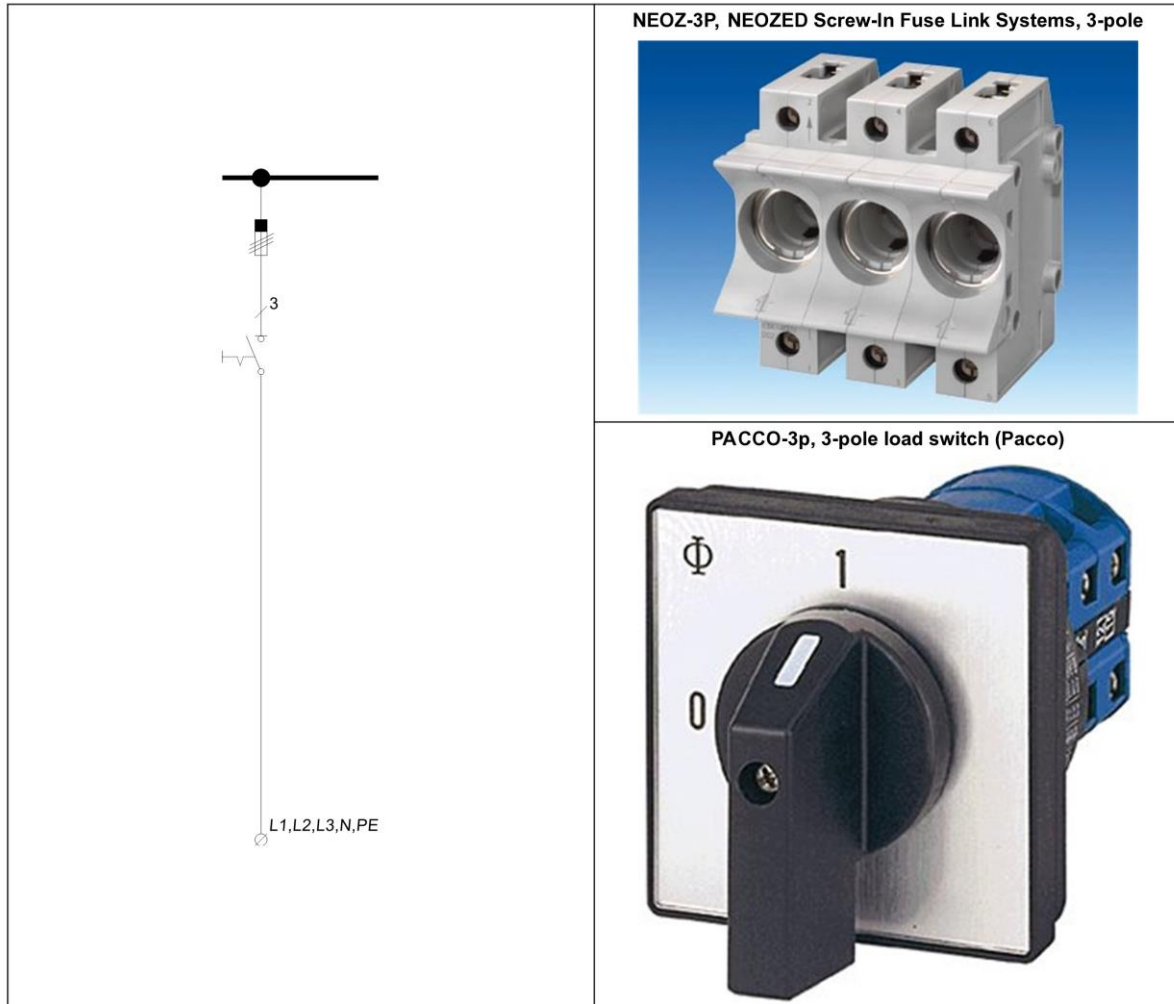
Description 3p DIN-rail disconnecter switch , 3p NEOZED fuses
Category Three-phase Incomers

	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p> 

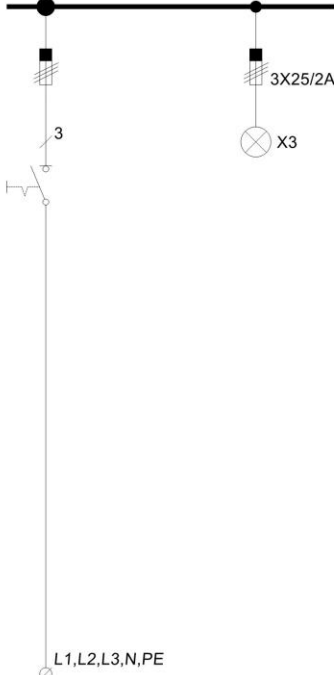



Description 3p disconnecter switch, 3p NEOZED fuses , lamps
Category Three-phase Incomers

	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p> 

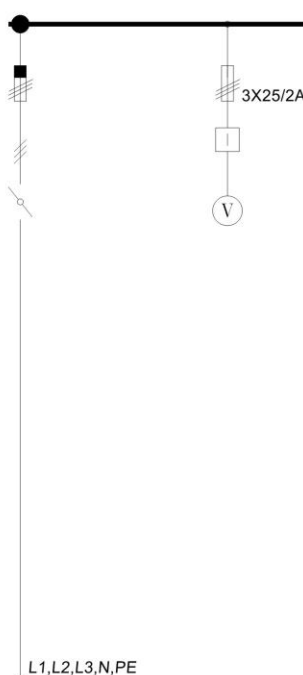



Description 3p disconnecter switch, 3p NEOZED fuses
Category Three-phase Incomers



Description 3p DIN-rail disconnecter switch, 3p NEOZED fuses , lamps
Category Three-phase Incomers

	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p> 
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p> 

Description 3p disconnecter switch, 3p NEOZED fuses , voltmeter with selector switch
Category Three-phase Incomers

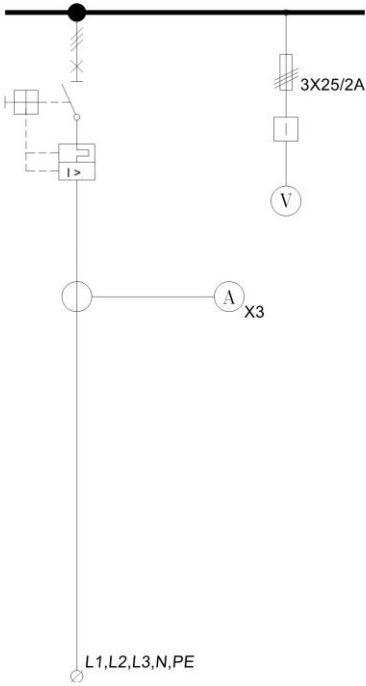



 <p>L1, L2, L3, N, PE</p>	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p> 

Description 3p disconnecter switch, 3p NEOZED fuses , one ammeter with CT , voltmeter with selector switch
Category Three-phase Incomers

	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p>
	<p>PACCO-3p, 3-pole load switch (Pacco)</p>
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p>
	<p>AM-CT-96x96-201, Analog Ammeter - front panel mount - 96x96mm - transformer operated</p>



Description 3p MCCB , three A-meters with CTs , one V-meter with selector switch

Category Three-phase Incomers

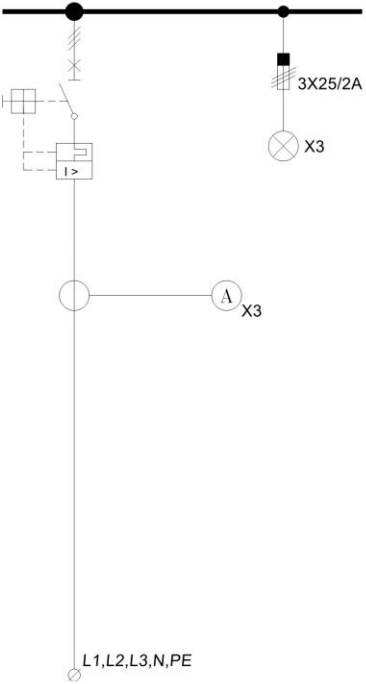



	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p> 
	<p>AM-ANA-DIN-CT-102, Three Analog Ammeters - DIN rail - transformer connected</p> 
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p> 

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Description 3p MCCB , lamps
Category Three-phase Incomers

	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p> 
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p> 

Description 3p MCCB , three A-meters with CTs , lamps
Category Three-phase Incomers

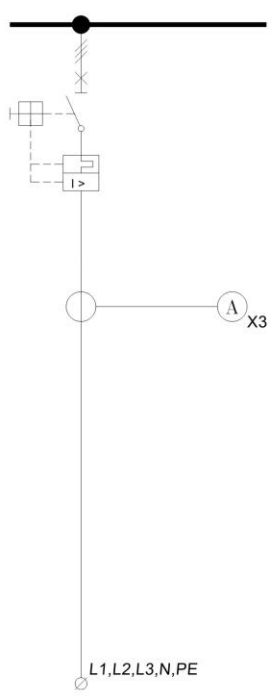


	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p> 
	<p>AM-ANA-DIN-CT-102, Three Analog Ammeters - DIN rail - transformer connected</p> 
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p> 

Description 3p MCCB , surge arresters , three A-meters with CTs , lamps

Category Three-phase Incomers

	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p>
	<p>AM-ANA-DIN-CT-102, Three Analog Ammeters - DIN rail - transformer connected</p>
	<p>LAMFB-3P, Triple indicator light - 2A fuse - busbar connected</p>
	<p>SPD-3PN-Type1/Type2, Combination surge arresters - Type 1/Type 2 - 4-pole</p>

Description 3p MCCB , three A-meters with CTs
Category Three-phase Incomers

	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p> 
<p>AM-ANA-DIN-CT-102, Three Analog Ammeters - DIN rail - transformer connected</p> 	

Description 3p MCCB, 4p RCD 30mA , lamps
Category Three-phase Incomers

<p>L1,L2,L3,N,PE</p>	<p>RCD-4P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 4-pole</p>
	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p>
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p>

Description 3p MCCB plugin version , three A-meters with CTs ,
 one V-meter with selector switch
Category Three-phase Incomers

	<p>AM-ANA-DIN-CT-102, Three Analog Ammeters - DIN rail - transformer connected</p>
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p>

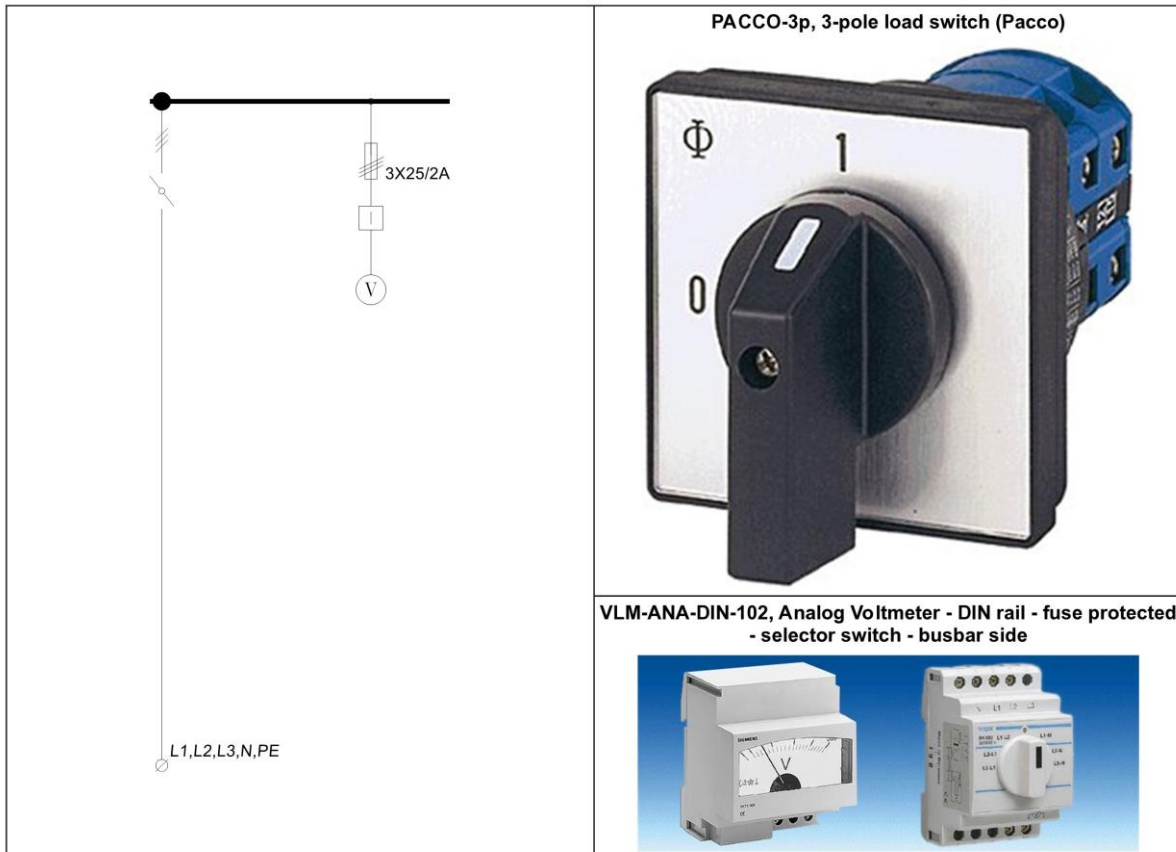
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Description 3p disconnecter switch , three A-meters with CTs , one V-meter with selector switch
Category Three-phase Incomers

	<p>SW.07.04, 3-pole Knife load switch</p>
	<p>AM-ANA-DIN-CT-102, Three Analog Ammeters - DIN rail - transformer connected</p>
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p>

Description 3p disconnecter switch , one V-meter with selector switch

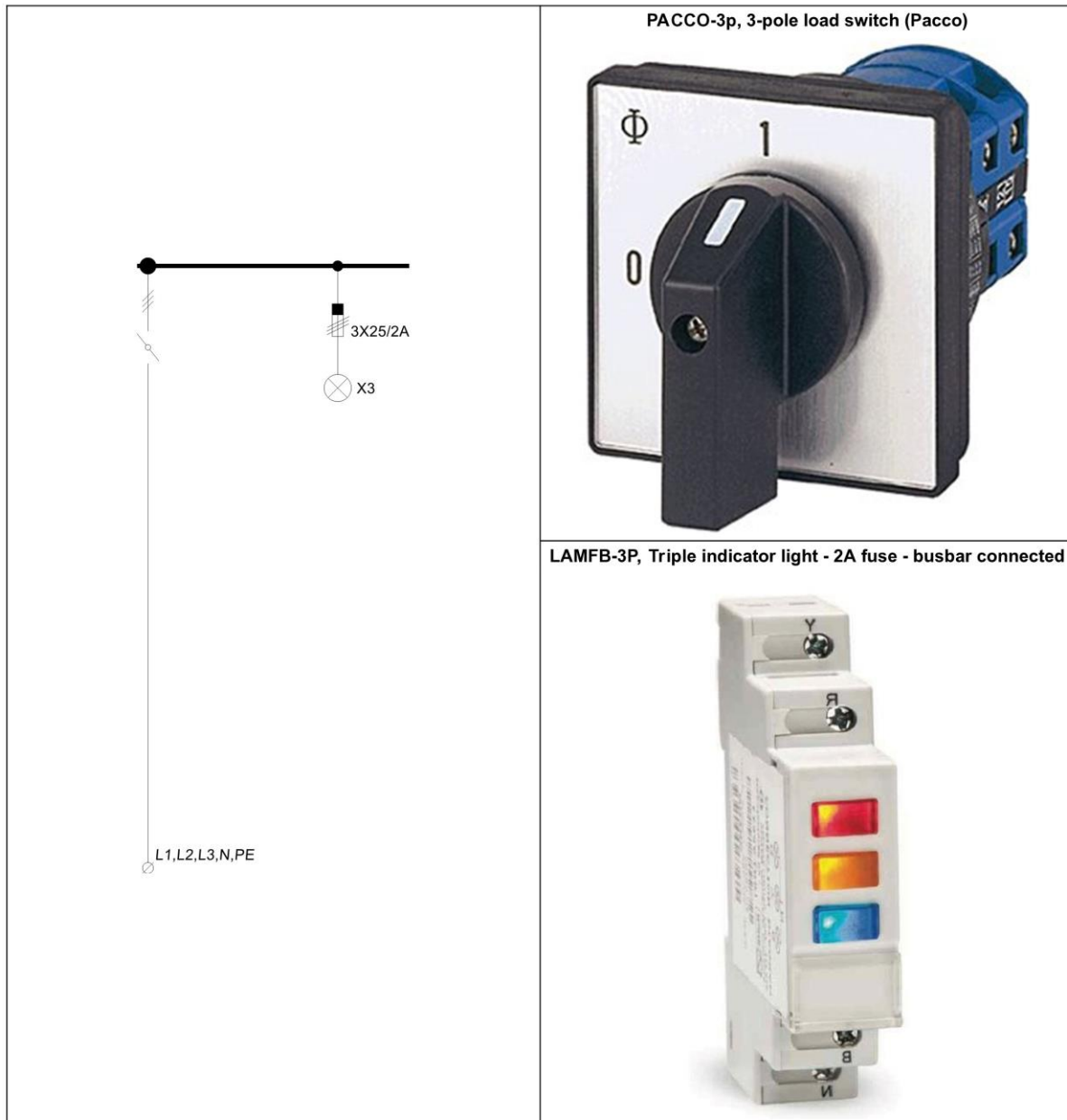
Category Three-phase Incomers



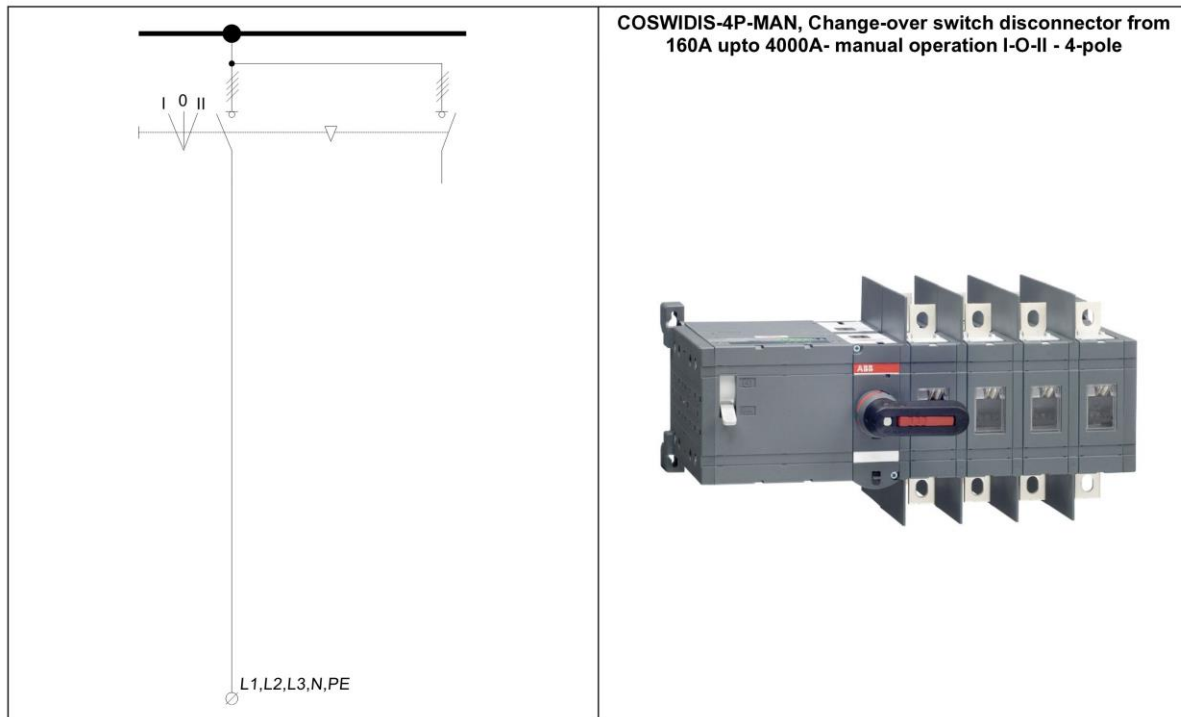
Description 3p disconnector switch , one A-meter with CT , one V-meter with selector switch
Category Three-phase Incomers

