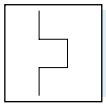
Wiring diagrams
Information on how to read the diagrams

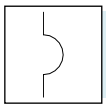
Shown

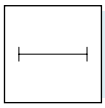
The diagrams are shown in the following conditions:
- fixed version circuit breaker, open;
- withdrawable or plug-in version circuit breaker, open and connected;
- contactor for starting the motor open;
- circuits de-energized;
- trip units not tripped;
- motor operator with springs charged.

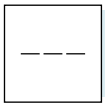
The diagram shows a circuit breaker or a switch-disconnector in the withdrawable or plug-in version, but is also valid for fixed version circuit breakers or switch-disconnectors.
For fixed version circuit breakers, auxiliary circuits are headed at terminal box XV: connectors J.. and XB.., XC.., XD.. and XE.. are not supplied.
For plug-in version circuit breakers, auxiliary circuits are headed at connectors XB.., XC.., XD.. and XE..: connectors J.. are not supplied.
For withdrawable version circuit breakers, auxiliary circuits are headed at connectors J..: connectors XB.., XC.., XD.. and XE.. are not supplied.

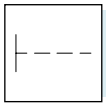
Wiring diagrams
Graphic symbols (IEC 60617 and CEI 3-14 ...3-26 Standards)

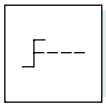

Thermal effect

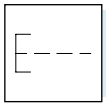

Electromagnetic effect

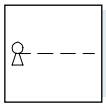

Timing

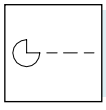

Mechanical connection

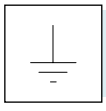

Manual mechanical operating mechanism (general case)

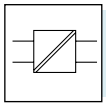

Rotary handle operating mechanism

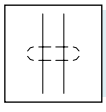

Pushbutton operating mechanism

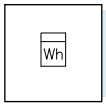

Key operating mechanism


Cam operating mechanism

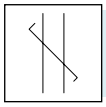

Ground (general symbol)

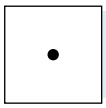

Converter separated galvanically

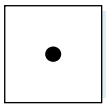

Conductors in shielded cable (example two conductors)

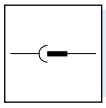


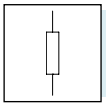
Watt-hour meter

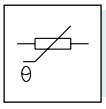

Conductors with corded cables (example two conductors)


Connection of conductors

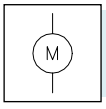

Terminal or clamp


Socket and plug (female and male)

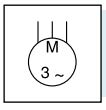

Resistor (general symbol)



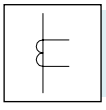
Resistor dependent on the temperature

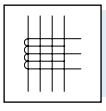


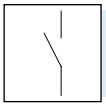
Motor (general symbol)

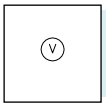


Three-phase asynchronous motor, with short-circuited rotor (cage)

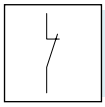

Current transformer

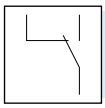

Current transformer with primary consisting of 4 passing conductors and with wound secondary, with socket

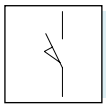

Closing contact

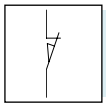


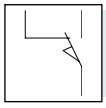
Voltmeter

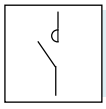

Opening contact

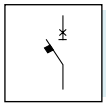

Changeover contact with momentary break

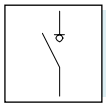

Closing position contact (limit switch)

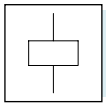

Opening position contact (limit switch)

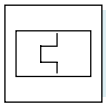

Changeover contact with momentary break (limit switch)

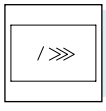

Contactor (closing contact)

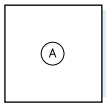

Power cut-off of switch-disconnector power with automatic opening


Switch-disconnector

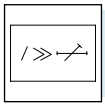

Control coil (general symbol)

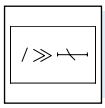

Thermal trip unit

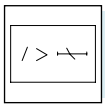

Instantaneous overcurrent release

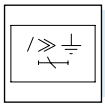


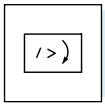
Ammeter
Overcurrent release with

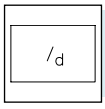

Short adjustable time delay characteristic


Overcurrent release with short inverse adjustable time delay characteristic

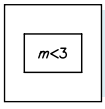

Overcurrent release with long inverse adjustable time delay characteristic


Overcurrent release for earth fault with short inverse time characteristic


Current relay for unbalance between phases

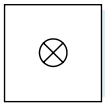


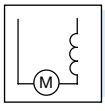
Residual current release



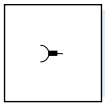
Relay for detecting lack of phase in a three-phase system

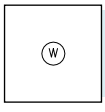

Relay for detecting blocked rotor by means of current measurement


Lamp, general symbol



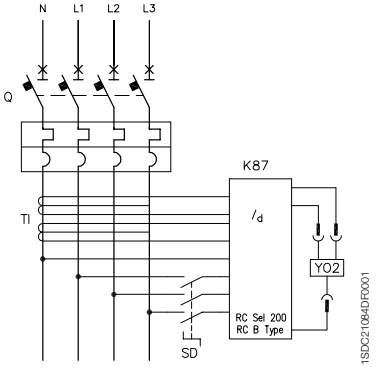
Motor with excitation in series


Brush

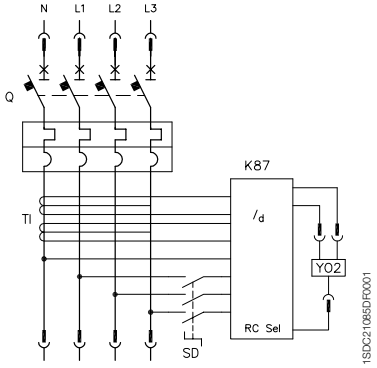


Wattmeter

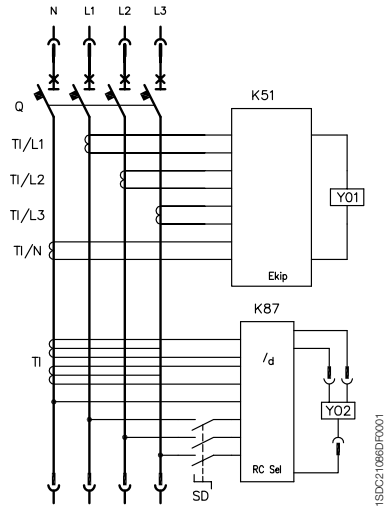
Wiring diagrams of the circuit breakers



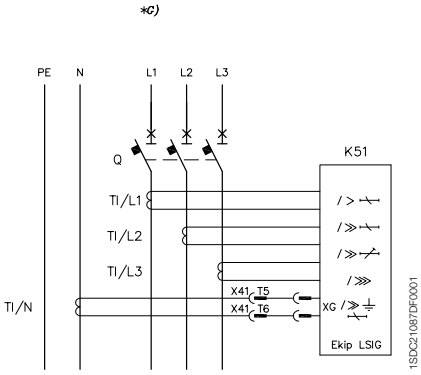
Four-pole circuit breaker with thermal magnetic trip unit and RC Sel 200 or RC B type residual current release



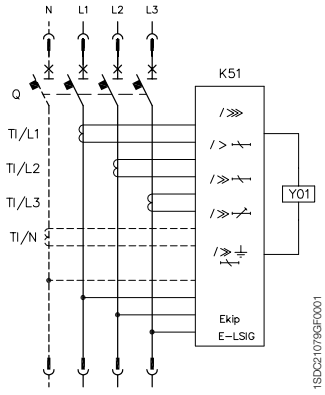
Four-pole circuit breaker with thermal magnetic trip unit and RC Sel residual current release



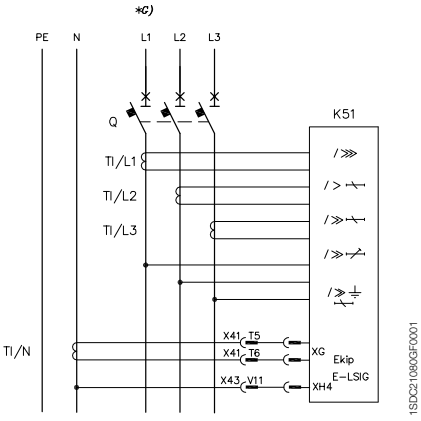
Four-pole circuit breaker with electronic trip unit and RC Sel residual current release



Three-pole fixed version circuit breaker with current transformer on the neutral conductor outside the circuit breaker



Three-pole or four-pole XT4 circuit breaker with Ekip E-LSIG microprocessor based release



Fixed version three-pole XT4 circuit breaker with Ekip E-LSIG with current transformer on neutral conductor, external to circuit breaker

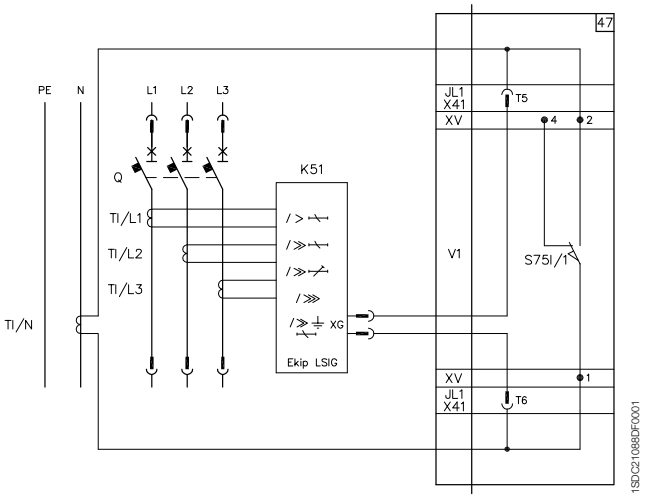
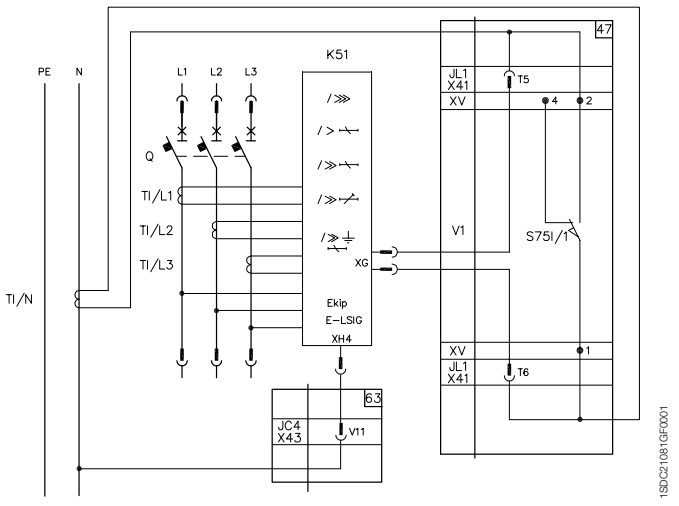


Diagram recommended for three-pole plug-in or withdrawable version circuit breakers with current transformer on the neutral conductor outside the circuit breaker



Recommended diagram for plug-in or withdrawable version three-pole circuit breakers with current transformer and voltage connection on neutral conductor, external to circuit breaker

Description of figures

Fig. 47 = Current transformer circuit on the neutral conductor outside the circuit breaker (for plug-in or withdrawable version circuit breaker).

Fig. 63 = Circuit of the voltage socket on the neutral conductor outside the circuit breaker (for Ekip E_LSIG type microprocessor-based plug-in or withdrawable circuit breaker).

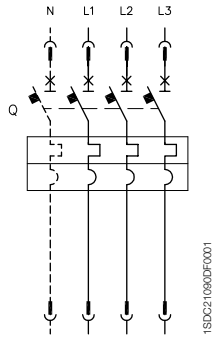
Notes

G) To remove the circuit breaker from a three-pole fixed version with a current transformer on the neutral conductor outside the circuit breaker, the TI/N transformer terminals must be short-circuited.