	<p>PACCO-3p, 3-pole load switch (Pacco)</p>
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p>
	<p>AM-CT-96x96-201, Analog Ammeter - front panel mount - 96x96mm - transformer operated</p>

Description 3p disconnecter switch , lamps
Category Three-phase Incomers



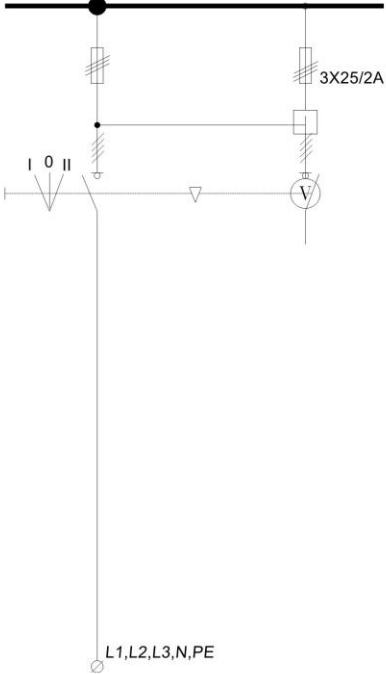



Description 4p change-over switch
Category Three-phase Incomers



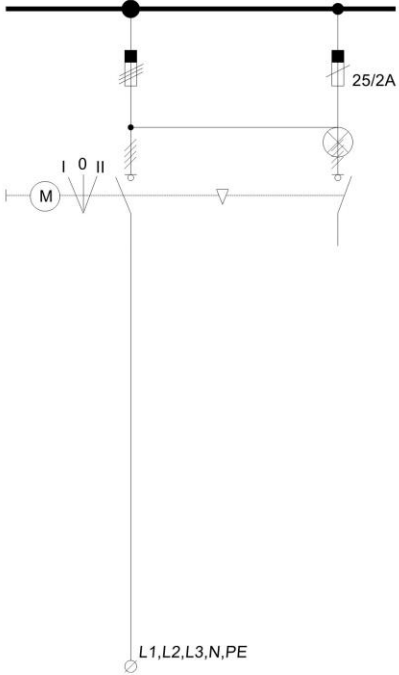



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Description 4p change-over switch , 3 knife fuses, one V-meter with selector switch

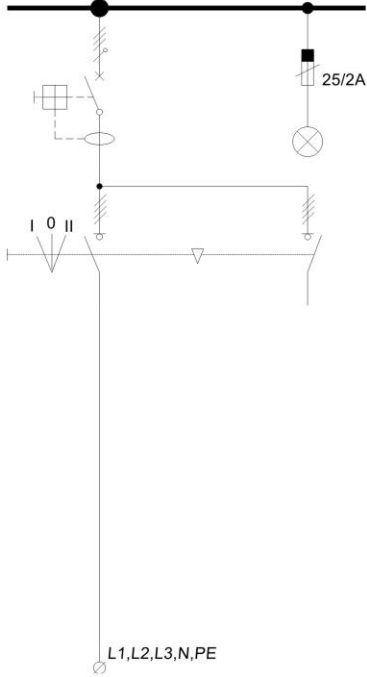



Category Three-phase Incomers

	<p>HRC-3P, NH knife blade fuse, 3-pole</p> 
	<p>COSWIDIS-4P-MAN, Change-over switch disconnecter from 160A upto 4000A- manual operation I-O-II - 4-pole</p> 
	<p>VLM-ANA-DIN-102, Analog Voltmeter - DIN rail - fuse protected - selector switch - busbar side</p> 

Description 4p change-over switch , 3p NEOZED fuses, lamps
Category Three-phase Incomers

 <p>The diagram shows a 4-pole change-over switch (I-O-II) connected to a busbar system. The busbar is connected to three phases (L1, L2, L3) and a neutral/ground line (N, PE). The switch is connected to a motor (M) and a lamp. A 25/2A fuse is shown on the line to the lamp.</p>	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>COSWIDIS-4P-MOT, Change-over switch disconnecter from 160A upto 4000A- motor operation I-O-II - 4-pole</p> 
	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p> 

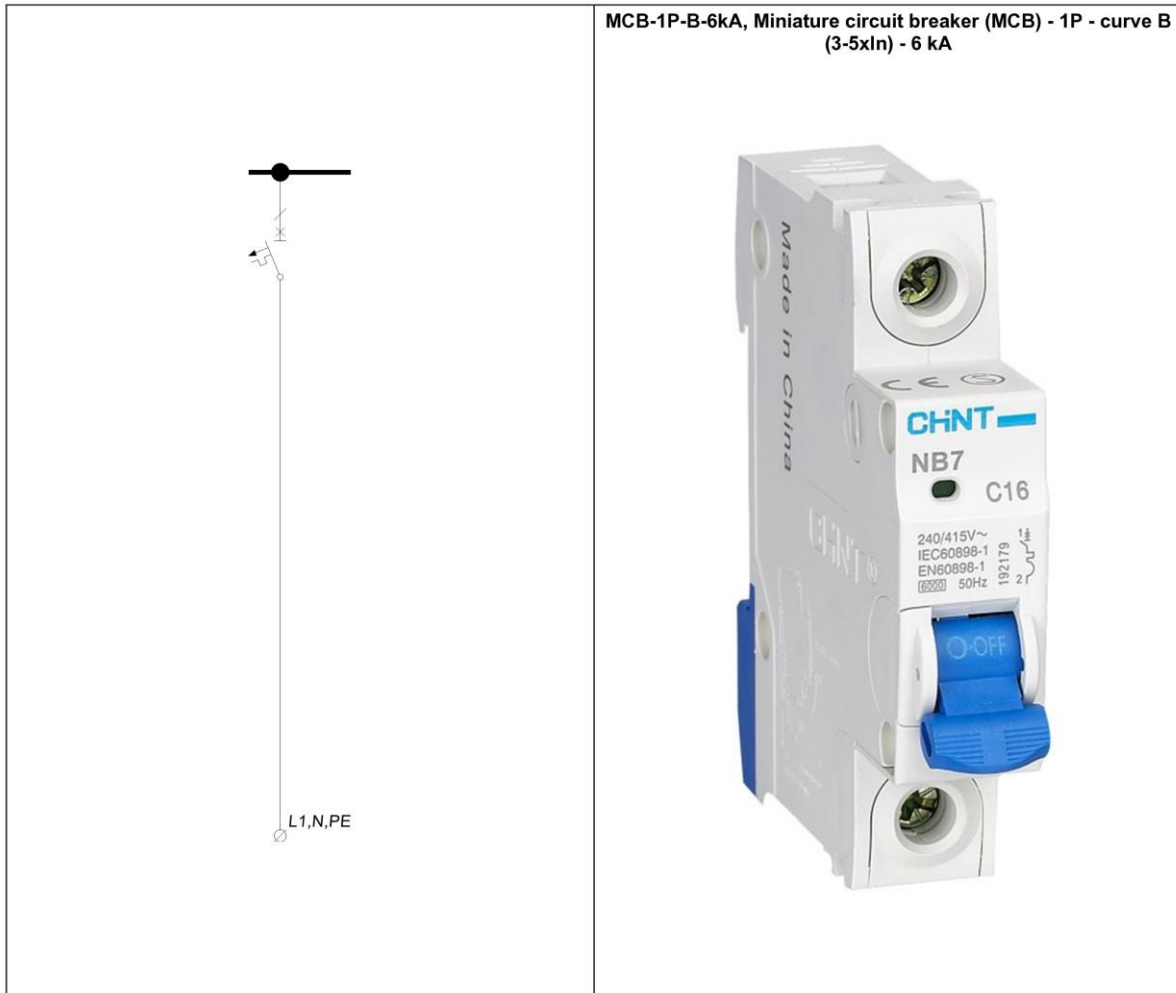
Description 4p change-over switch , 4p RCD 30mA , lamps
Category Three-phase Incomers

	<p>LAMFB-1P, One indicator light - 2A fuse - busbar connected</p> 
	<p>RCD-4P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 4-pole</p> 
	<p>COSWIDIS-4P-MAN, Change-over switch disconnecter from 160A upto 4000A- manual operation I-O-II - 4-pole</p> 




Low Voltage (LV)

3. Single-phase Feeders

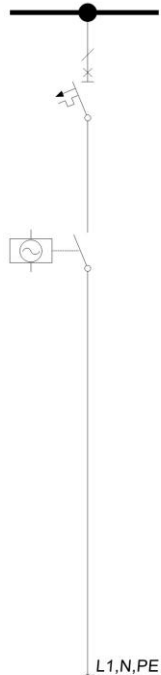


Description 1p MCB 6kA curve B
Category Single-phase Feeders



Description 1p MCB 6kA curve B, 2p DIN-rail load switch
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
<p>SWIDR201, Switch disconnector - DIN rail - 2 pole</p> 	

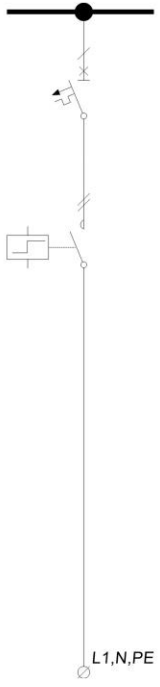


Description 1p MCB 6kA curve B, time-switch
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>TIM-101, Programmable analog time-switch with contact 250V/16A</p> 

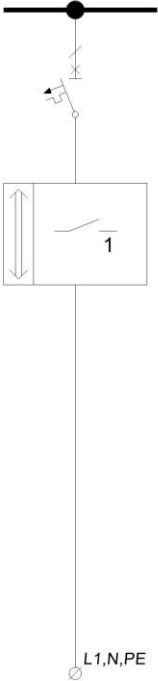


Description 1p MCB 6kA curve B, three latch relays
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p>
	<p>LATCH502, Three Latching relays - 1-pole</p>

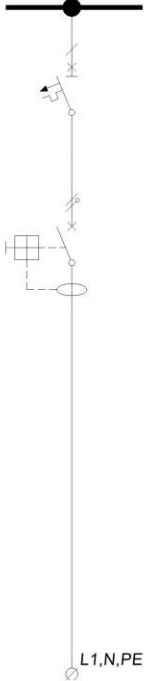


Description 1p MCB 6kA curve B, 2p latch relay
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xI_n) - 6 kA</p> 
	<p>LATCH-2P-NO, Latching relay - 2-pole</p> 




Description 1p MCB 6kA curve B, binary actuator EIB
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>EIB-BIN-401, EIB/KNX Switching actuator 4-fold</p> 

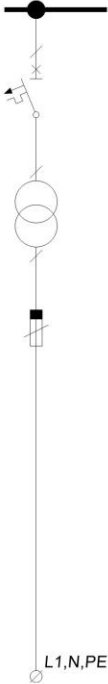


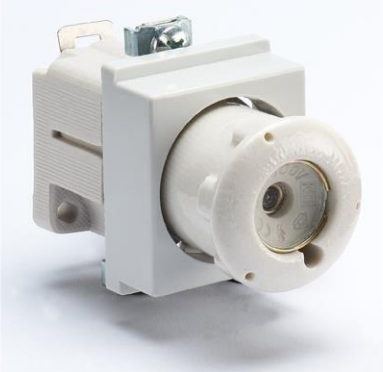
Description 1p MCB 6kA curve B, 2p RCD 30 mA
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xI_n) - 6 kA</p> 
	<p>RCD-2P-AC30, Residual Current Protective Device - Type AC - ID_n=30mA - 2-pole</p> 




Description 1p MCB 6kA curve B, 1p transformer 230/24V
Category Single-phase Feeders

 <p>L1,N,PE</p>	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>TRAF0102, Single-phase Transformers 230/24V</p> 

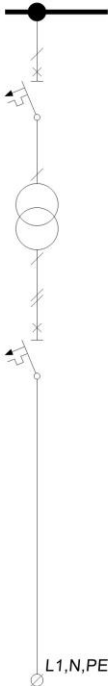



Description 1p MCB 6kA curve B, 1p transformer 230/24V, 1p DIAZED fuse
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>TRAFO102, Single-phase Transformers 230/24V</p> 
	<p>DIAZ-1P, DIAZED Screw-In Fuse Link Systems, 1-pole</p> 

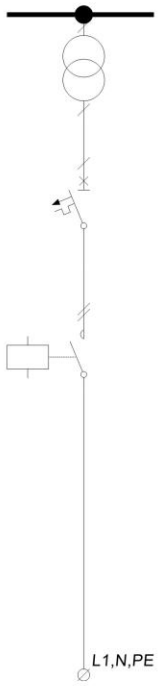



Description 1p MCB 6kA curve B, 1p transformer 230/42V, 1p+N
MCB 6kA καμπύλη B
Category Single-phase Feeders

 <p>L1,N,PE</p>	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>TRAF0103, Single-phase Transformers 230/42V</p> 

Description 1p MCB 6kA curve B, 1p transformer 230/12V, 1p+N
MCB 6kA καμπύλη B
Category Single-phase Feeders

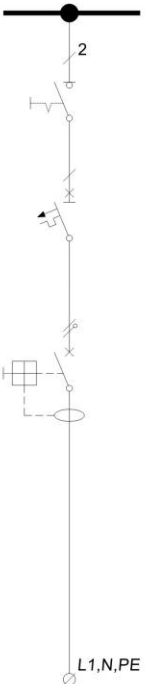



	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>TRAFO101, Single-phase Transformers 230/12V</p> 
	<p>MCB-2P-B-6kA, Miniature circuit breaker (MCB) - 2P - curve B (3-5xIn) - 6 kA</p> 

Description 1p MCB 6kA curve B, 1p transformer 230/230V, 1p+N
 MCB 6kA curve B, 2p installation contactor
Category Single-phase Feeders

	<p>TRAF0104, Single-phase Transformers 230-400/230V</p> 
	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5I_n) - 6 kA</p> 
	<p>ESB-2P-NO, Installation contactor - 2-pole</p> 

Description 2p disconnecter switch , 1p MCB 6kA curve B , 2p RCD 30mA

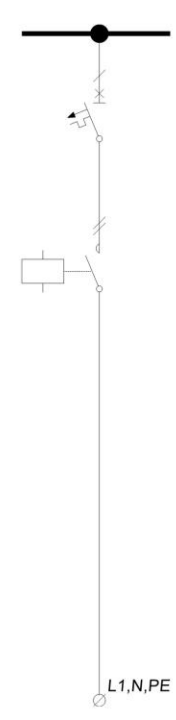


Category Single-phase Feeders

	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p> 
	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>RCD-2P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 2-pole</p> 




Description 2p disconnecter switch , 1p MCB 6kA curve B , 2p RCD 30mA , lamp
Category Single-phase Feeders

	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p>
	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p>
	<p>RCD-2P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 2-pole</p>
	<p>LAMFC-1P, One indicator light - 2A fuse - cable connected</p>

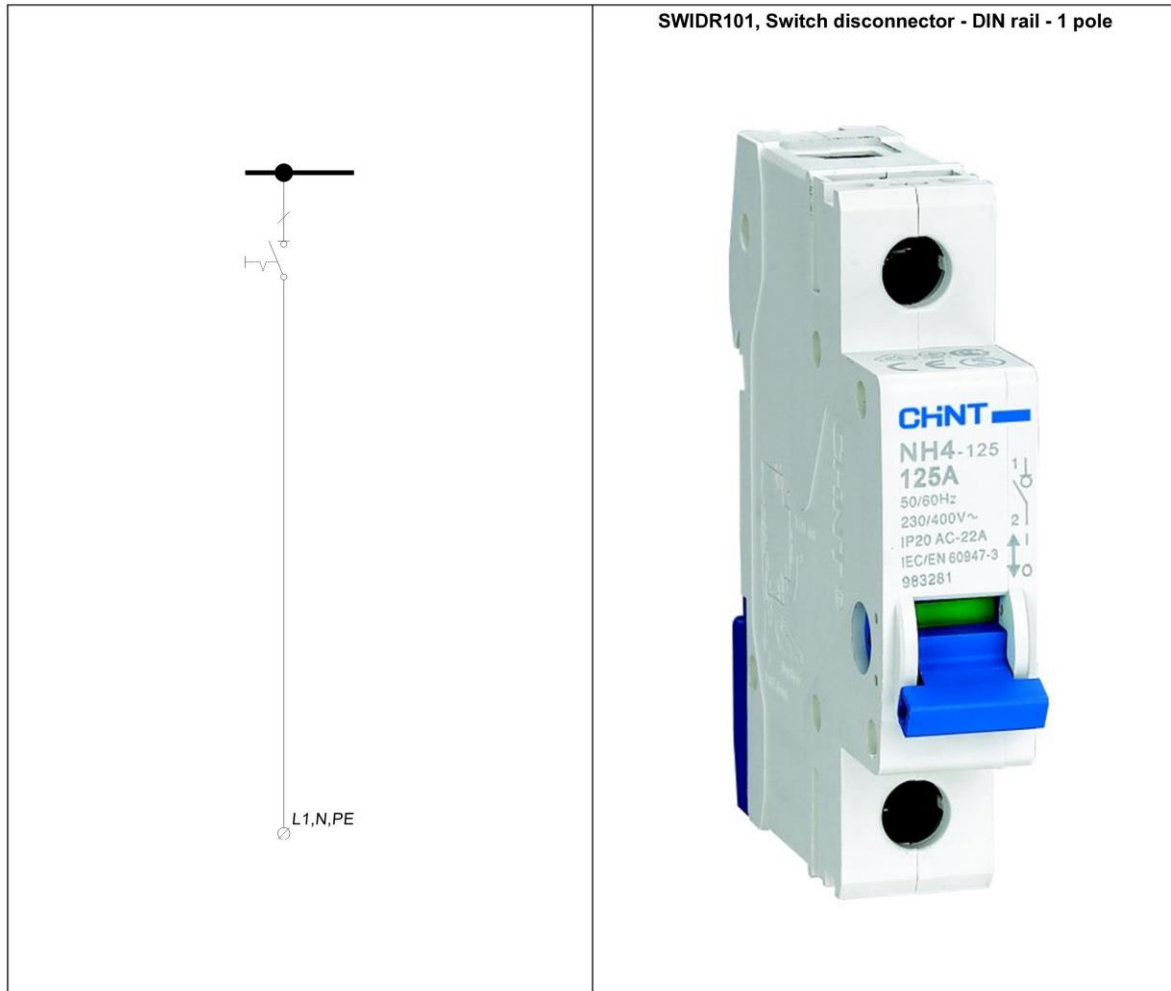
Description 1p MCB 6kA curve B, 2p installation contactor
Category Single-phase Feeders

	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 
	<p>ESB-2P-NO, Installation contactor - 2-pole</p> 




Description 1p disconnecter switch , 1p MCB 6kA curve B
Category Single-phase Feeders

	<p>SWIDR101, Switch disconnecter - DIN rail - 1 pole</p> 
	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p> 