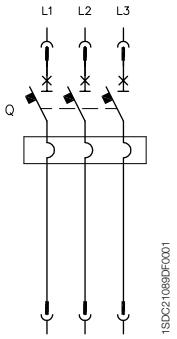
Caption

☐ = Diagram figure number
* = See the note indicated by the letter
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously.
K51 = Electronic trip unit:
– overcurrent release type Ekip I, Ekip LS/I, Ekip N-LS/I, Ekip LSI, Ekip LSIG, Ekip E-LSIG
– of motor protection type Ekip M-LIU
K87 = Residual current release type RC Inst, RC Sel, RC Sel 200, RC B Type
Q = Main circuit breaker
S75I/1..4 = Contacts for electrical signaling of circuit breaker in the connected position (only provided with plug-in or withdrawable version circuit breakers)
S75S/1-2 = Contacts for electrical signaling of circuit breaker in the racked-out position (only provided with withdrawable version circuit breakers)
SD = Power supply switch-disconnector of the residual current release type RC Inst, RC Sel, RC Sel 200 or RC B Type
TI = Toroidal current transformer
TI/L1 = Current transformer placed on phase L1
TI/L2 = Current transformer placed on phase L2
TI/L3 = Current transformer placed on phase L3
TI/N = Current transformer placed on the neutral
V1 = Circuit breaker applications
X41 = Circuit connector for external neutral
XG-XH = Electronic trip unit connectors
XV = Terminal boxes of circuit breaker applications
YO1 = Opening solenoid of the microprocessor-based overcurrent release
YO2 = Opening solenoid of the residual current release

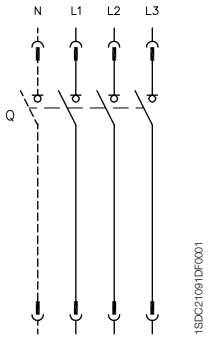
Wiring diagrams of the circuit breakers



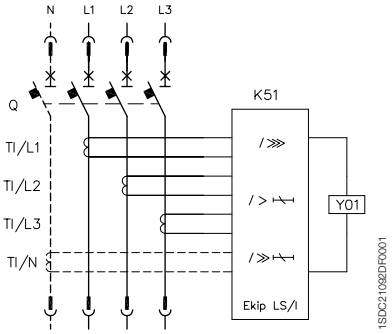
Three-pole or four-pole circuit breaker with TMF or TMA thermal magnetic trip unit



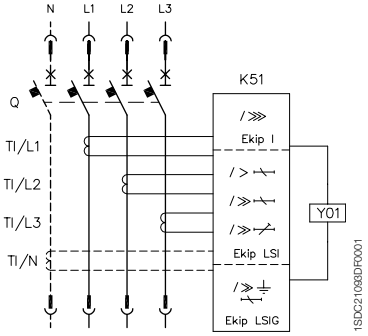
Three-pole circuit breaker with MCP (MA) magnetic trip unit



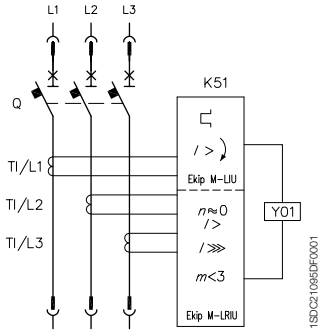
Three-pole or four-pole molded case switch-disconnector



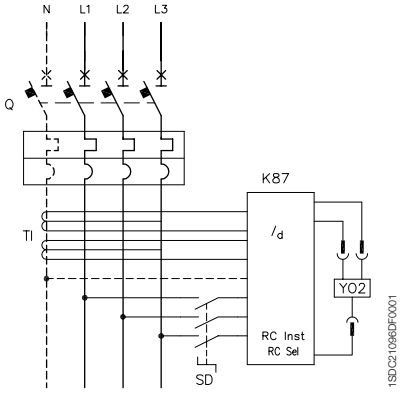
Three-pole or four-pole circuit breaker with Ekip LS/I electronic trip unit



Three-pole or four-pole circuit breaker with Ekip I, Ekip LSI or Ekip LSIG electronic trip unit



Three-pole circuit breaker with Ekip M-LIU electronic trip unit



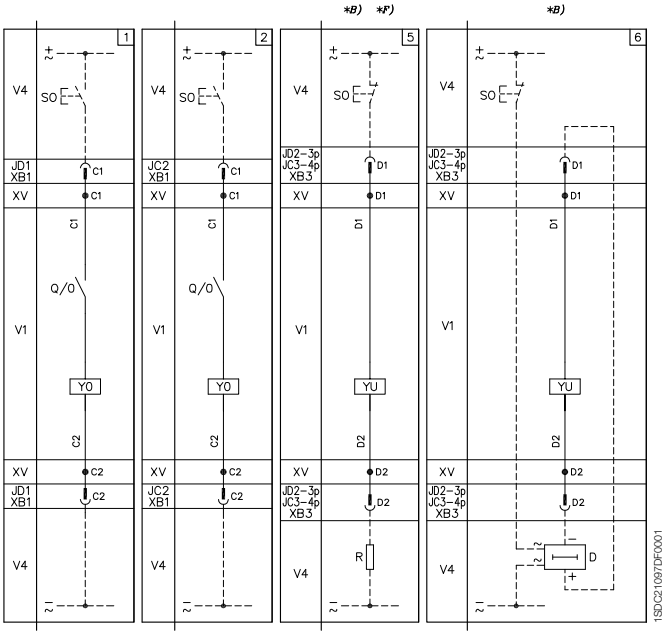
Three-pole or four-pole circuit breaker with thermal magnetic trip unit and RC Inst or RC Sel residual current release

Captions

☐	= Diagram figure number
*	= See the note indicated by the letter
K51	= Microprocessor-based release: – overcurrent release type Ekip I, Ekip LS/I, Ekip N-LS/I, Ekip LSI, Ekip LSIG, Ekip E-LSIG – motor protection release type Ekip M-LIU
K87	= Residual current release type RC Inst, RC Sel, RC Sel 200, RC B Type
Q	= Main circuit breaker
SD	= Power supply switch-disconnector of the residual current release type RC Inst, RC Sel, RC Sel 200 or RC B Type
TI	= Toroidal current transformer
TI/L1	= Current transformer placed on phase L1
TI/L2	= Current transformer placed on phase L2
TI/L3	= Current transformer placed on phase L3
TI/N	= Current transformer placed on the neutral
YO1	= Opening solenoid of the microprocessor-based overcurrent release
YO2	= Opening solenoid of the residual current release

Wiring diagrams of the accessories

Service releases



Description of figures

Fig. 1 = Shunt opening release.
Fig. 2 = Supplementary shunt opening release (only for four-pole circuit breakers).
Fig. 5 = Instantaneous undervoltage release (see Notes B and F).
Fig. 6 = Undervoltage release with electronic time delay device outside the circuit breaker, see note B).

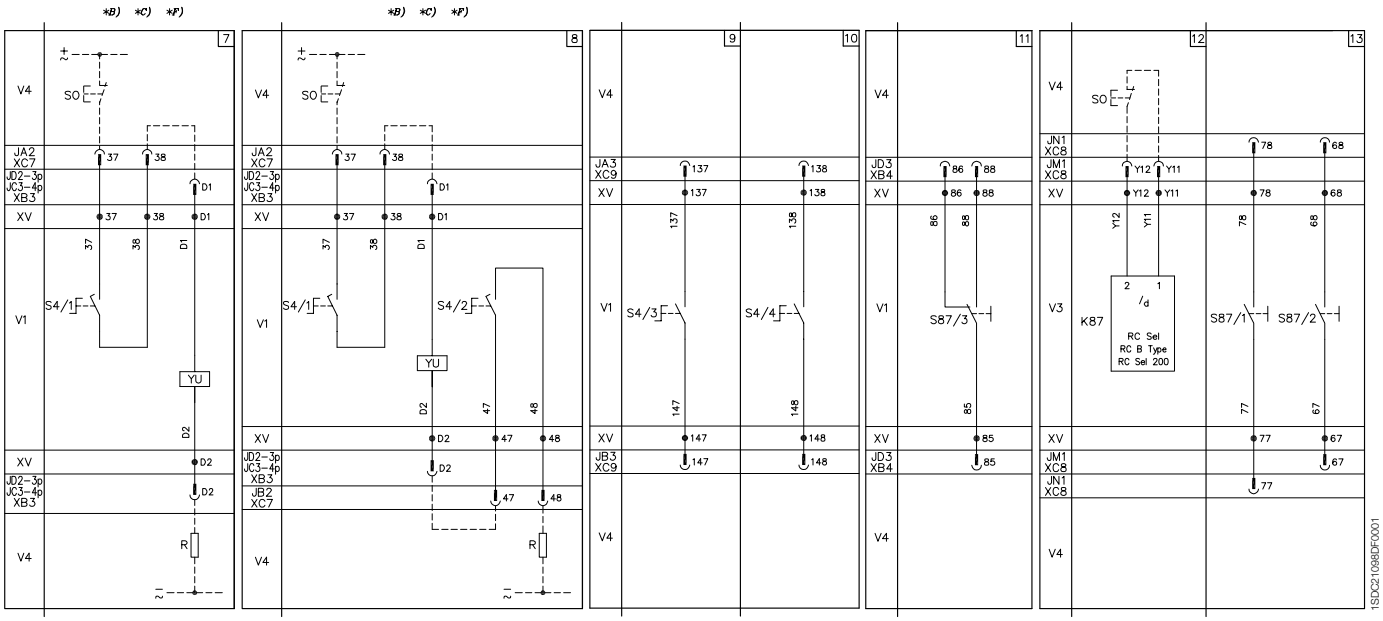
Notes

B) The undervoltage release is supplied for power supply branched on the supply side of the circuit breaker or from an independent source: closing is only possible with the release energized (the lock on closing is made mechanically).
F) Additional external resistor for undervoltage supplied at 380/440V AC and 480/525V AC.

Caption

☐ = Diagram figure number
* = See the note indicated by the letter
D = Undervoltage release electronic time delay device (outside the circuit breaker) (only for voltages up to 250V)
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously
Q/0..7 = Circuit breaker auxiliary contacts
R = Resistor (see note F)
SO = Pushbutton or contact for opening the circuit breaker
V1 = Circuit breaker applications
V4 = Indicative apparatus and connections for control and signaling, outside the circuit breaker
XB.. = Three-way connector for the plug-in version circuit breaker auxiliary circuits
XV = Terminal boxes of circuit breaker applications
YO = Shunt opening release
YU = Undervoltage release (see note B)

Service releases



Description of figures

Fig. 7 = Instantaneous undervoltage release in the version for machine tools with one contact in series (see notes B, C and F).
Fig. 8 = Instantaneous undervoltage release in the version for machine tools with two contacts in series (see Notes B, C and F).
Fig. 9 = First auxiliary early contact operated by the crank handle.
Fig. 10 = Second auxiliary early contact operated by the crank handle.
Fig. 11 = One changeover contact for electrical signaling of circuit breaker open due to tripping of the residual current release type RC Inst, RC Sel, RC B Type or RC Sel 200.
Fig. 12 = Residual current release circuits type RC Sel, RC B Type or RC Sel 200.
Fig. 13 = Two contacts for electrical signaling of residual current release pre-alarm and alarm type RC Sel, RC B Type or RC Sel 200.

Notes

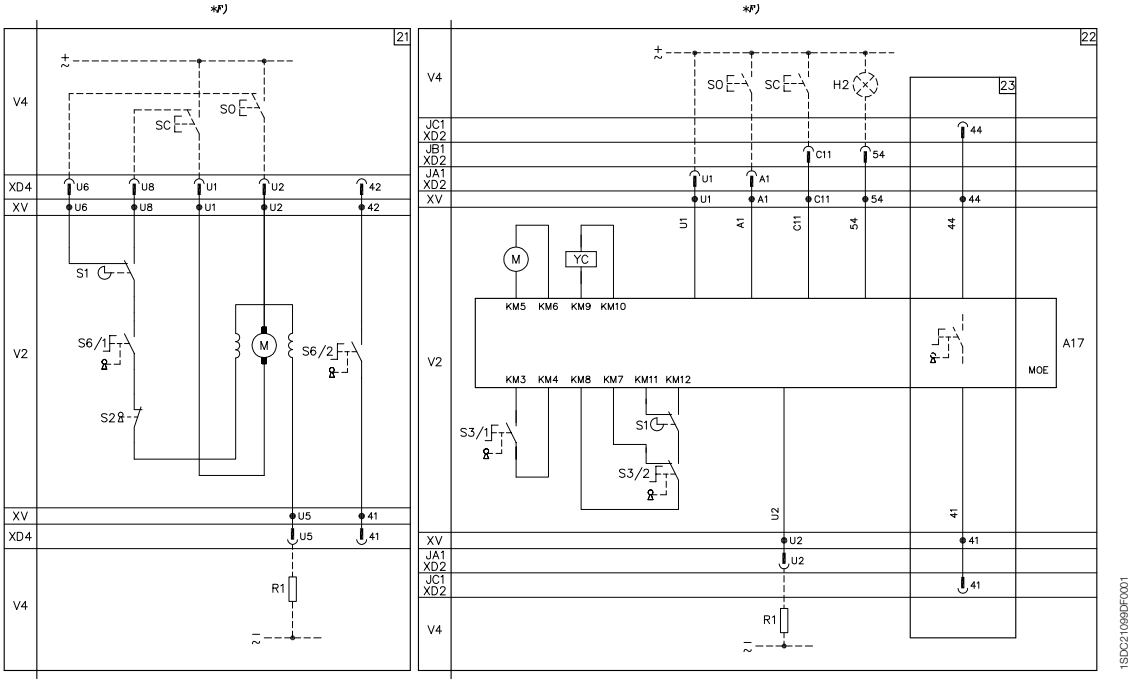
B) The undervoltage release is supplied for power supply branched on the supply side of the circuit breaker or from an independent source: closing is only possible with the release energized (the lock on closing is made mechanically).
C) Contacts S4/1 and S4/2 shown in figures 7-8 open the circuit with the circuit breaker open and reclose it when a manual closing command is given by means of the rotary handle, in accordance with the Standards regarding machine tools (in any case closing does not take place if the undervoltage release is not supplied).
F) Additional external resistor for undervoltage supplied at 480/525V AC.