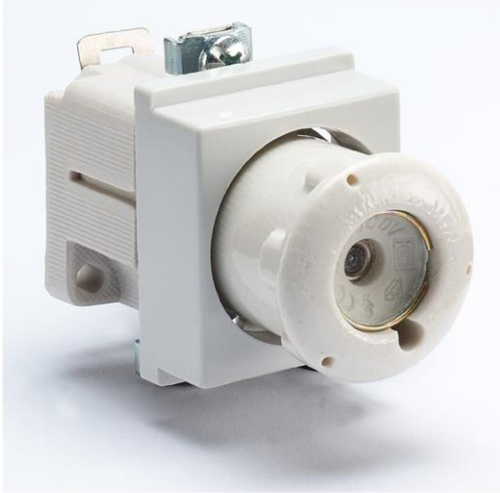
Description 1p disconnecter switch , 1p MCB 6kA curve C
Category Single-phase Feeders



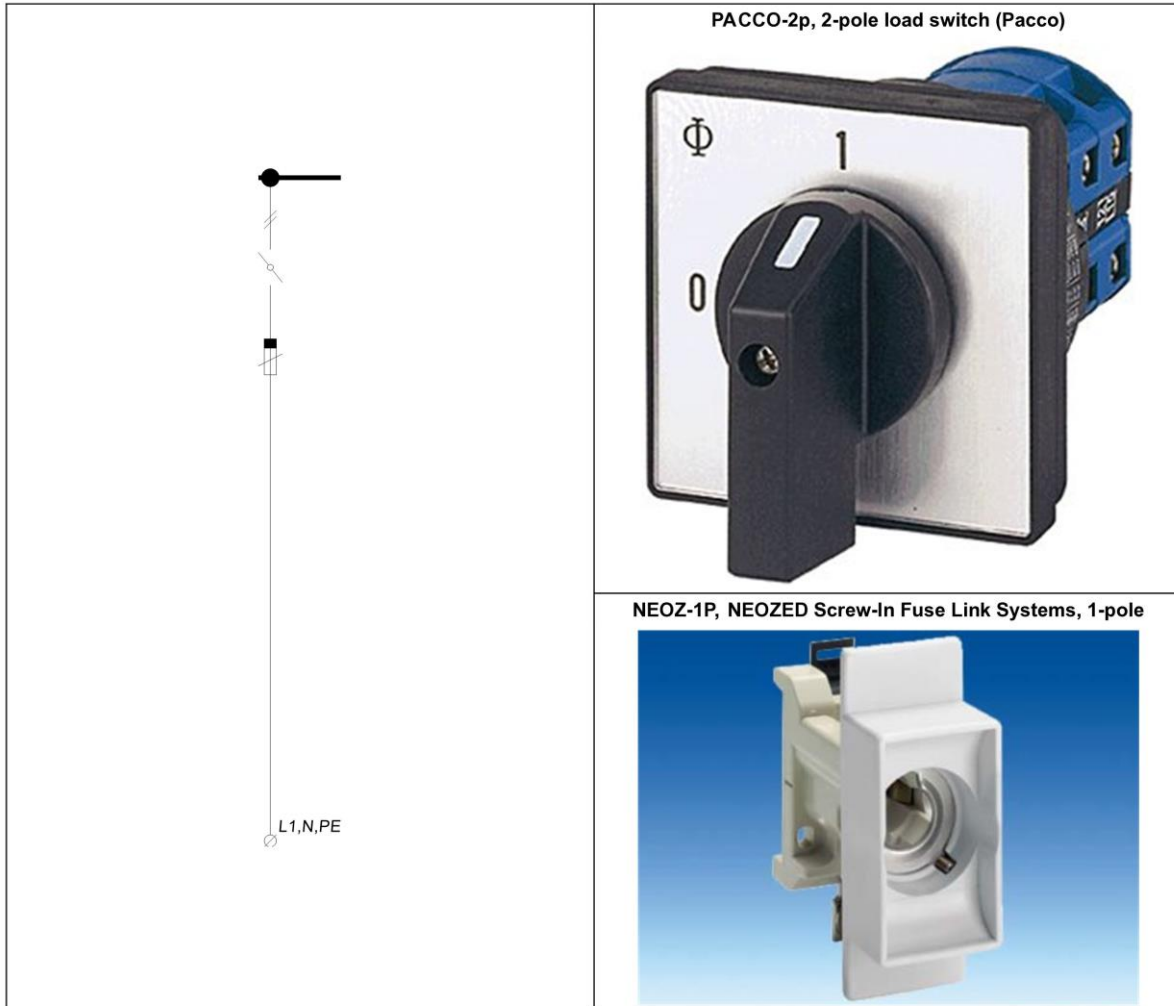
Description DIN-rail 2-pole load-switch and 1-pole MCB 6kA
Category Single-phase Feeders

 <p>The diagram shows a 2-pole switch and a 1-pole MCB connected in series. The switch is represented by two vertical lines with diagonal bars, and the MCB is represented by a vertical line with a small circle at the bottom. The label 'L1,N,PE' is at the bottom of the MCB line.</p>	<p>SWIDR201, Switch disconnector - DIN rail - 2 pole</p>  <p>A white and blue CHINT NH4-125 125A switch disconnector. It is a 2-pole device with two blue handles. The front panel has technical specifications: 50/60Hz, 400V~, IP20 AC-22A, IEC/EN 60947-3, and 993262. The terminals are labeled 1, 2, 3, and 4.</p>
	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5xIn) - 6 kA</p>  <p>A white and blue CHINT NB7 C16 miniature circuit breaker. It is a 1-pole device with a blue handle. The front panel has technical specifications: 240/415V~, IEC60898-1, EN60898-1, 10000, 50Hz, and 21718. The terminals are labeled 1 and 2.</p>

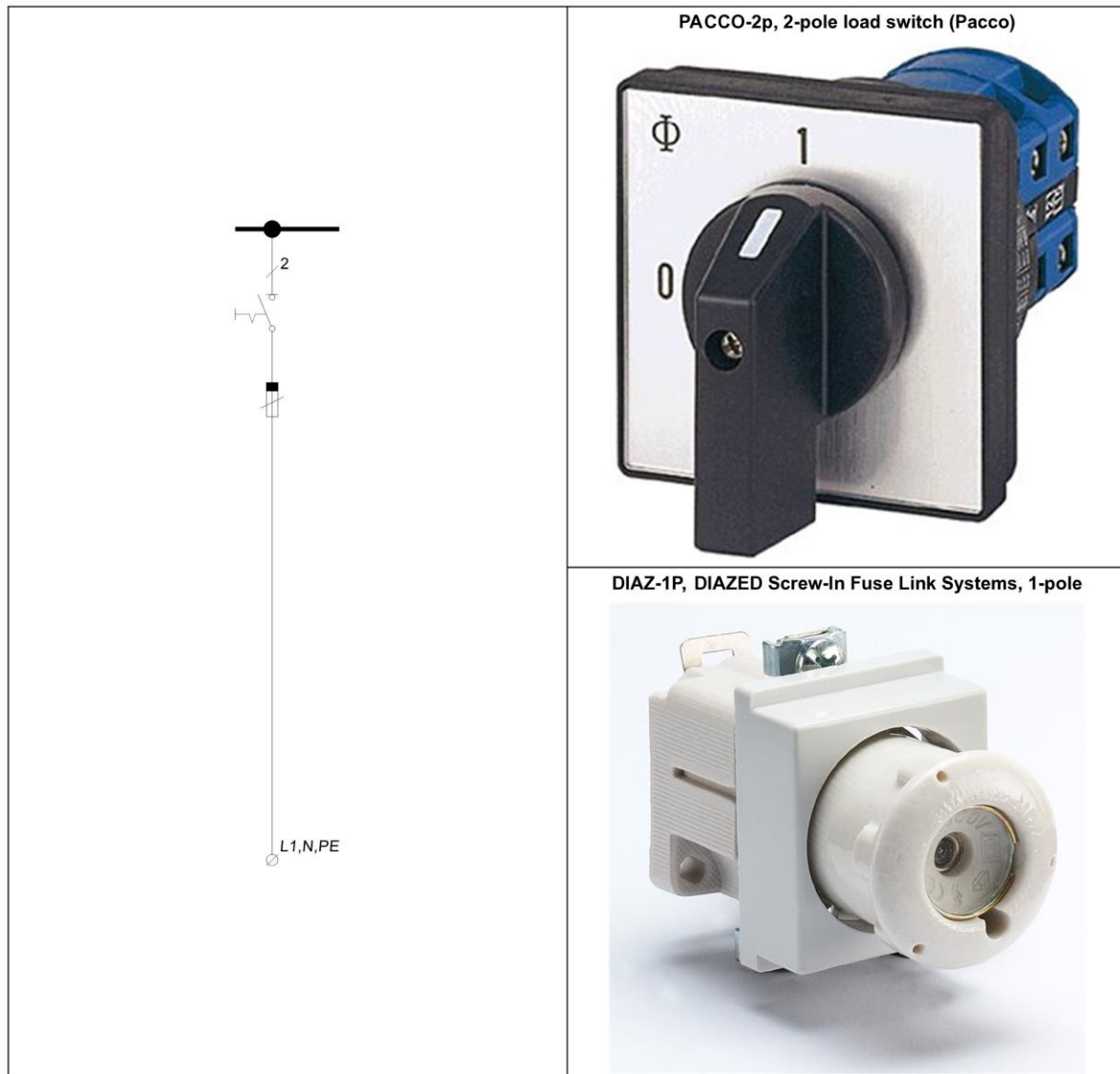
Description 2p load switch, 1p fuse DIAZED
Category Single-phase Feeders

 <p>L1, N, PE</p>	<p>SWIDR201, Switch disconnecter - DIN rail - 2 pole</p> 
	<p>DIAZ-1P, DIAZED Screw-In Fuse Link Systems, 1-pole</p> 

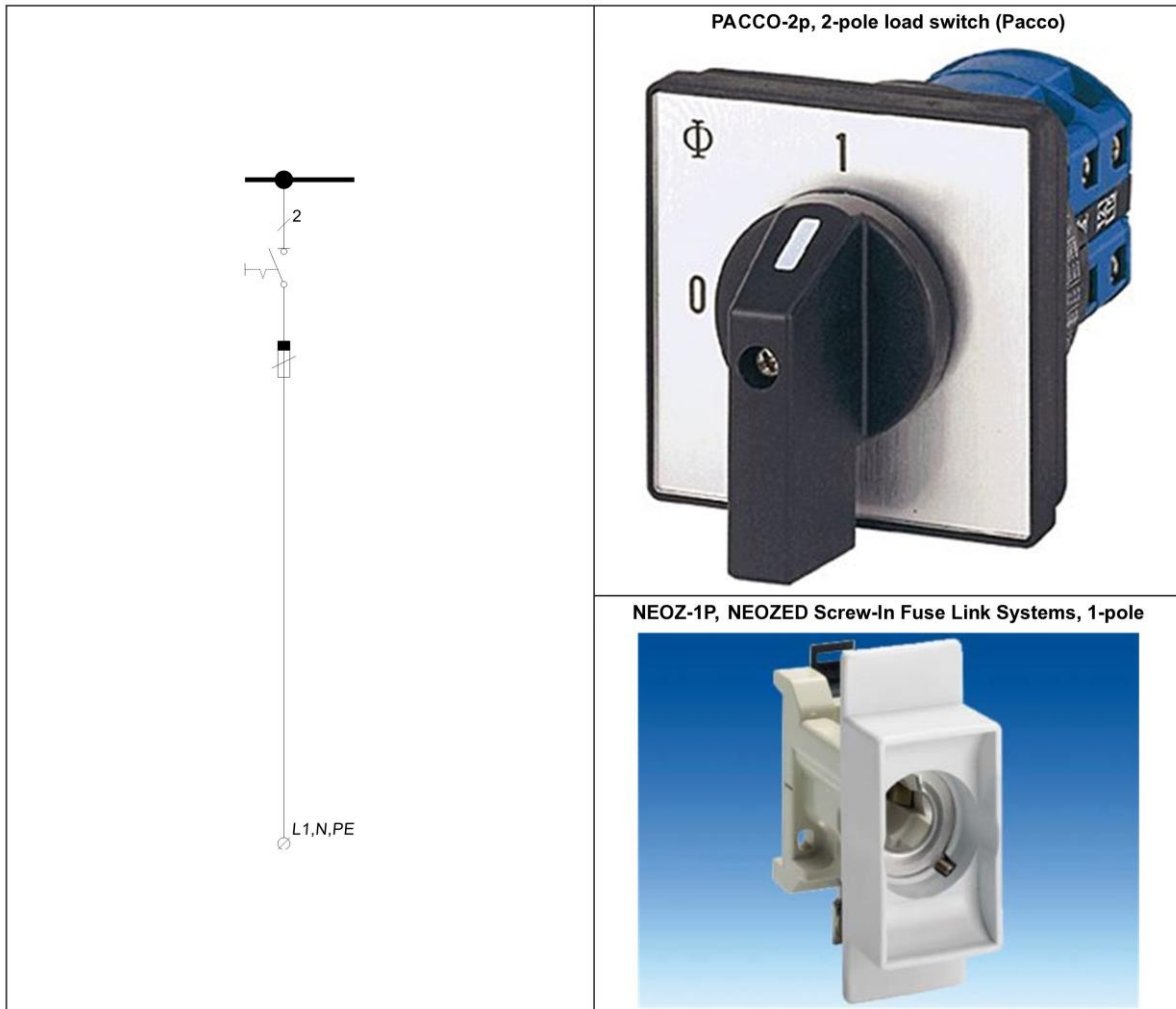
Description 2p load-switch, 1p fuse NEOZED
Category Single-phase Feeders






Description 2p load switch, 1p fuse DIAZED
Category Single-phase Feeders



Description 2p load switch, 1p fuse NEOZED
Category Single-phase Feeders



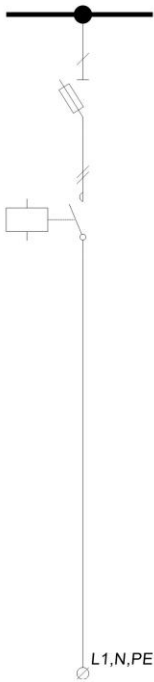


Description 1p disconnecter switch , 1p NEOZED fuse
Category Single-phase Feeders

	<p>SWIDR101, Switch disconnecter - DIN rail - 1 pole</p> 
	<p>NEOZ-1P, NEOZED Screw-In Fuse Link Systems, 1-pole</p> 

Description 1p fuse-disconnector
Category Single-phase Feeders



Description 1p fuse-disconnector, 2p installation contactor
Category Single-phase Feeders

	<p>FD-1P-CYL, Fuse disconnectors, with cylindrical fuse-links, 1-pole</p> 
	<p>ESB-2P-NO, Installation contactor - 2-pole</p> 

Description 2p latch relay
Category Single-phase Feeders



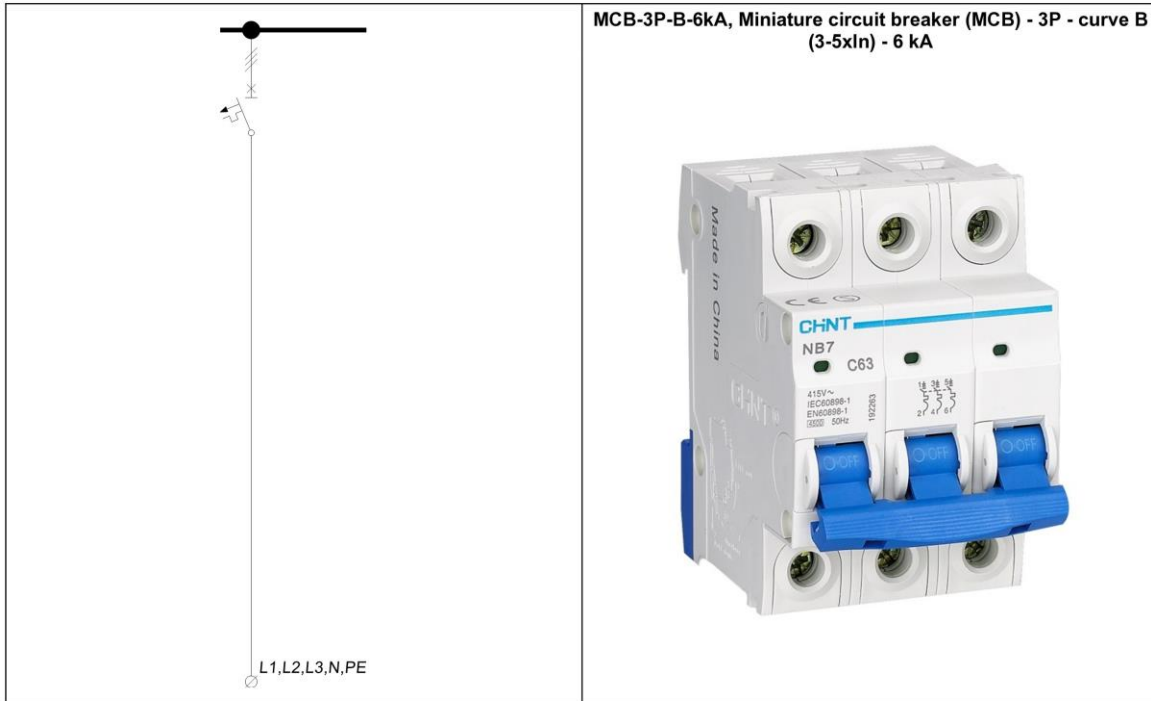
Description 1Ph Lighting feeder
Category Single-phase Feeders

	<p>TEMP101, Thermostat with change-over contact 250V/16A, cosφ=1</p>
<p>SW.07.04, 3-pole Knife load switch</p> <ul style="list-style-type: none"> 1 4th contact (N conductor) 2 N or PE/ground terminal, continuous 3 Auxiliary switch 1 NO + 1 NC 4 Rotary operating mechanism, red/yellow 5 Rotary operating mechanism, black 6 Front plate, English/German, black 7 Terminal cover, three-pole 8 Terminal cover, one-pole 	

Low Voltage (LV)

4. Three-phase Feeders

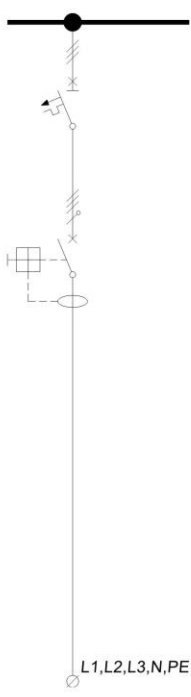


Description 3p MCB 6kA curve B
Category Three-phase Feeders



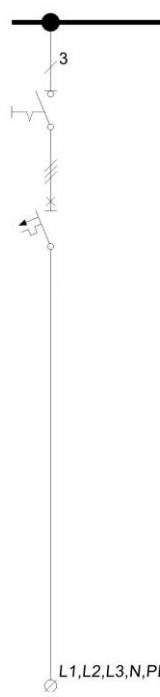


Description 3p MCB 6kA curve B, 3p installation contactor
Category Three-phase Feeders

	<p>MCB-3P-B-6kA, Miniature circuit breaker (MCB) - 3P - curve B (3-5xIn) - 6 kA</p>
	<p>ESB-3P-NO, Installation contactor - 3-pole</p>

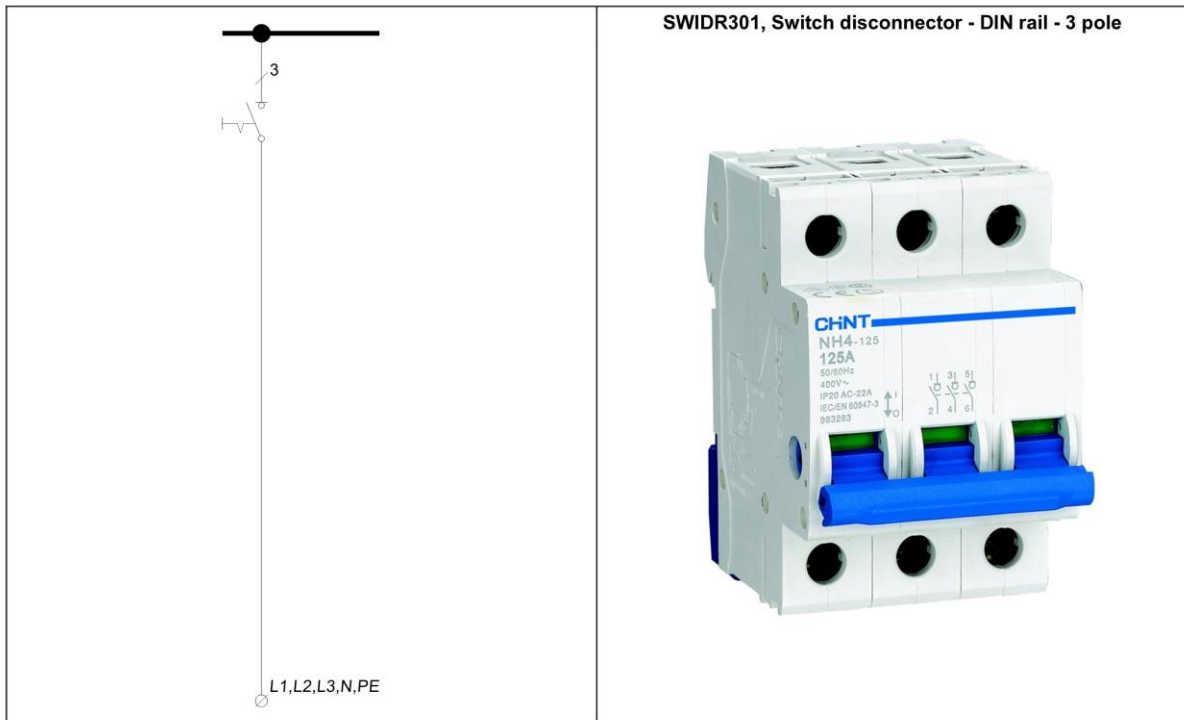
Description 3p MCB 6kA curve B, 4p RCD 30mA
Category Three-phase Feeders

	<p>MCB-3P-B-6kA, Miniature circuit breaker (MCB) - 3P - curve B (3-5xIn) - 6 kA</p> 
	<p>RCD-4P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 4-pole</p> 

Description 3p DIN-rail disconnecter switch , 3p MCB 6kA curve B
Category Three-phase Feeders

	<p>SWIDR301, Switch disconnecter - DIN rail - 3 pole</p> 
	<p>MCB-3P-B-6kA, Miniature circuit breaker (MCB) - 3P - curve B (3-5xIn) - 6 kA</p> 

Description 3p DIN-rail disconnecter switch , 3p MCB 6kA curve C
Category Three-phase Feeders



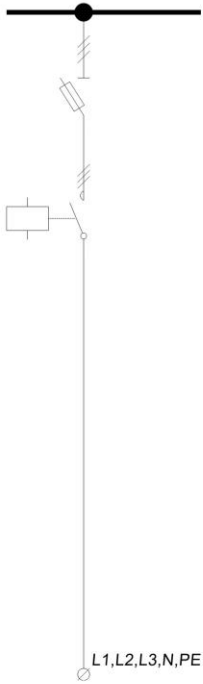


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Description 3p fuse-disconnector
Category Three-phase Feeders

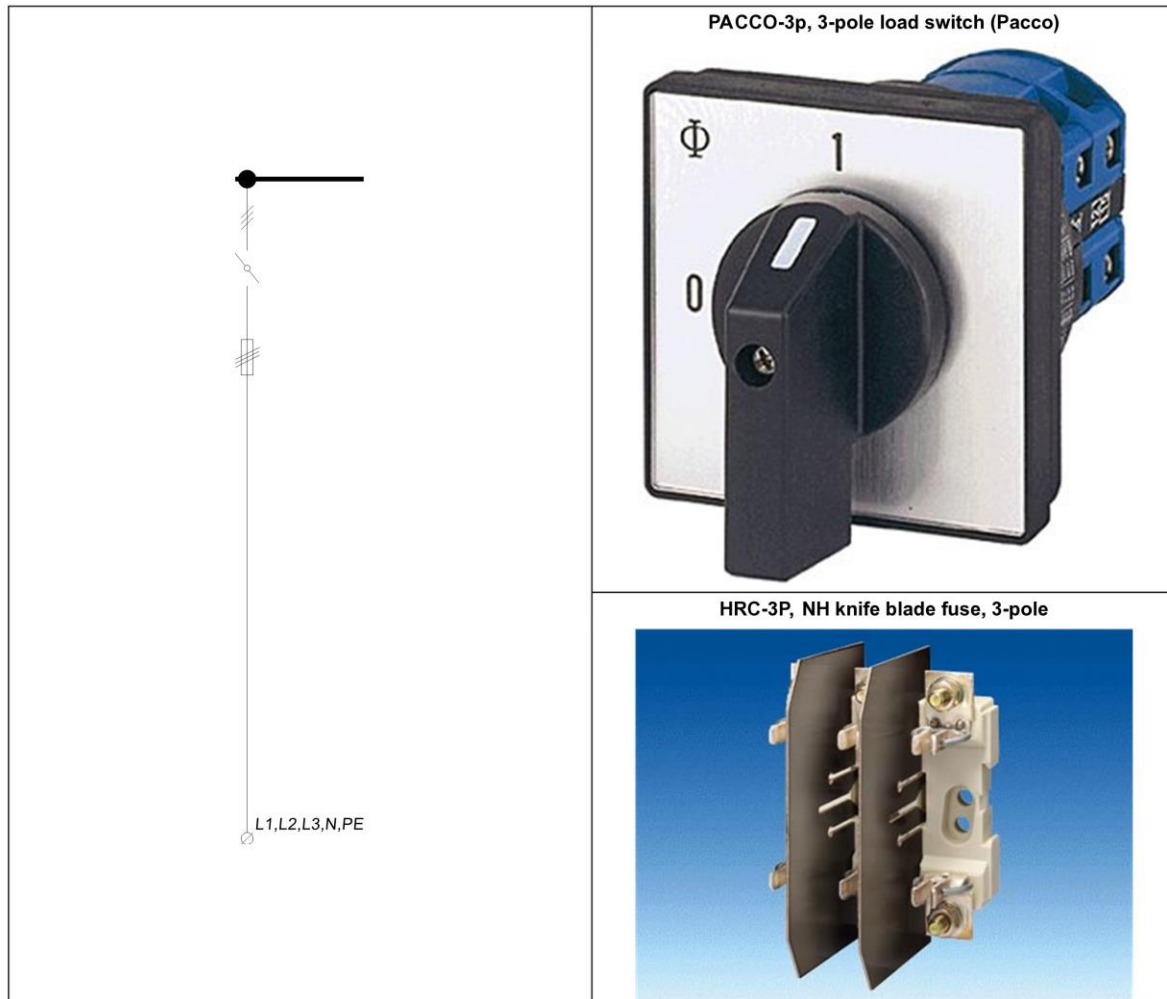


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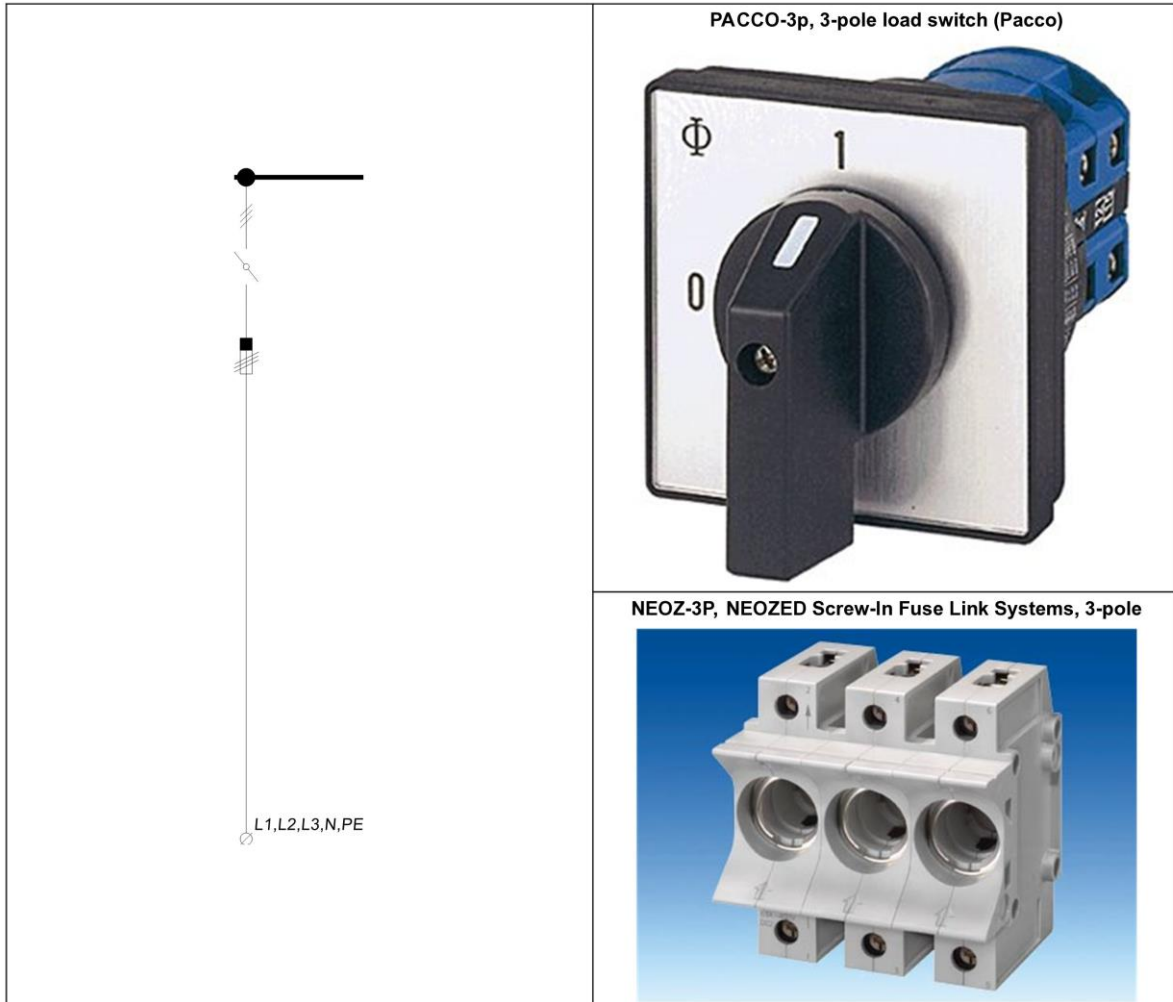
Description 3p fuse-disconnector , 3p installation contactor
Category Three-phase Feeders

	<p>FD-3P-CYL, Fuse disconnectors, with cylindrical fuse-links, 3-pole</p> 
	<p>ESB-3P-NO, Installation contactor - 3-pole</p> 

Description 3p switch-disconnector with NH fuses
Category Three-phase Feeders

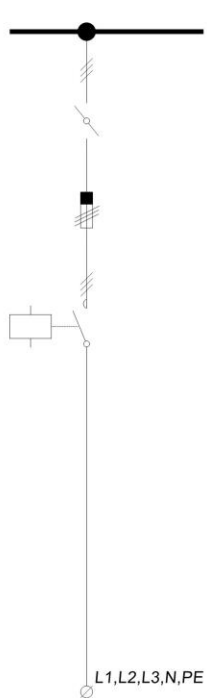





Description 3p switch-disconnector with NEOZED fuses
Category Three-phase Feeders






Description 3p switch-disconnector with NEOZED fuses , 3p installation switch

Category Three-phase Feeders

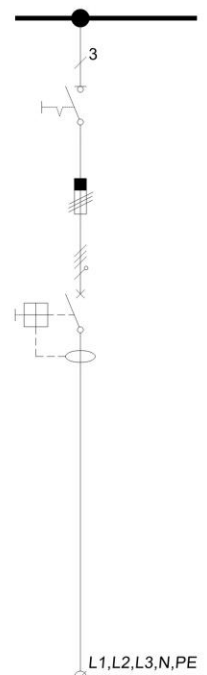



	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>ESB-3P-NO, Installation contactor - 3-pole</p> 

Description 3p switch-disconnector with NEOZED fuses
Category Three-phase Feeders

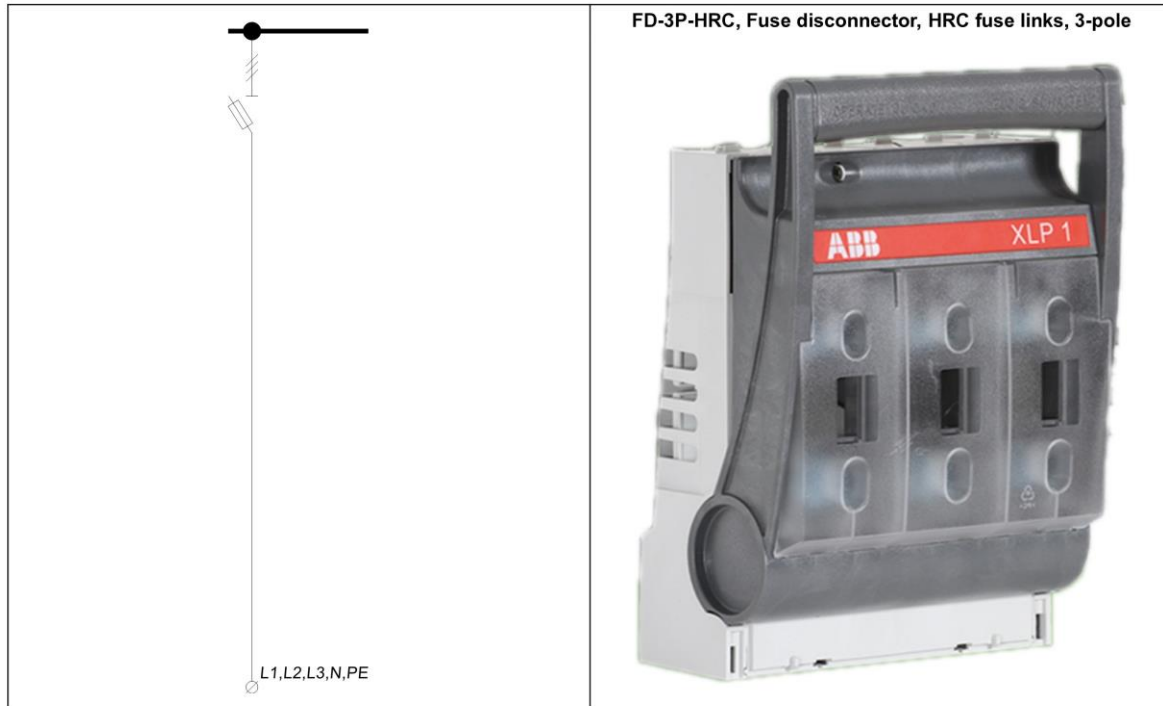
 <p>L1,L2,L3,N,PE</p>	<p>SWIDR301, Switch disconnector - DIN rail - 3 pole</p> 
	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 

Description 3p DIN-rail switch-disconnector , 3p NEOZED fuses ,
4p RCD 30mA

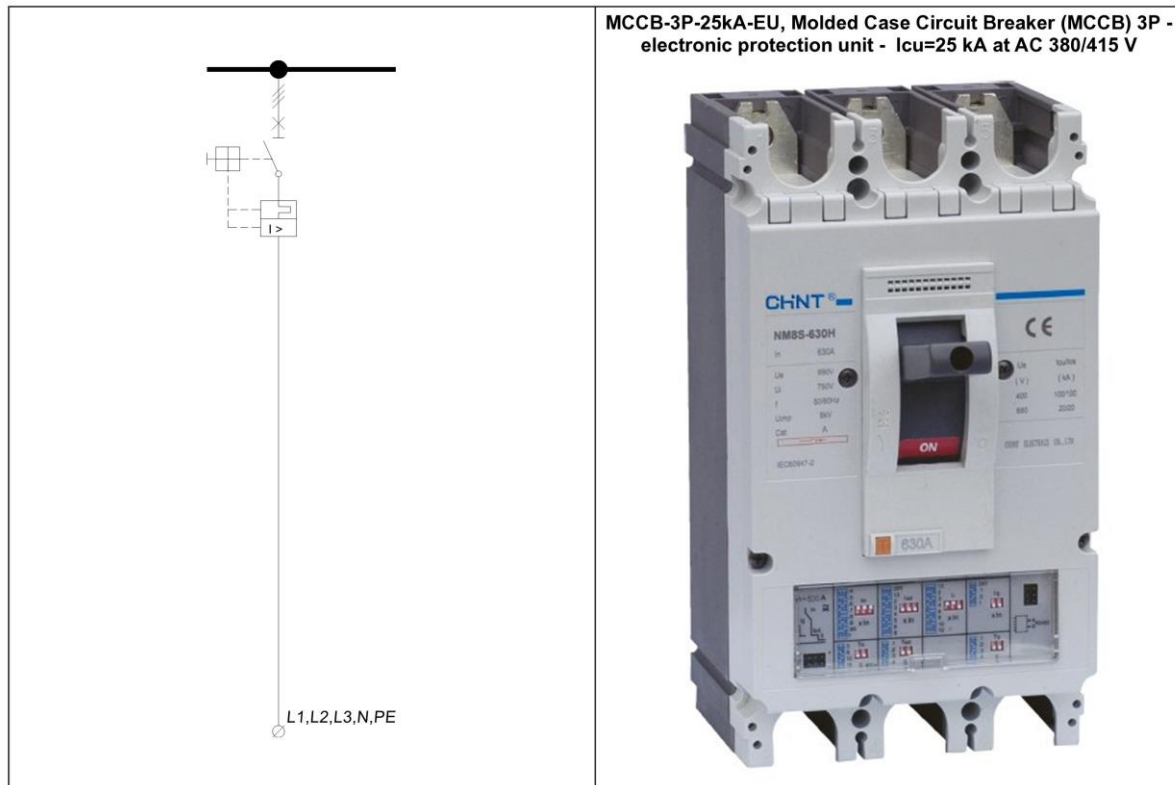
Category Three-phase Feeders

	<p>SWIDR301, Switch disconnector - DIN rail - 3 pole</p> 
	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>RCD-4P-AC30, Residual Current Protective Device - Type AC - IDn=30mA - 4-pole</p> 

Description 3p fuse-disconnector with NH fuses
Category Three-phase Feeders



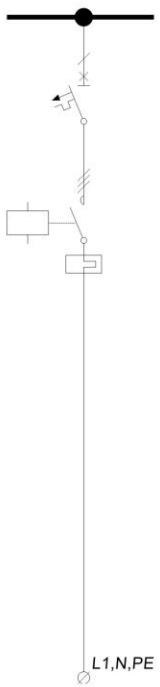


Description 3p MCCB fixed version
Category Three-phase Feeders



Low Voltage (LV)