Caption

☐ = Diagram figure number
* = See the note indicated by the letter
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously
K87 = Residual current release type RC Inst, RC Sel, RC Sel 200, RC B Type
R = Resistor (see note F)
S4/1-4 = Auxiliary early contacts operated by the circuit breaker mounted crank handle (see note C)
S87/1 = Contact for electrical signaling of pre-alarm of the residual current release type RC Sel, RC B or RC Sel 200
S87/2 = Contact for electrical signaling of alarm of the residual current release type RC Sel, RC B or RC Sel 200
S87/3 = Contact for electrical signaling of circuit breaker open due to tripping of the residual current release type RC Sel, RC Inst, RC B or RC Sel 200
SO = Pushbutton or contact for opening the circuit breaker
V1 = Circuit breaker applications
V4 = Indicative apparatus and connections for control and signaling, outside the circuit breaker
XB.. = Three-way connector for the plug-in version circuit breaker auxiliary circuits
XC.. = Six-way connector for the plug-in version circuit breaker auxiliary contacts
XV = Terminal boxes of the circuit breaker applications
YU = Undervoltage release (see note B)

Wiring diagrams of the accessories

Motor operator



Description of figures

Fig. 21 = Direct control motor operator (MOD) (only for XT1 and XT3 fixed or plug-in circuit breakers) (see note I).
Fig. 22 = Motor operator with stored energy (MOE) (only for circuit breakers XT2 and XT4).
Fig. 23 = A contact for electrical signaling of stored energy motor operator that can be operated remotely.

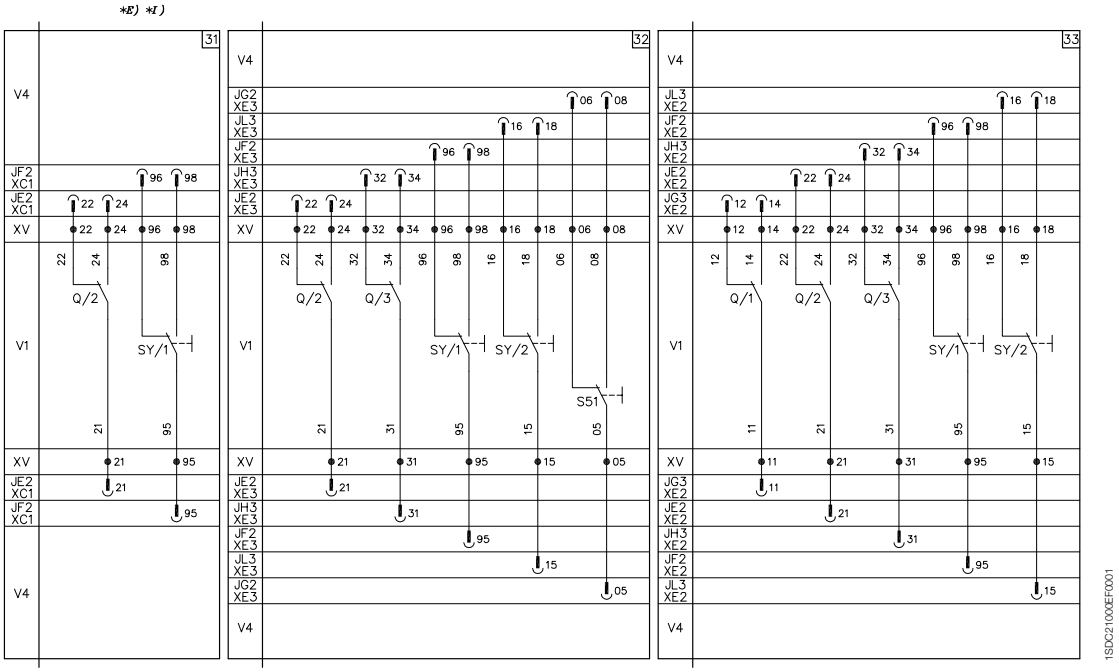
Notes

F) Additional external resistor for MOD and MOE supplied at 480/525V AC.

Caption

☐ = Diagram figure number
* = See the note indicated by the letter
A17 = Actuator unit type MOE for the stored energy motor operator
H2 = Signaling lamp for stored energy motor operator blocked
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; extraction of the connectors takes place at the same time as that of the circuit breaker
M = Motor with excitation in series for opening and closing the circuit breaker (fig. 21)
M = Motor for opening the circuit breaker and spring charging for closing the circuit breaker (fig. 22)
M1 = Three-phase asynchronous motor
R1 = Resistor (see note F)
S1 = Contact controlled by the cam of the motor operator
S2 = Contact controlled by the key lock of the motor operator with direct action
S3/1-2 = Contacts controlled by the Auto/Manual selector and key lock of the stored energy motor operator
S4 = Contact controlled by the cam of the motor operator with direct action
S6/1-2 = Contacts controlled by the Auto/Manual selector of the motor operator with direct action
SC = Pushbutton or contact for closing the circuit breaker
SO = Pushbutton or contact for opening the circuit breaker
V2 = Motor operator applications
V4 = Indicative apparatus and connections for control and signaling, outside the circuit breaker
XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit breaker
XV = Terminal boxes of the circuit breaker applications
YC = Shunt closing release of the stored energy motor operator

Signaling contacts



Description of figures

Fig. 31 = One changeover contact for electrical signaling of circuit breaker open or closed and one changeover contact for electrical signaling of circuit breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V) (see notes E and I).

Fig. 32 = Two changeover contacts for electrical signaling of circuit breaker open or closed, two changeover contacts for electrical signaling of circuit breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) and one changeover contact for electrical signaling of circuit breaker open due to tripping of the thermal magnetic or electronic trip unit (only for voltages up to 250V).

Fig. 33 = Three changeover contacts for electrical signaling of circuit breaker open or closed and two changeover contacts for electrical signaling of circuit breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

Notes

E) The 24V auxiliary power supply unit of fig. 48 must be installed in the circuit breaker seats marked SY/1 and Q/2. Therefore, should you want to install the unit in fig. 48 and the contacts in fig. 31 at the same time, the contacts of fig. 31 must be installed in the adjacent slots; that is, contact SY/1 in the slot marked SY/2 and contact Q/2 in the slot marked Q/1.