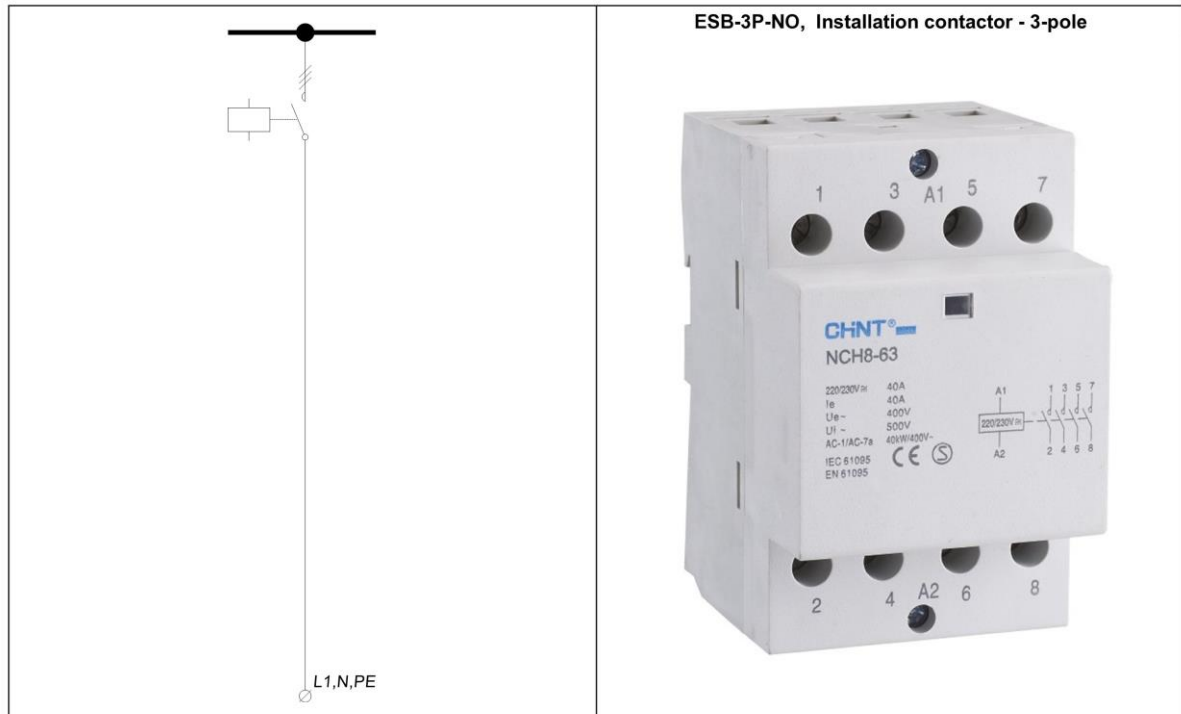
5. Single-phase Motor starter

Description 1Ph Motors
Category Single-phase Motor starter

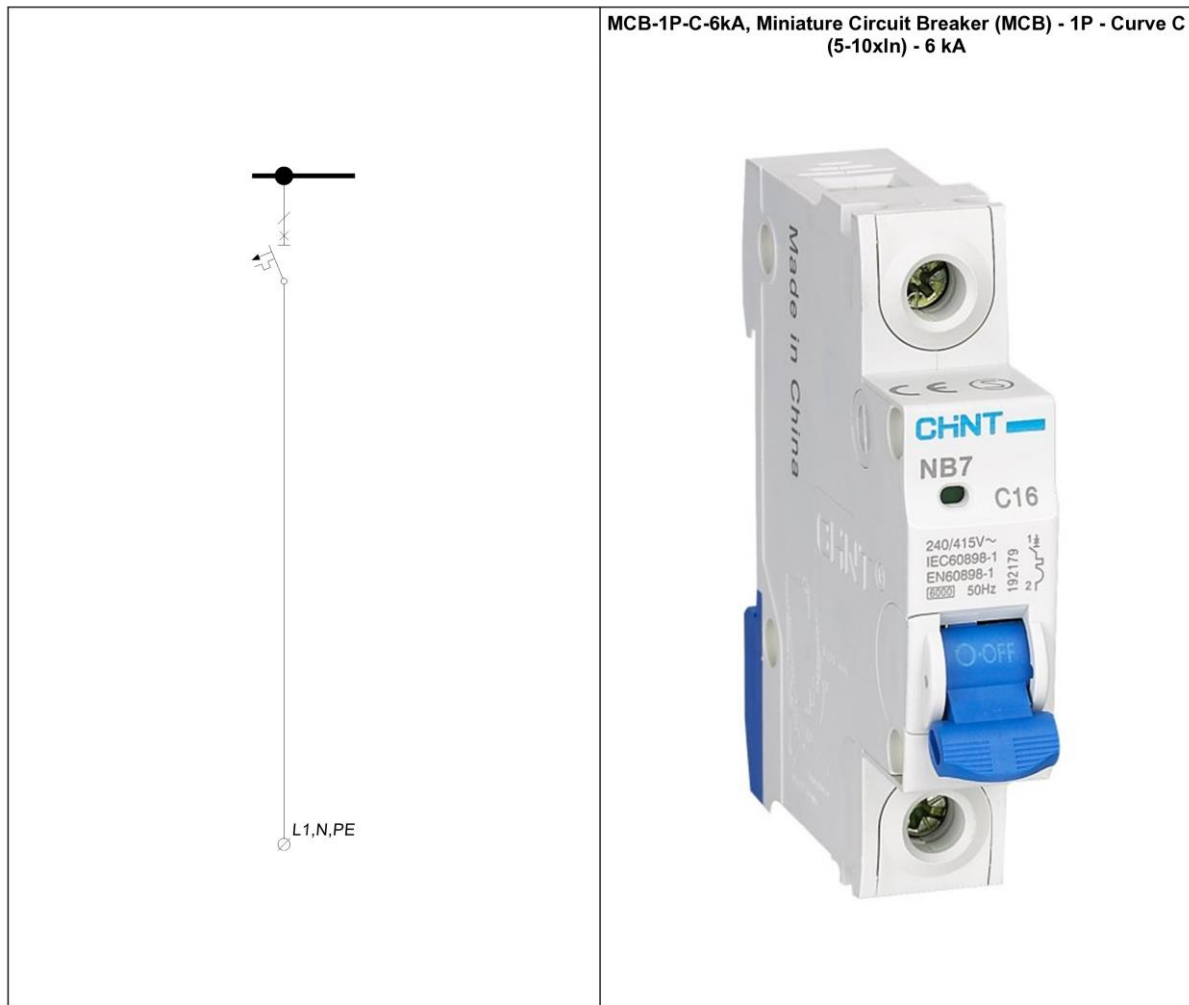
	<p>MCB-1P-B-6kA, Miniature circuit breaker (MCB) - 1P - curve B (3-5I_n) - 6 kA</p> 
	<p>MSDOL301, 3-pole Contactor with thermal relay</p> 

Description

Category Single-phase Motor starter

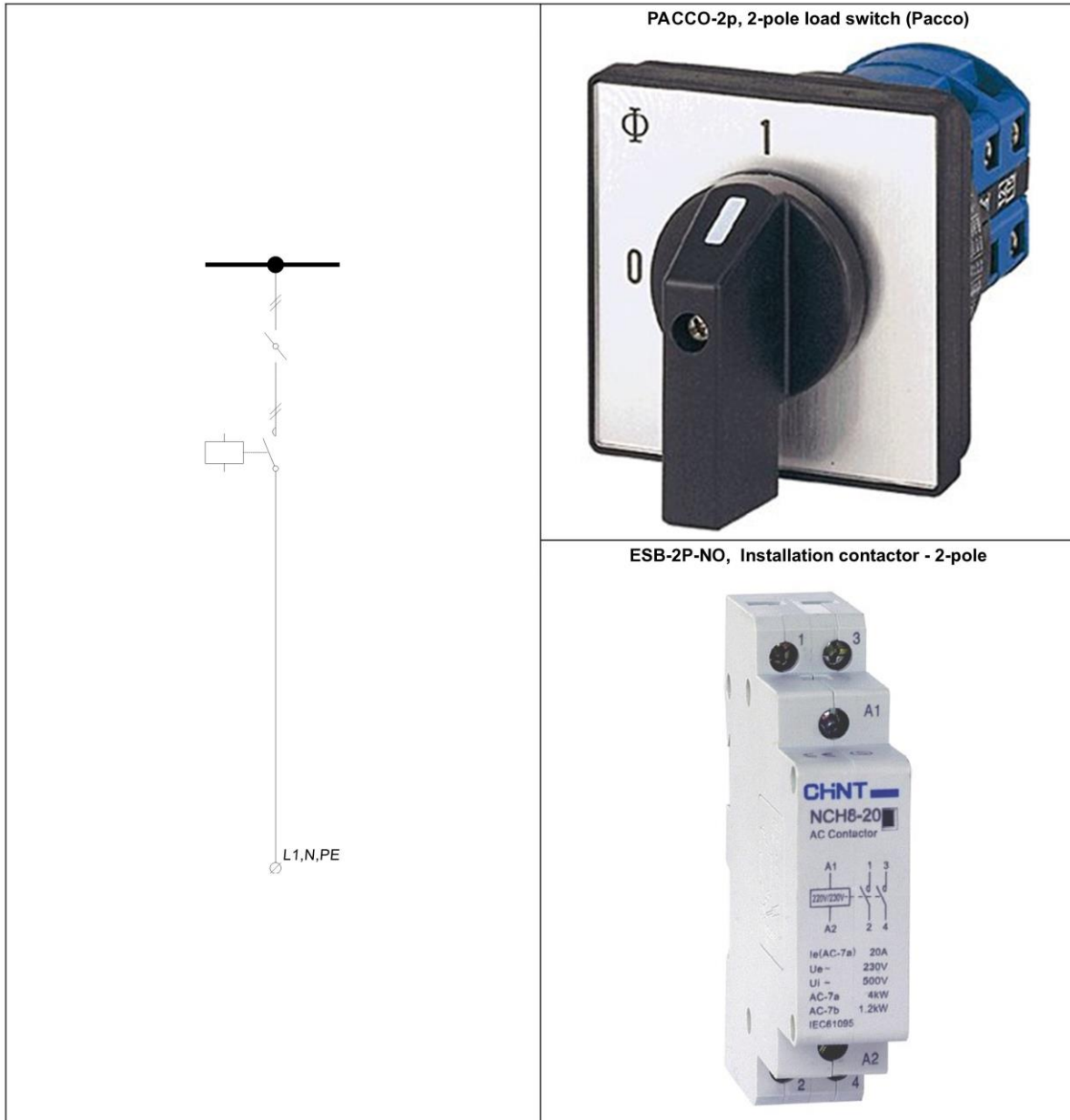


Description 1Ph Motors
Category Single-phase Motor starter

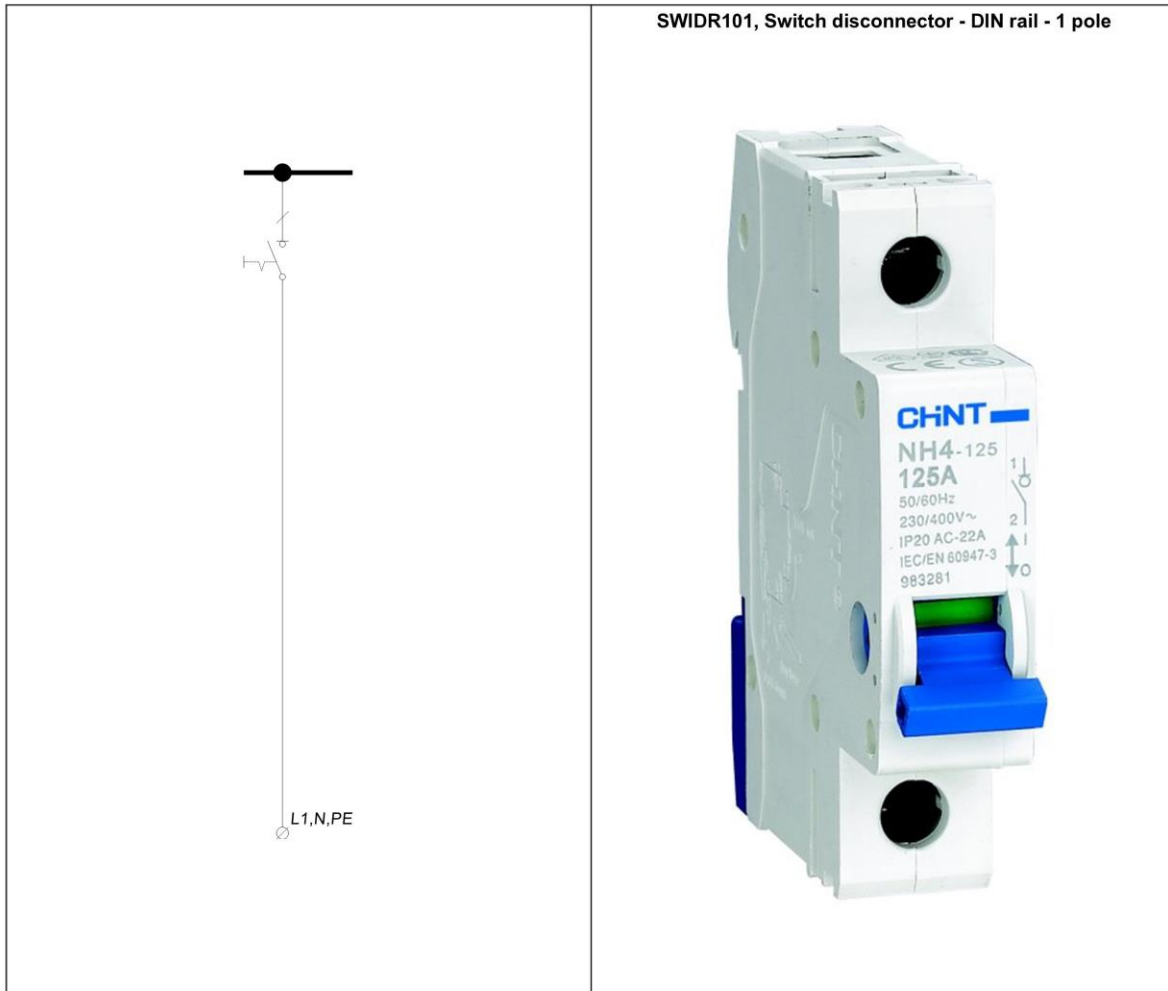


Description

Category Single-phase Motor starter

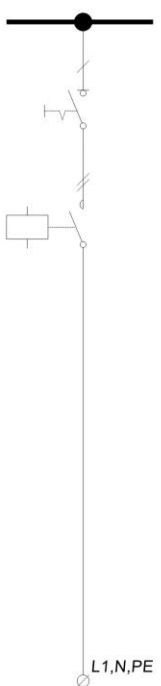




Description 1Ph Motors
Category Single-phase Motor starter



Description

Category Single-phase Motor starter

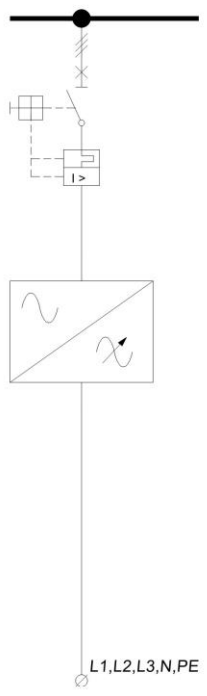


	<p>SWIDR101, Switch disconnector - DIN rail - 1 pole</p> 
	<p>ESB-2P-NO, Installation contactor - 2-pole</p> 

Low Voltage (LV)

6. Three-phase direct-on-line motor starter

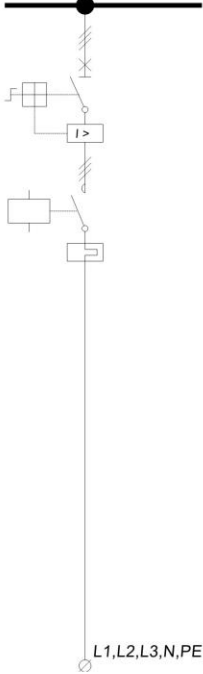


Description

Category Three-phase direct-on-line motor starter

 <p>L1,L2,L3,N,PE</p>	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p> 
	<p>MSINV301, Variable speed controllers for asynchronous motors</p> 

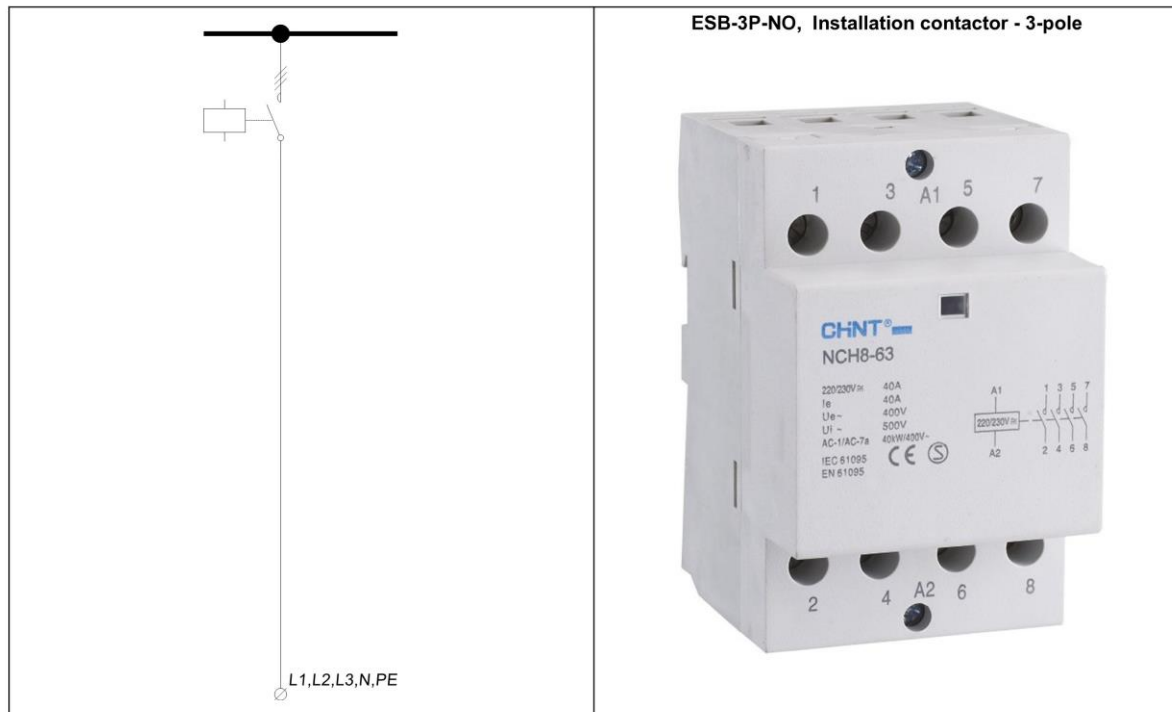
Description

Category Three-phase direct-on-line motor starter

	<p>MMSMO301, Manual motor starter with magnetic protection only</p> 
	<p>MSDOL301, 3-pole Contactor with thermal relay</p> 

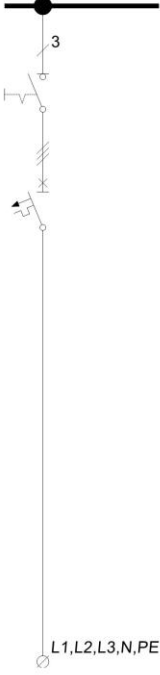


Description

Category Three-phase direct-on-line motor starter



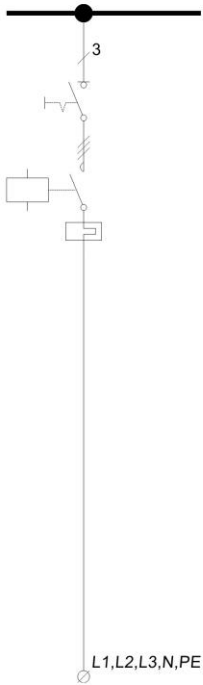


Description 3Ph Motors DOL

Category Three-phase direct-on-line motor starter

 <p>L1,L2,L3,N,PE</p>	<p>SWDR301, Switch disconnector - DIN rail - 3 pole</p>  <p>CHNT NH4-125 125A 50/60Hz 400V~ IP20 AC-22A IEC60947-3 983283</p>
	<p>MCB-3P-C-6kA, Miniature Circuit Breaker (MCB) - 3P - Curve C (5-10xIn) - 6 kA</p>  <p>CHNT NB7 C63 415V~ IEC60898-1 EN60898-1 50Hz 102203</p>

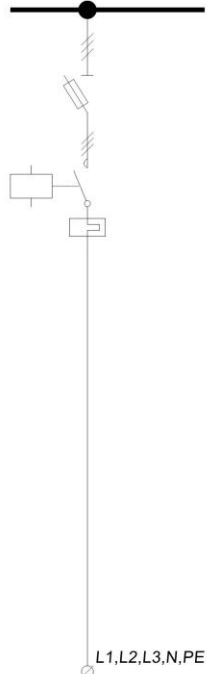


Description

Category Three-phase direct-on-line motor starter

 <p>L1,L2,L3,N,PE</p>	<p>SWIDR301, Switch disconnector - DIN rail - 3 pole</p> 
	<p>MSDOL301, 3-pole Contactor with thermal relay</p> 

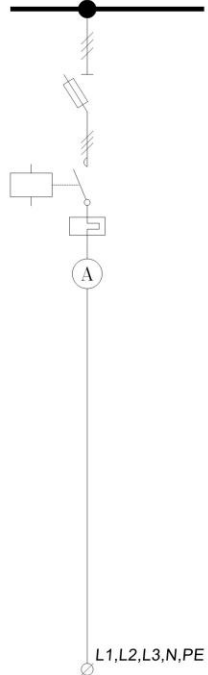



Description

Category Three-phase direct-on-line motor starter

 <p>L1,L2,L3,N,PE</p>	<p>FD-3P-CYL, Fuse disconnectors, with cylindrical fuse-links, 3-pole</p> 
<p>MSDOL301, 3-pole Contactor with thermal relay</p> 	

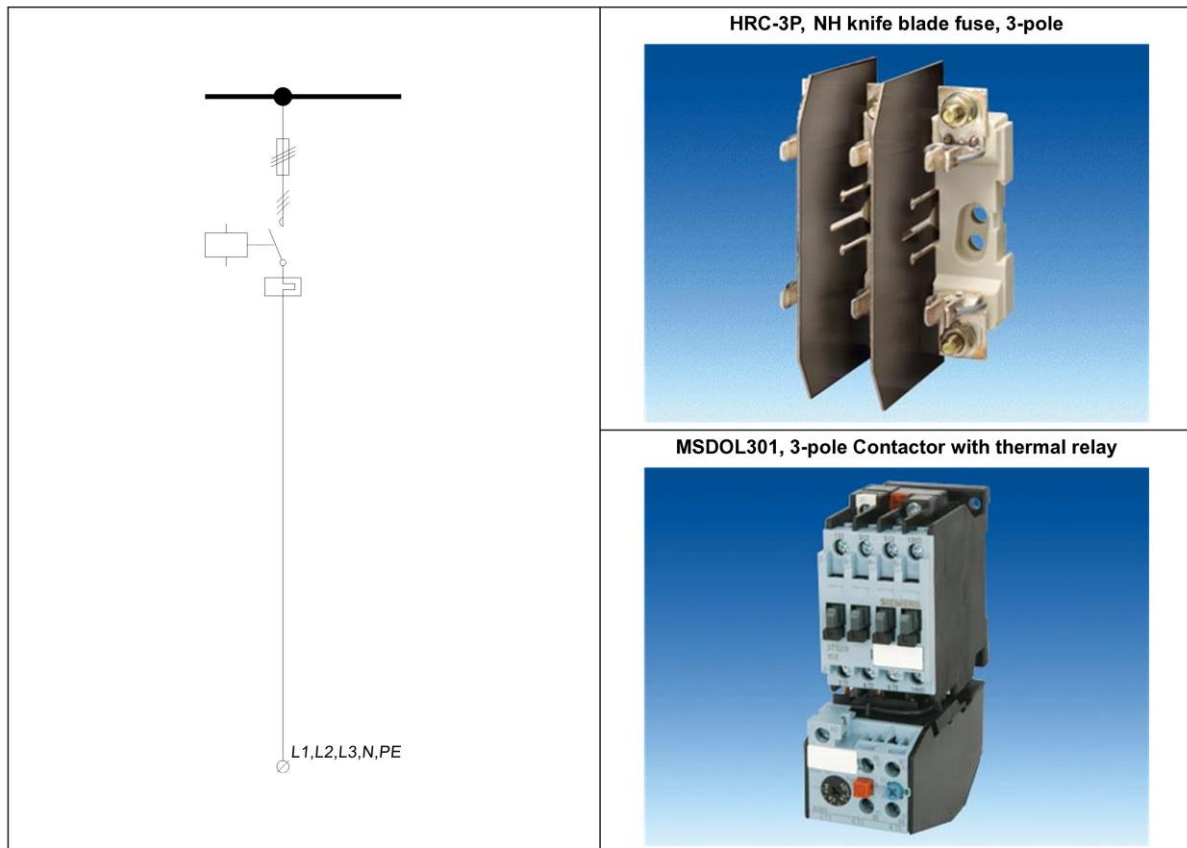
Description

Category Three-phase direct-on-line motor starter

	<p>FD-3P-CYL, Fuse disconnectors, with cylindrical fuse-links, 3-pole</p> 
	<p>MSDOL301, 3-pole Contactor with thermal relay</p> 
	<p>AM-ANA-DIN-104, Analog Ammeter - DIN rail - direct connected</p> 

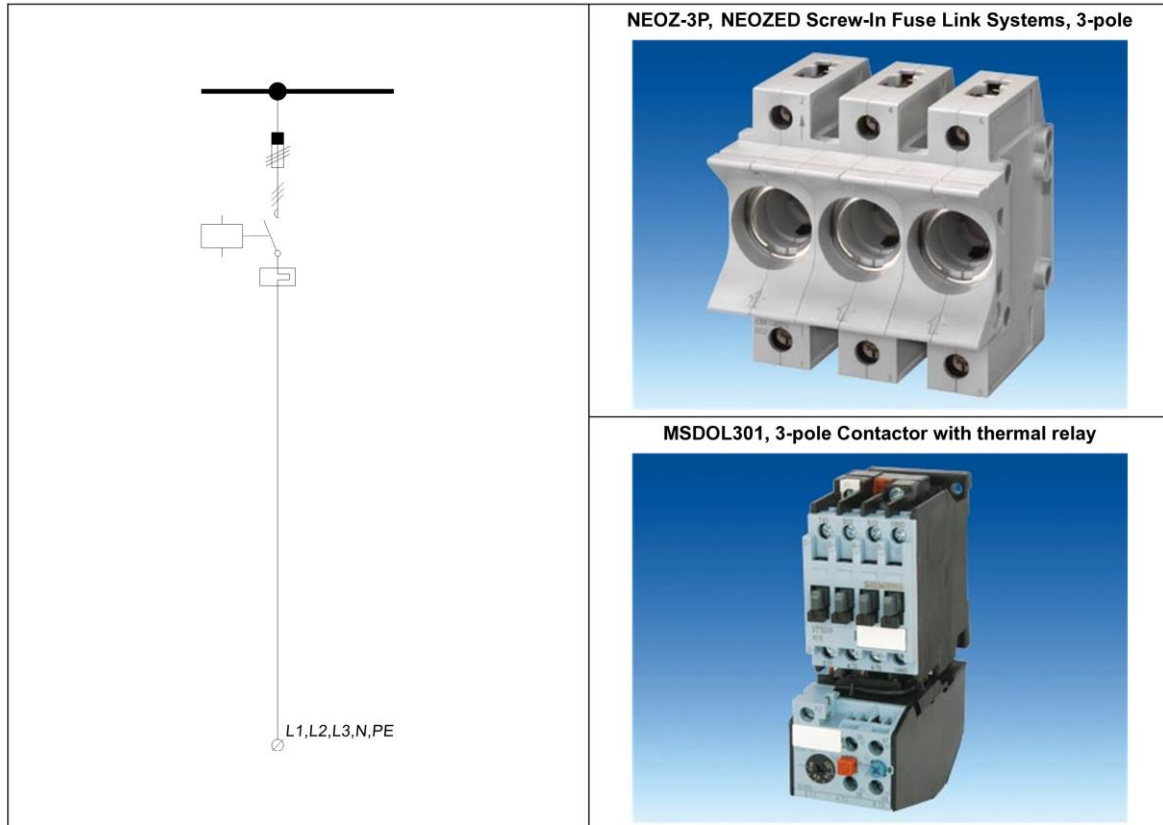
Description

Category Three-phase direct-on-line motor starter



Description

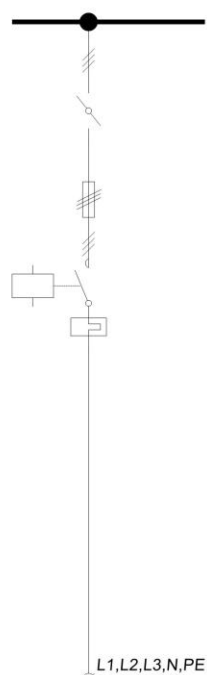



Category Three-phase direct-on-line motor starter



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Description

Category Three-phase direct-on-line motor starter

	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>HRC-3P, NH knife blade fuse, 3-pole</p> 
	<p>MSDOL301, 3-pole Contactor with thermal relay</p> 

Description

Category Three-phase direct-on-line motor starter

	<p>PACCO-3p, 3-pole load switch (Pacco)</p>
	<p>HRC-3P, NH knife blade fuse, 3-pole</p>
	<p>MSDOL301, 3-pole Contactor with thermal relay</p>
	<p>AM-CT-96x96-201, Analog Ammeter - front panel mount - 96x96mm - transformer operated</p>

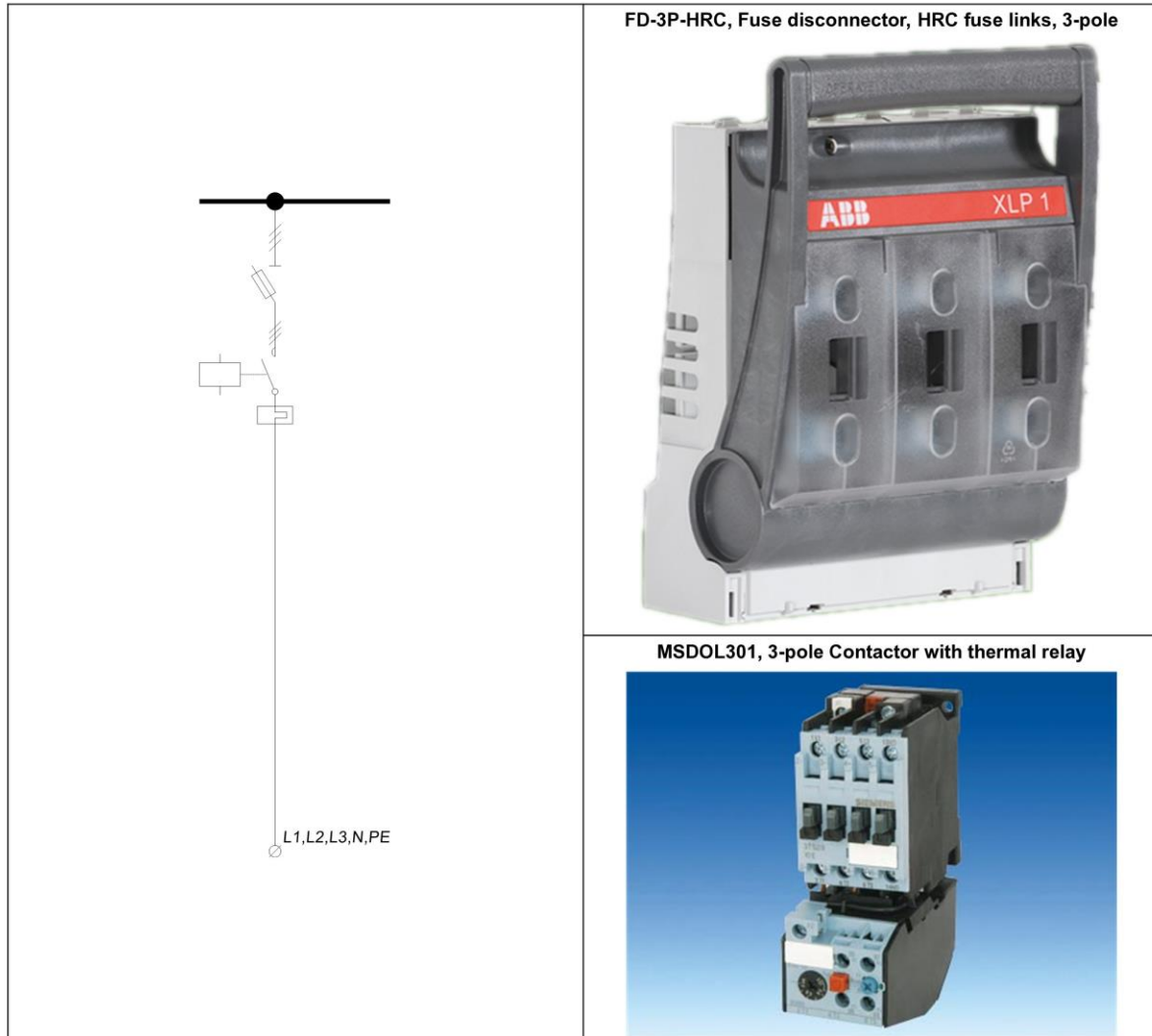
Description

Category Three-phase direct-on-line motor starter

	<p>PACCO-3p, 3-pole load switch (Pacco)</p>
	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p>
	<p>MSDOL301, 3-pole Contactor with thermal relay</p>

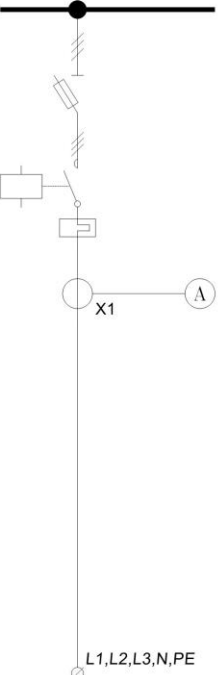



Description

Category Three-phase direct-on-line motor starter



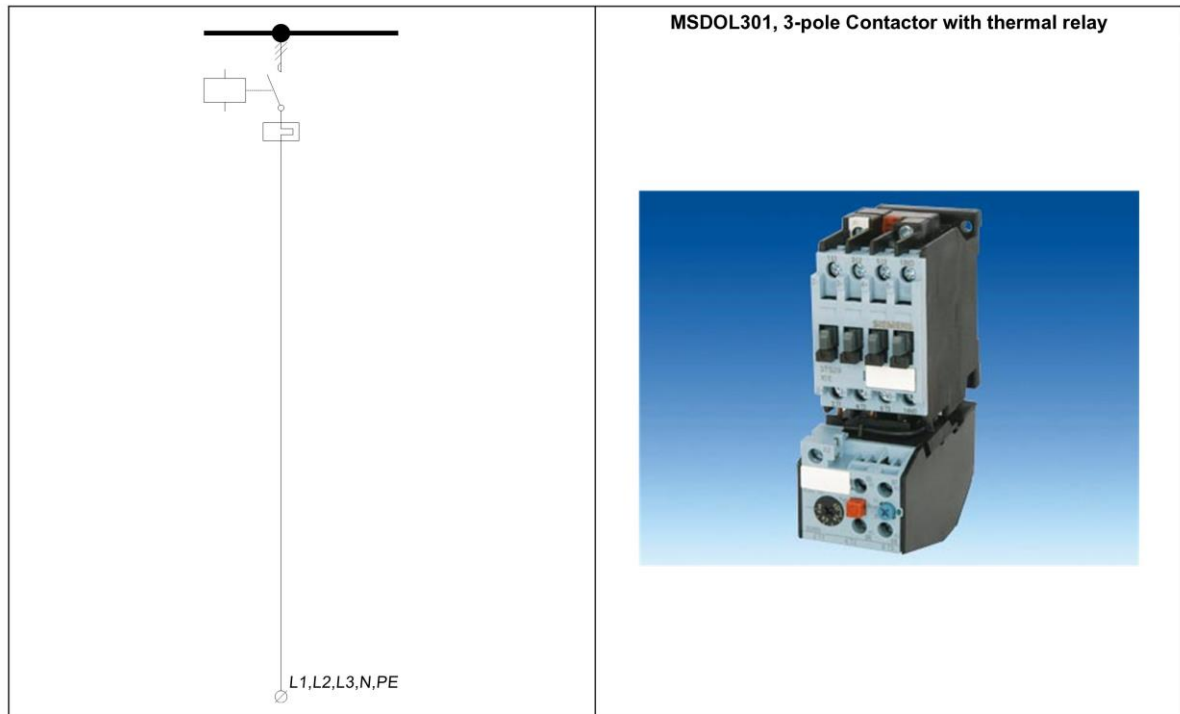
Description

Category Three-phase direct-on-line motor starter

	<p>FD-3P-HRC, Fuse disconnecter, HRC fuse links, 3-pole</p> 
	<p>MSDOL301, 3-pole Contactor with thermal relay</p> 
	<p>AM-CT-96x96-201, Analog Ammeter - front panel mount - 96x96mm - transformer operated</p> 

Description

Category Three-phase direct-on-line motor starter

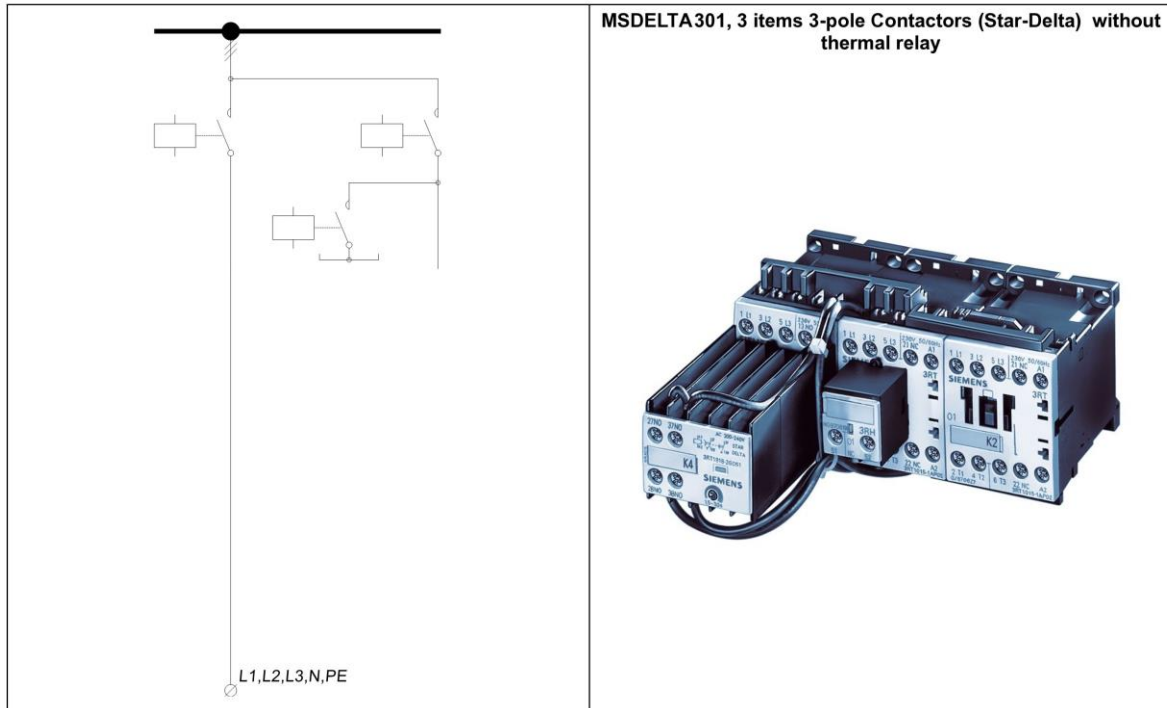


Low Voltage (LV)