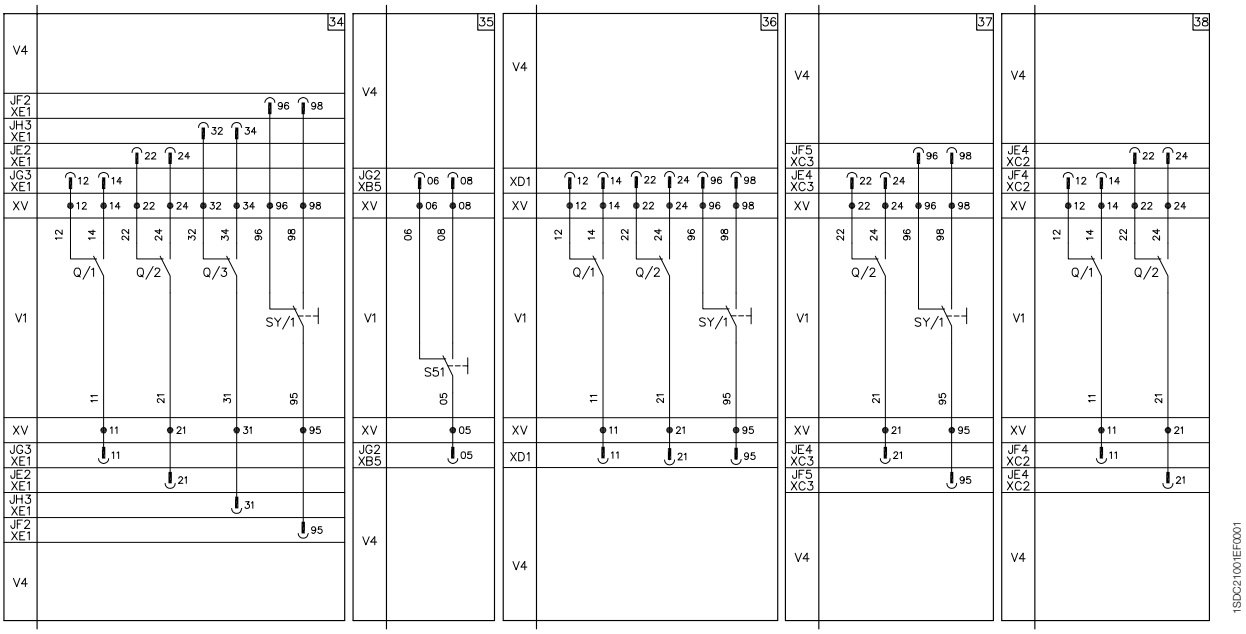
I) If the MOD (application in figure 21) and the auxiliary contacts 1Q+1SY (in figure 31) must be installed simultaneously, contact Q/2 must be installed in the slot marked as Q/1

Captions

☐ = Diagram figure number
* = See the note indicated by the letter
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously
Q/0..3 = Circuit breaker auxiliary contacts
S51 = Contact for electrical signaling of circuit breaker open due to tripping of the thermal magnetic or electronic trip unit
SY/1..2 = Contacts for electrical signaling of circuit breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)
V1 = Circuit breaker applications
V4 = Indicative apparatus and connections for control and signaling, outside the circuit breaker
XC.. = Six-way connector for the plug-in version circuit breaker auxiliary contacts
XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit breaker
XE.. = Fifteen-way connector for the auxiliary circuits of the plug-in version circuit breaker
XV = Terminal boxes of the circuit breaker applications

Wiring diagrams of the accessories

Signaling contacts



Description of figures

Fig. 34 = Three changeover contacts for electrical signaling of circuit breaker open and one changeover contact for electrical signaling of circuit breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

Fig. 35 = One changeover contact for electrical signaling of circuit breaker open due to tripping of the thermal magnetic electronic trip unit (only for voltages up to 250V).

Fig. 36 = Two changeover contacts for electrical signaling of circuit breaker open or closed and one changeover contact for electrical signaling of circuit breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltages up to 250V).

Fig. 37 = One changeover contact for electrical signaling of circuit breaker open or closed and one changeover contact for electrical signaling of circuit breaker open due to tripping of the magnetic, thermal magnetic or electronic trip units, YO, YO1, YO2, YU (tripped position) (only for voltage up to 400V).

Fig. 38 = Two changeover contacts for electrical signaling of circuit breaker open or closed (only for voltage up to 400V).

Captions

☐ = Diagram figure number

* = See the note indicated by the letter

J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously

Q/0..3 = Circuit breaker auxiliary contacts

S51 = Contact for electrical signaling of circuit breaker open due to tripping of the thermal magnetic or electronic trip unit

SY/1 = Contacts for electrical signaling of circuit breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)

V1 = Circuit breaker applications

V4 = Indicative apparatus and connections for control and signaling, outside the circuit breaker

XB.. = Three-way connector for the plug-in version circuit breaker auxiliary circuits