7. Three-phase start-delta motor starter

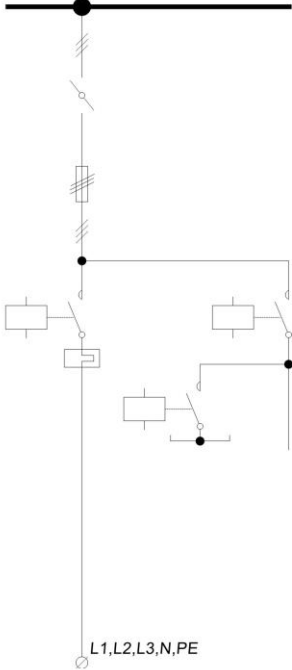


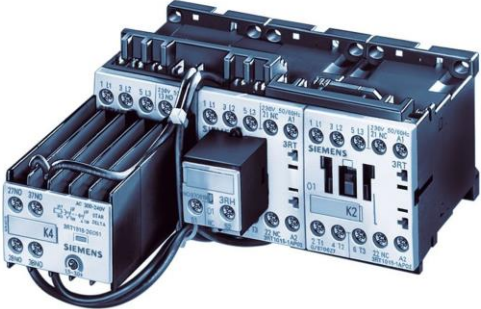
Description

Category Three-phase start-delta motor starter



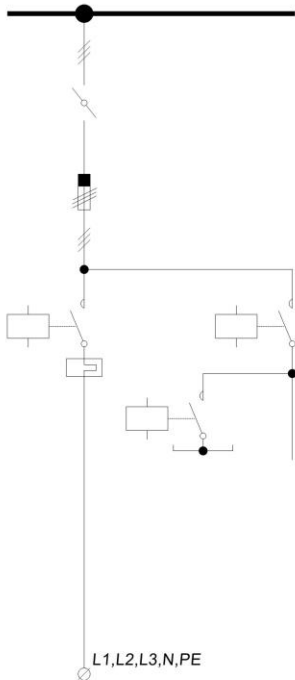



Description

Category Three-phase start-delta motor starter

 <p>L1,L2,L3,N,PE</p>	<p>PACC0-3p, 3-pole load switch (Pacco)</p> 
	<p>HRC-3P, NH knife blade fuse, 3-pole</p> 
	<p>MSDELTA302, 3-pole Contactors in Star-Delta with thermal relay</p> 

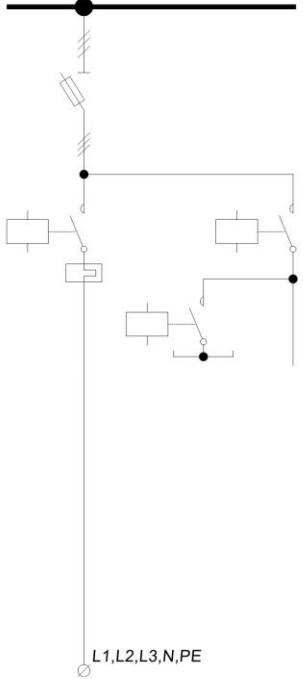


Description

Category Three-phase start-delta motor starter

	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>MSDELTA302, 3-pole Contactors in Star-Delta with thermal relay</p> 

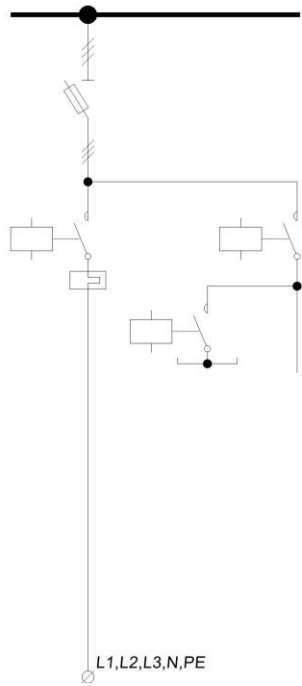

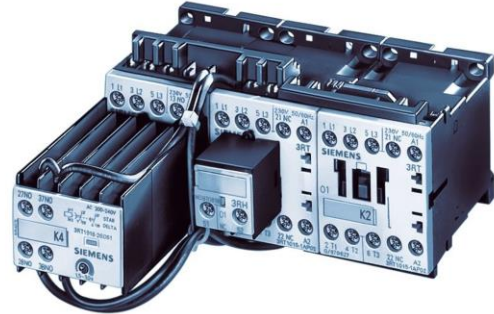
Description

Category Three-phase start-delta motor starter

 <p>L1,L2,L3,N,PE</p>	<p>FD-3P-HRC, Fuse disconnecter, HRC fuse links, 3-pole</p>  <p>MSDELTA302, 3-pole Contactors in Star-Delta with thermal relay</p> 
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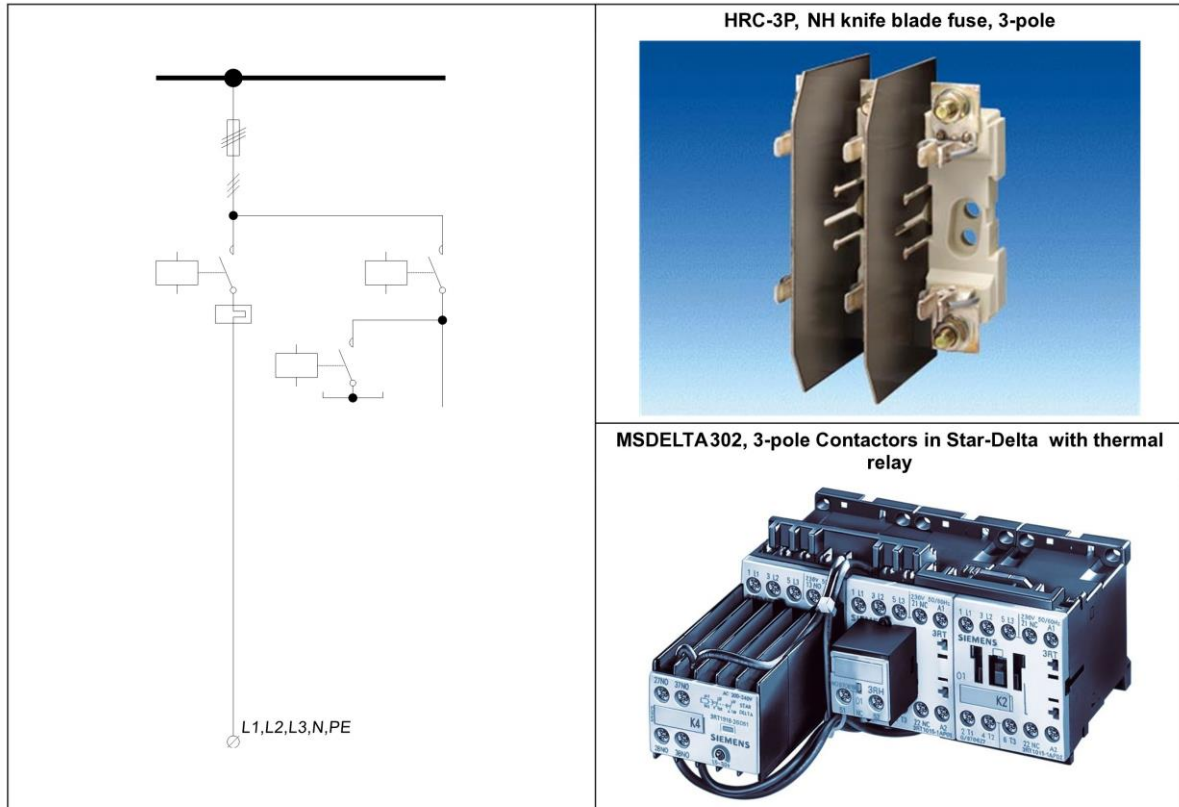
Description

Category Three-phase start-delta motor starter

	<p>FD-3P-CYL, Fuse disconnectors, with cylindrical fuse-links, 3-pole</p> 
<p>MSDELTA302, 3-pole Contactors in Star-Delta with thermal relay</p> 	

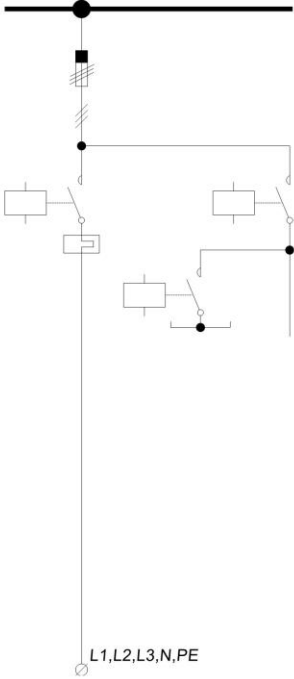

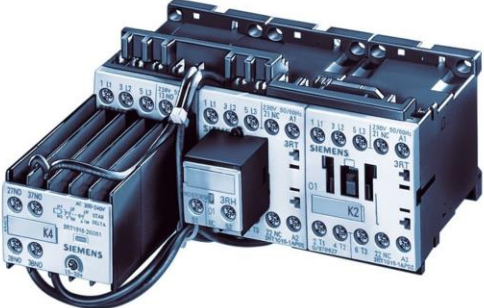
Description

Category Three-phase start-delta motor starter



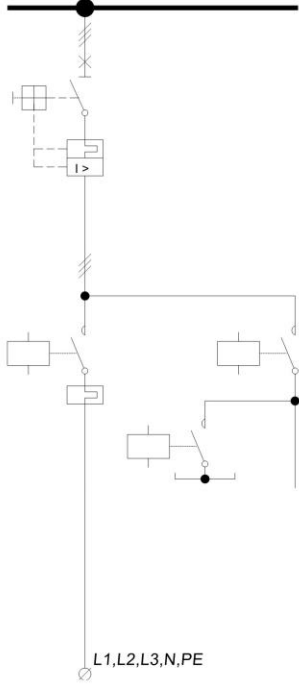

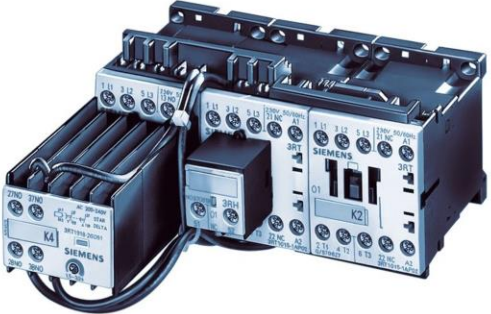
Description

Category Three-phase start-delta motor starter

 <p>L1,L2,L3,N,PE</p>	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>MSDELTA302, 3-pole Contactors in Star-Delta with thermal relay</p> 

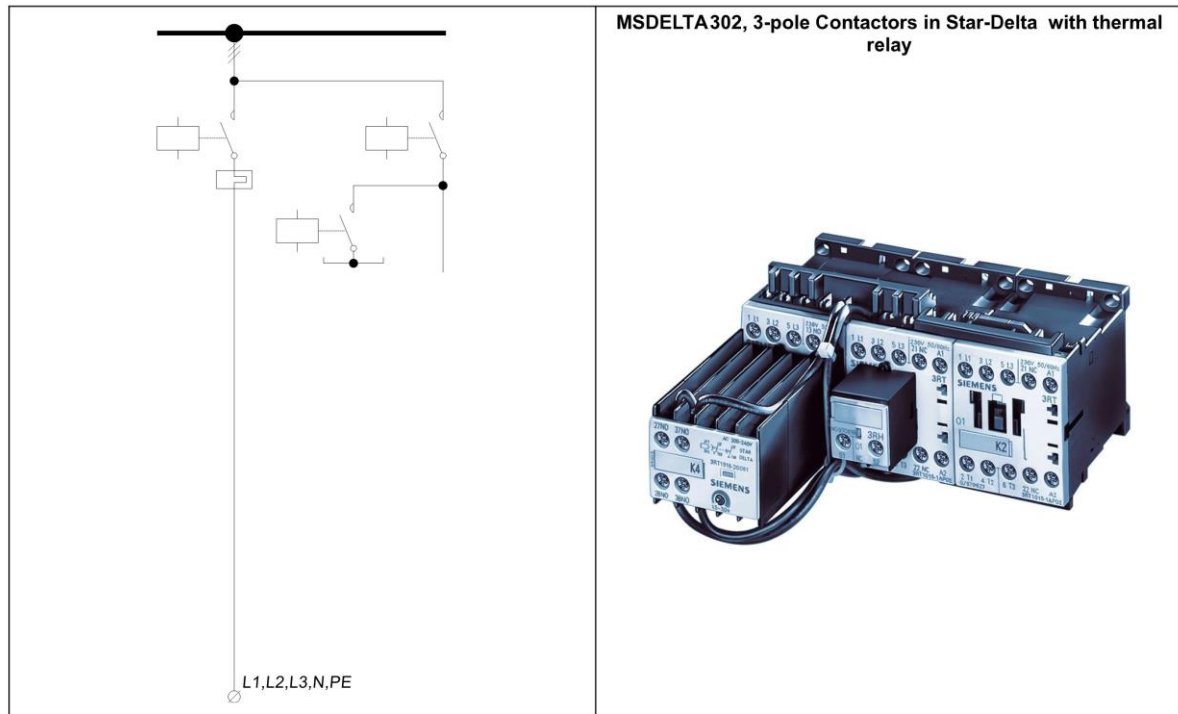
Description 3Ph Motors Y-D

Category Three-phase start-delta motor starter

 <p>L1,L2,L3,N,PE</p>	<p>MCCB-3P-25kA-EU, Molded Case Circuit Breaker (MCCB) 3P - electronic protection unit - Icu=25 kA at AC 380/415 V</p> 
<p>MSDELTA302, 3-pole Contactors in Star-Delta with thermal relay</p> 	

Description

Category Three-phase start-delta motor starter

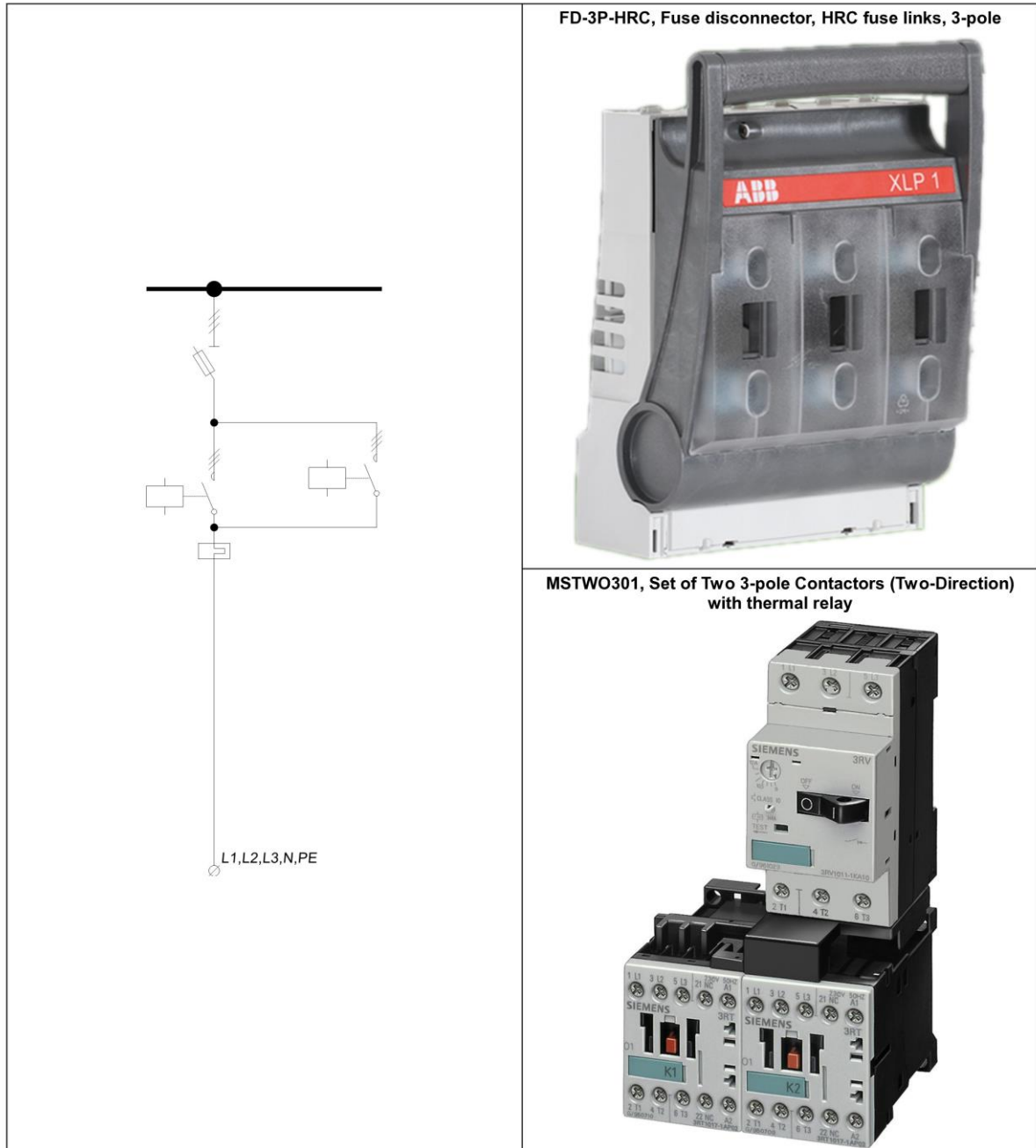


Low Voltage (LV)

8. Three-phase two directions motor starter

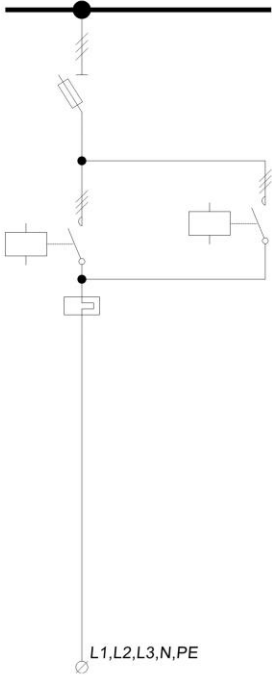


Description

Category Three-phase two directions motor starter



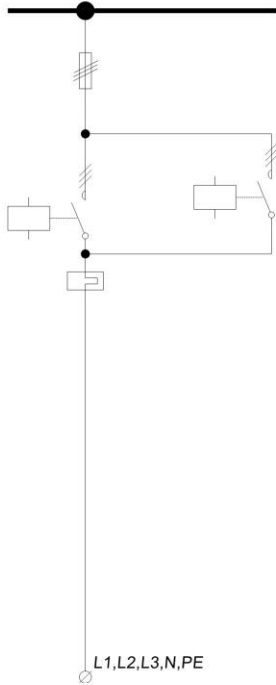


Description

Category Three-phase two directions motor starter

 <p>L1,L2,L3,N,PE</p>	<p>FD-3P-CYL, Fuse disconnectors, with cylindrical fuse-links, 3-pole</p> 
<p>MSTWO301, Set of Two 3-pole Contactors (Two-Direction) with thermal relay</p> 	