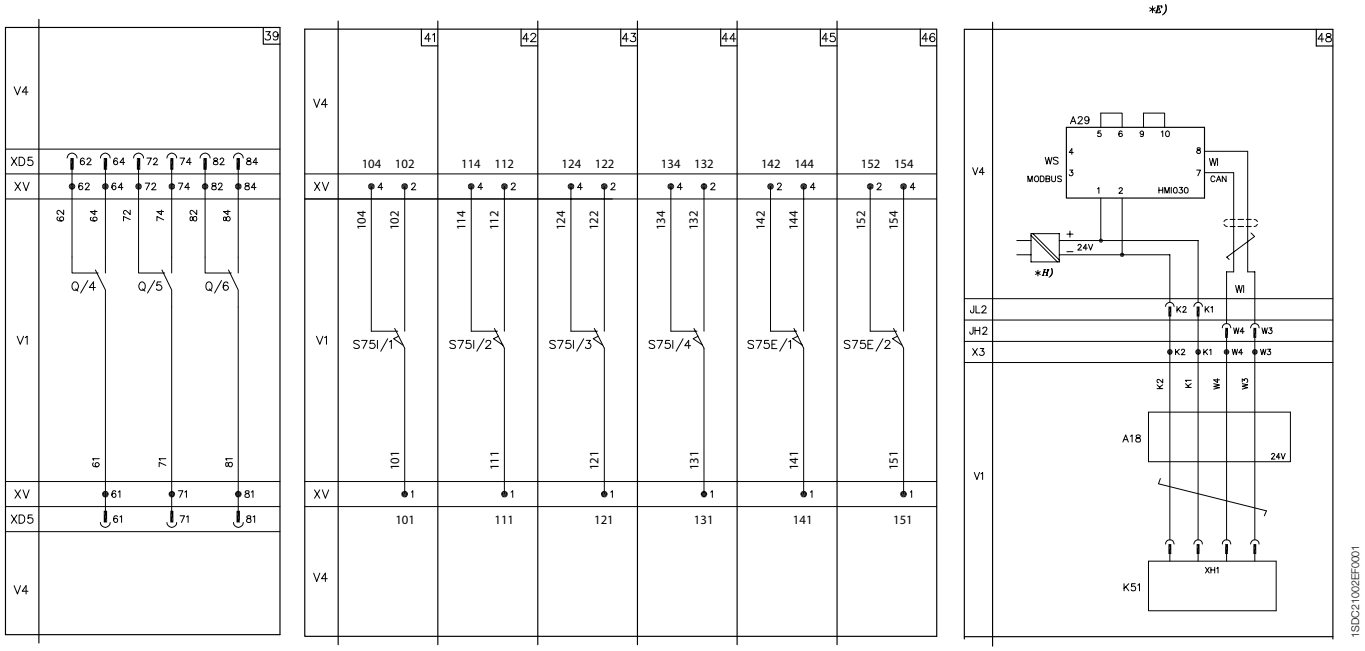
XC.. = Six-way connector for the plug-in version circuit breaker auxiliary contacts

XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit breaker

XE.. = Fifteen-way connector for the auxiliary circuits of the plug-in version circuit breaker

XV = Terminal boxes of the circuit breaker applications

Signaling contacts



Description of figures

Fig. 39 = Three supplementary changeover contacts for electrical signaling of circuit breaker open or closed (only for fixed or plug-in version circuit breakers).

Fig. 41 = First changeover position contact of the circuit breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit breakers).

Fig. 42 = Second changeover position contact of the circuit breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit breakers).

Fig. 43 = Third changeover position contact of the circuit breaker, for electrical signaling of connected(only for plug-in or withdrawable version circuit breakers).

Fig. 44 = Fourth changeover position contact of the circuit breaker, for electrical signaling of connected (only for plug-in or withdrawable version circuit breakers).

Fig. 45 = First changeover position contact of the circuit breaker, for electrical signaling of isolated (only for withdrawable version circuit breakers).

Fig. 46 = Second changeover position contact of the circuit breaker, for electrical signaling of isolated (only for withdrawable version circuit breakers).

Fig. 48 = Auxiliary circuits of the 24V auxiliary power supply unit and of the HMI030 type interface unit (see note E).

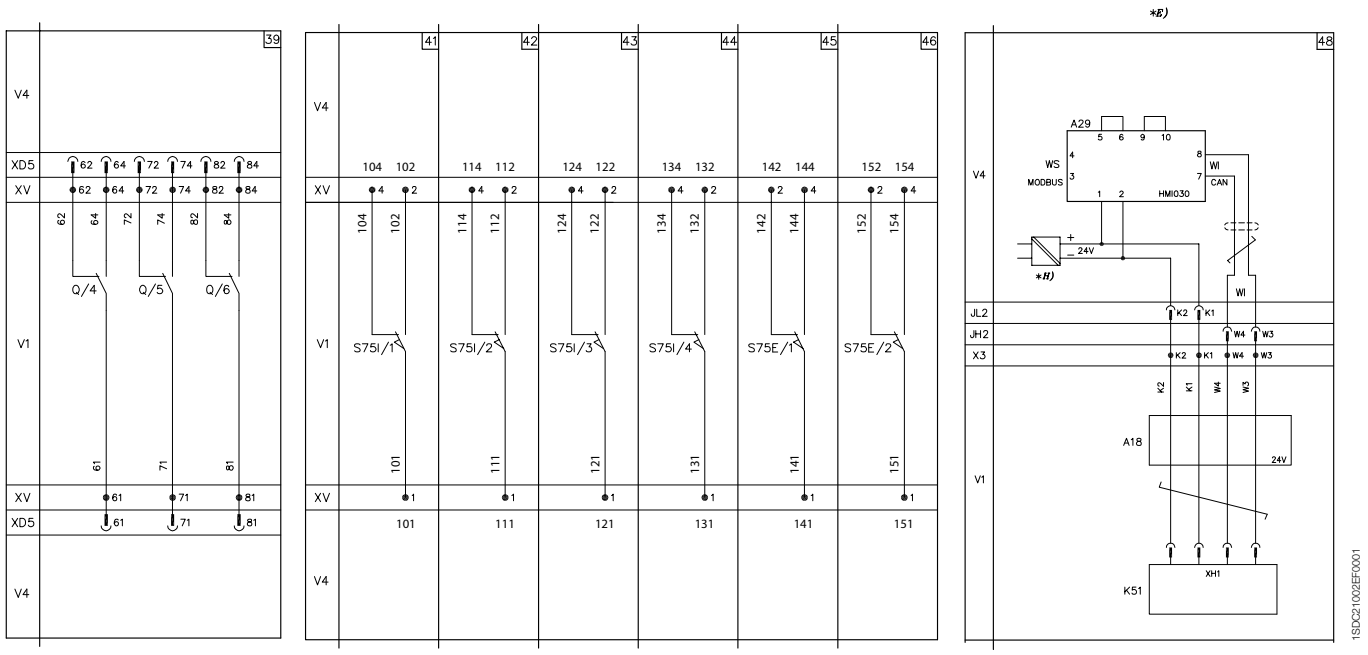
Notes

E) The 24V auxiliary power supply unit of fig. 48 must be installed in the circuit breaker seats marked SY/1 and Q/2. Therefore, should you want to install the unit in fig. 48 and the contacts in fig. 31 at the same time, the contacts of fig. 31 must be installed in the adjacent slots; that is, contact SY/1 in the slot marked SY/2 and contact Q/2 in the slot marked Q/1.

H) Having requested a Uaux insulated from earth, “galvanically separated converters” must be used in compliance with IEC 60950 (UL 1950) or equivalent standards that ensure a common mode current or leakage current (see IEC 478/1, CEI 22/3) no greater than 3.5 mA, IEC 60364-41 and CEI 64-8.