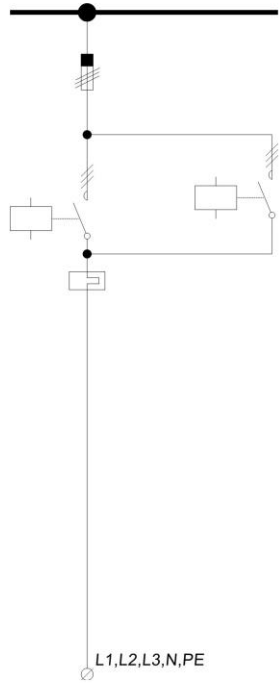


Description

Category Three-phase two directions motor starter

	<p>HRC-3P, NH knife blade fuse, 3-pole</p>  <p>MSTWO301, Set of Two 3-pole Contactors (Two-Direction) with thermal relay</p> 
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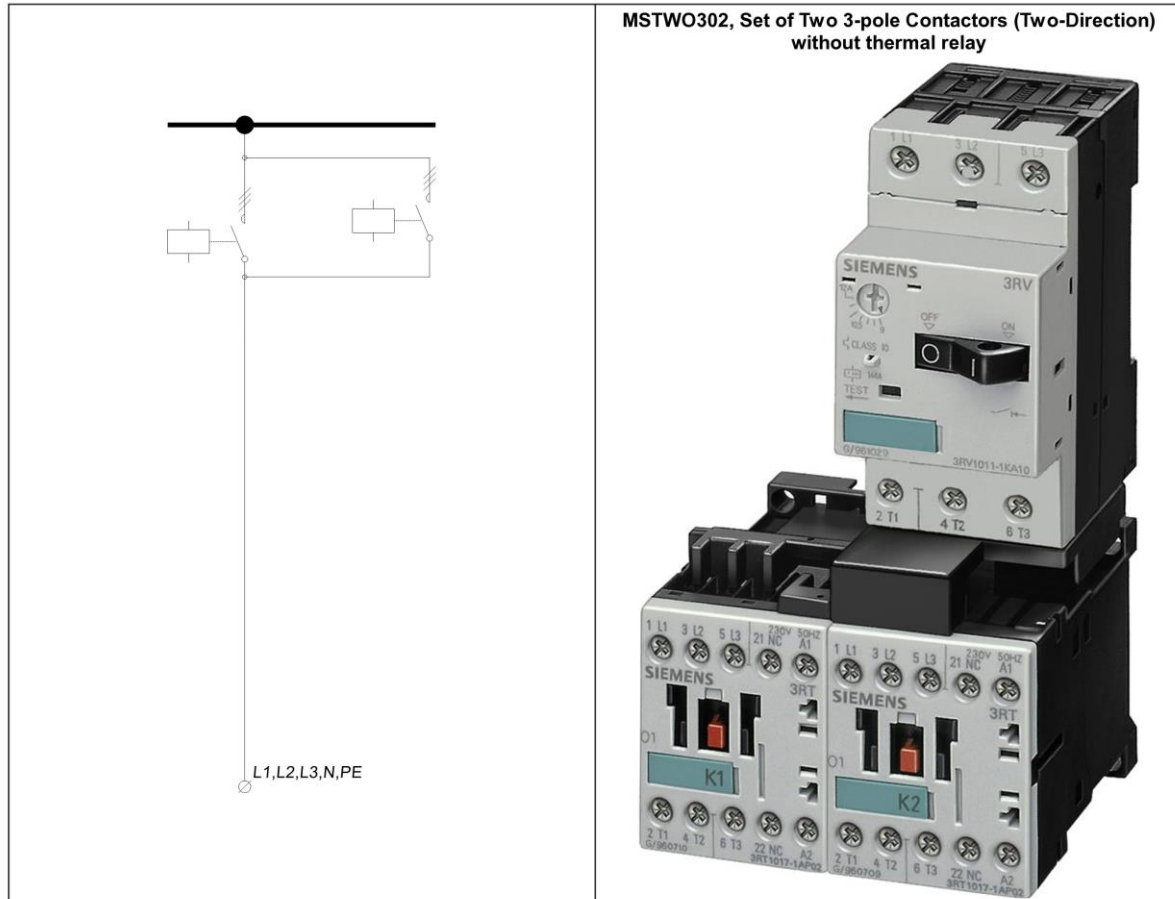
Description

Category Three-phase two directions motor starter

	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p>  <p>MSTWO301, Set of Two 3-pole Contactors (Two-Direction) with thermal relay</p> 
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Description

Category Three-phase two directions motor starter



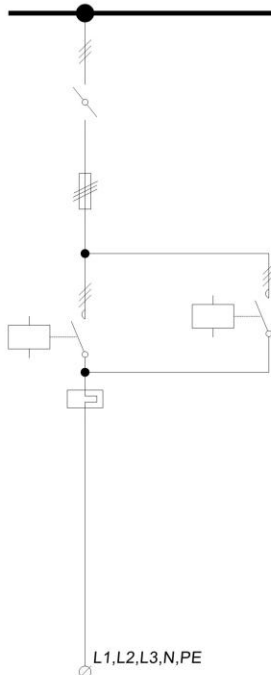

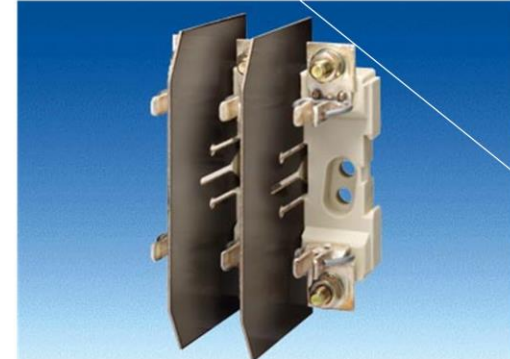

Description

Category Three-phase two directions motor starter

	<p>MMSMO301, Manual motor starter with magnetic protection only</p>
	<p>MSTWO301, Set of Two 3-pole Contactors (Two-Direction) with thermal relay</p>

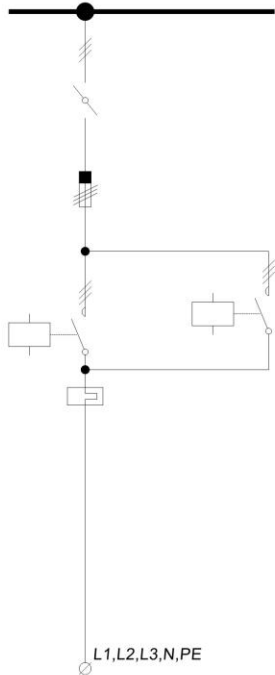



Description

Category Three-phase two directions motor starter

 <p>L1,L2,L3,N,PE</p>	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>HRC-3P, NH knife blade fuse, 3-pole</p> 
	<p>MSTWO301, Set of Two 3-pole Contactors (Two-Direction) with thermal relay</p> 

Description

Category Three-phase two directions motor starter

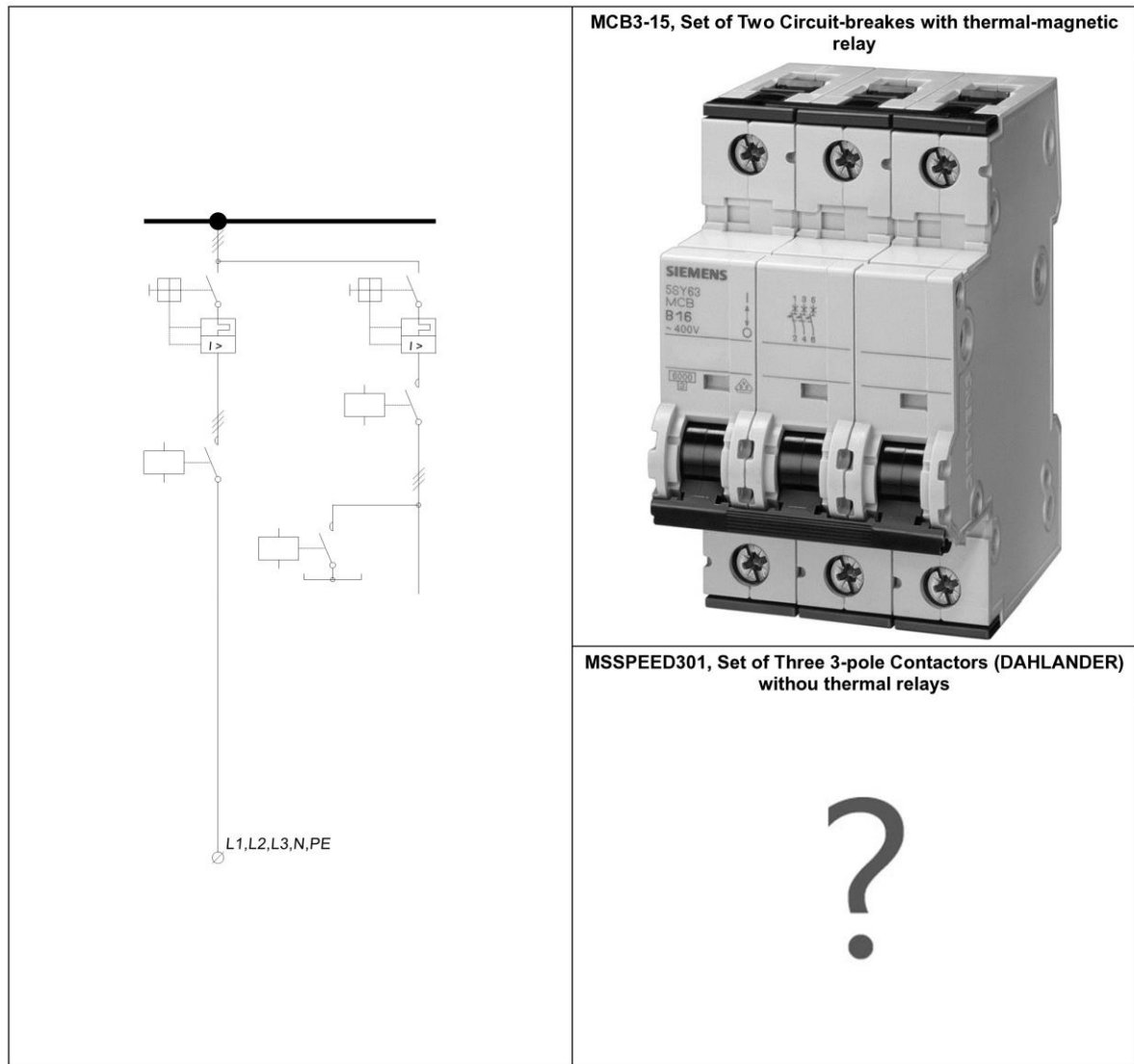
	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>NEOZ-3P, NEOZED Screw-In Fuse Link Systems, 3-pole</p> 
	<p>MSTWO301, Set of Two 3-pole Contactors (Two-Direction) with thermal relay</p> 

Low Voltage (LV)

9. Three-phase two speeds motor starter

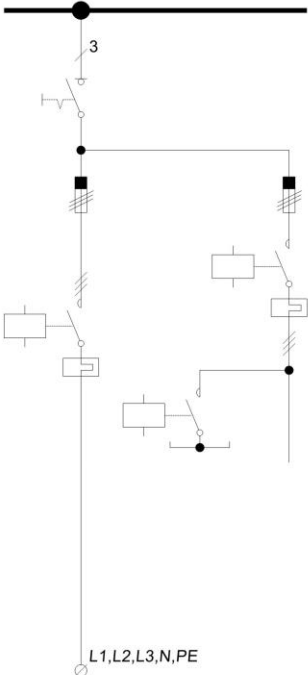



Description

Category Three-phase two speeds motor starter



Description

Category Three-phase two speeds motor starter

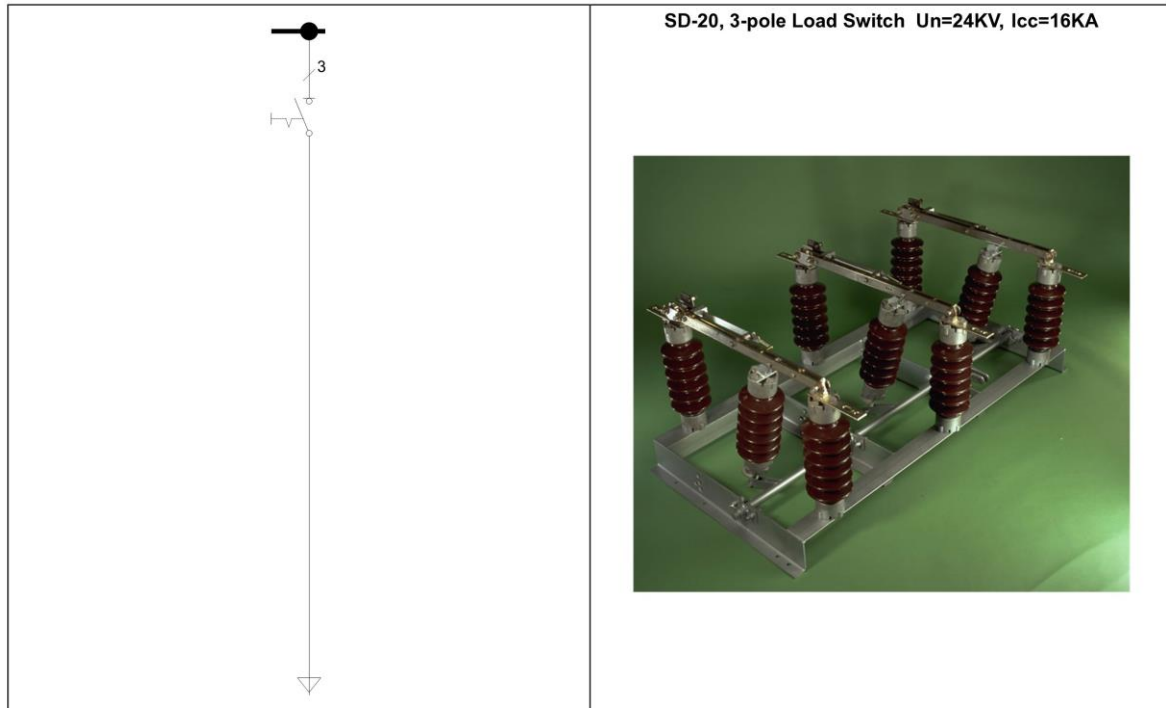
	<p>PACCO-3p, 3-pole load switch (Pacco)</p> 
	<p>FU.04.01, 2 sets of 3-pole fuse EZ type</p> 
	<p>MSSPEED302, Set of Three 3-pole Contactors (DAHLANDER) with Two thermal relays</p> 

Medium Voltage (MV)

1. Incomer cubicles

Description

Category Incomer cubicles





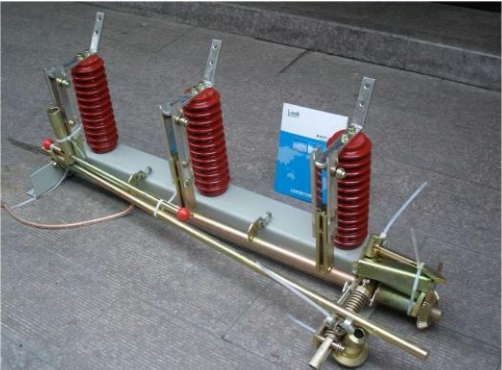
www.BelghisAzar.ir

Medium Voltage (MV)

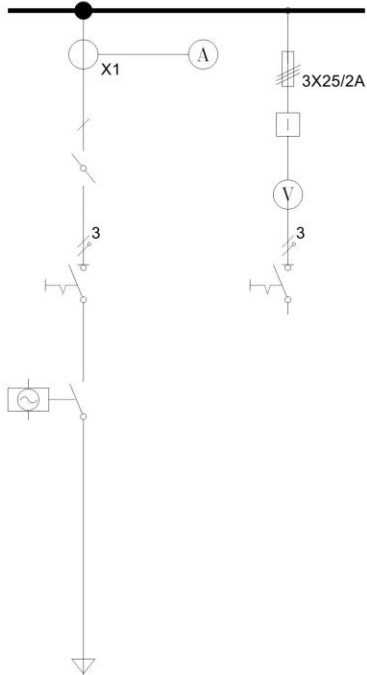





2. Feeder cubicles

Description

Category Feeder cubicles

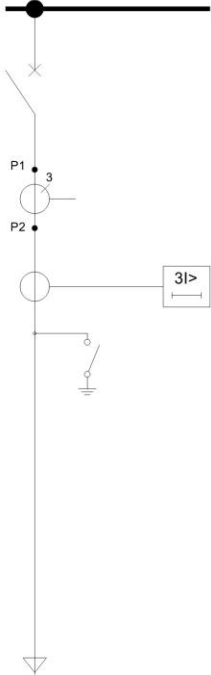




	<p>SFD-20, 3-pole Fuse-Load Switch Un=24KV, Icc=16KA</p> 
	<p>EARTH, 3-pole Earth switch Un=20KV</p> 

Description Outgoing cubicles
Category Feeder cubicles

	<p>VLM-ANA-96X96-102, Analog Voltmeter - 96x96mm - fuse protected - selector switch - busbar side</p> 
	<p>AM-ANA-DIN-CT-101, Analog Ammeter - DIN rail - transformer connected</p> 
	<p>LS 1pole, 1-pole load switch (Pacco)</p> 
	<p>SW.07.04, TWO 4-POLES LOAD SWITCHES</p> 
	<p>TIM-101, Programmable analog time-switch with contact 250V/16A</p> 

Description

Category Feeder cubicles

	<p>MVCBF, Medium voltage circuit-breaker - fixed version</p> 
	<p>THREE CTs, Three Medium Voltage current transformers (CTs)</p> 
	<p>CT+RELAY, 3 Current Transformers Un=24KV with overcurrent relay constant time</p> 
	<p>EARTH, 3-pole Earth switch Un=20KV</p> 

Description
Category Feeder cubicles

<p>The diagram shows a vertical feeder cubicle. At the top, a horizontal busbar is connected to a circuit breaker. Below the breaker are three current transformers (CTs) labeled P1, 3, and P2. A relay is connected to the CTs, with a label '3 >' indicating three poles. At the bottom, there is an earth switch connected to ground.</p>	<p>MVCBTM, Medium voltage circuit-breaker - tract mounted</p>
	<p>THREE CTs, Three Medium Voltage current transformers (CTs)</p>
	<p>CT+RELAY, 3 Current Transformers Un=24KV with overcurrent relay constant time</p>
	<p>EARTH, 3-pole Earth switch Un=20KV</p>

Electrical Single Line Diagram



- Iranian Organization for Engineering Order of Building / FIELD: Electrical Engineer
- Iranian Association Official Experts / FIELD: Electronics and Telecommunication
- Master of Electrical Engineering – Electronics (Azarbaijan Shahid Madani University)