Wiring diagrams of the accessories

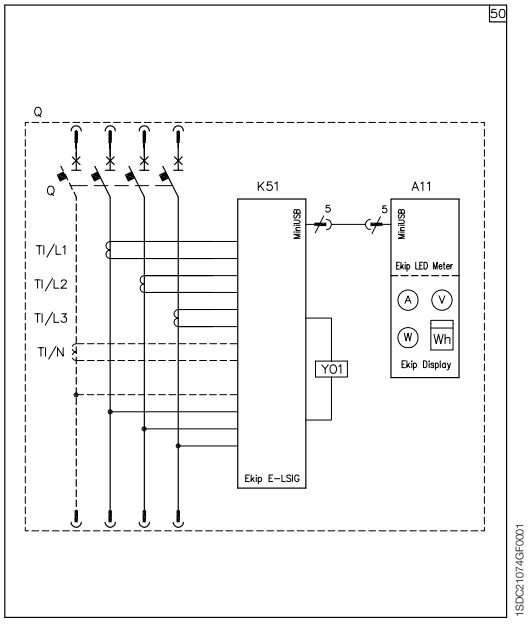
Signaling contacts



Captions

☐ = Diagram figure number
* = See the note indicated by the letter
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously
K51 = Electronic trip unit:
– of overcurrent type Ekip LS/I, Ekip N-LS/I, Ekip LSI, Ekip LSIG
– of motor protection type Ekip I, Ekip M-I, Ekip M-LIU, Ekip M-LRIU
– of generator protection type Ekip G-LSI
Q/0..7 = Circuit breaker auxiliary contacts
S75I/1..4 = Contacts for electrical signaling of circuit breaker in connected position (only provided with plug-in or withdrawable version circuit breakers)
S75E/1-2 = Contacts for electrical signaling of circuit breaker in racked-out position (only provided with withdrawable version circuit breakers)
V1 = Circuit breaker applications
V4 = Indicative apparatus and connections for control and signaling, outside the circuit breaker
WI = Serial interface with the trip unit accessories
X3 = Connector of the circuit for the 24V auxiliary power supply unit
XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit breaker
XV = Terminal boxes of the circuit breaker applications
A18 = 24V auxiliary power supply unit (see note E)
XH1 = Electronic trip unit contacts

Electronic trip unit Ekip E-LSIG connected with Ekip Display or Ekip LED Meter



Description of figures

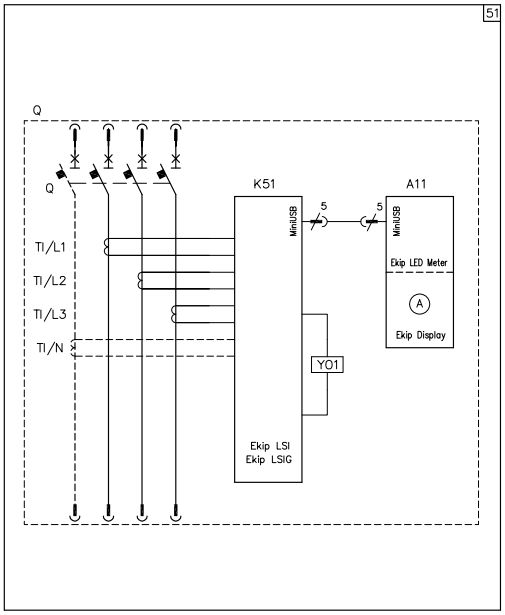
Fig. 50 = Auxiliary circuits of the Ekip E-LSIG microprocessor-based release connected to the Ekip Display (display) or Ekip LED Meter (current display) display unit.

Captions

☐ = Reference number of diagram figure
A11 = Display unit type Ekip Display (display) or Ekip LED Meter (current display)
K51 = Microprocessor-based release:
– overcurrent release type Ekip I, Ekip LS/I, Ekip N-LS/I, Ekip LSI, Ekip LSIG, Ekip E-LSIG
– motor protection release type Ekip M-LIU
Q = Main switch
TI/L1 = Current transformer located on phase L1
TI/L2 = Current transformer located on phase L2
TI/L3 = Current transformer located on phase L3
TI/N = Current transformer located on neutral
YO1 = Opening solenoid of microprocessor-based overcurrent release

Wiring diagrams of the accessories

Electronic trip unit Ekip LSI, Ekip LSIG, Ekip LED Meter



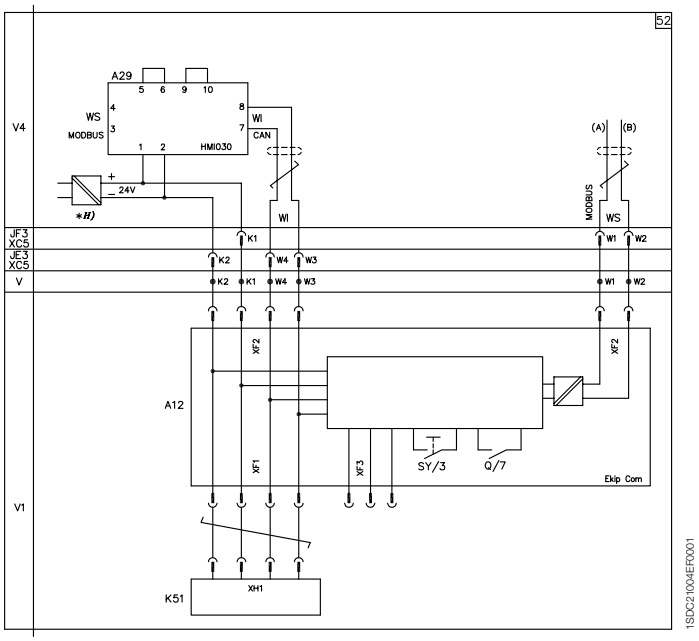
Description of figures

Fig. 51 = Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip MLRIU connected to display unit type Ekip Display (display) or Ekip LED Meter (current display).

Caption

☐ = Diagram figure number
A11 = Display unit type Ekip Display (display) or Ekip LED Meter (current display)
K51 = Microprocessor-based release:
– overcurrent release type Ekip I, Ekip LS/I, Ekip N-LS/I, Ekip LSI, Ekip LSIG, Ekip E-LSIG
– motor protection release type Ekip M-LIU
Q = Main circuit breaker
TI/L1 = Current transformer placed on phase L1
TI/L2 = Current transformer placed on phase L2
TI/L3 = Current transformer placed on phase L3
TI/N = Current transformer placed on the neutral
YO1 = Opening solenoid of the microprocessor-based overcurrent release

Auxiliary circuit of Ekip-Com and HMI030



Description of figures

Fig. 52 = Auxiliary circuits of the Ekip Com type interface unit and of the HMI030 type interface unit (see note E).

Notes

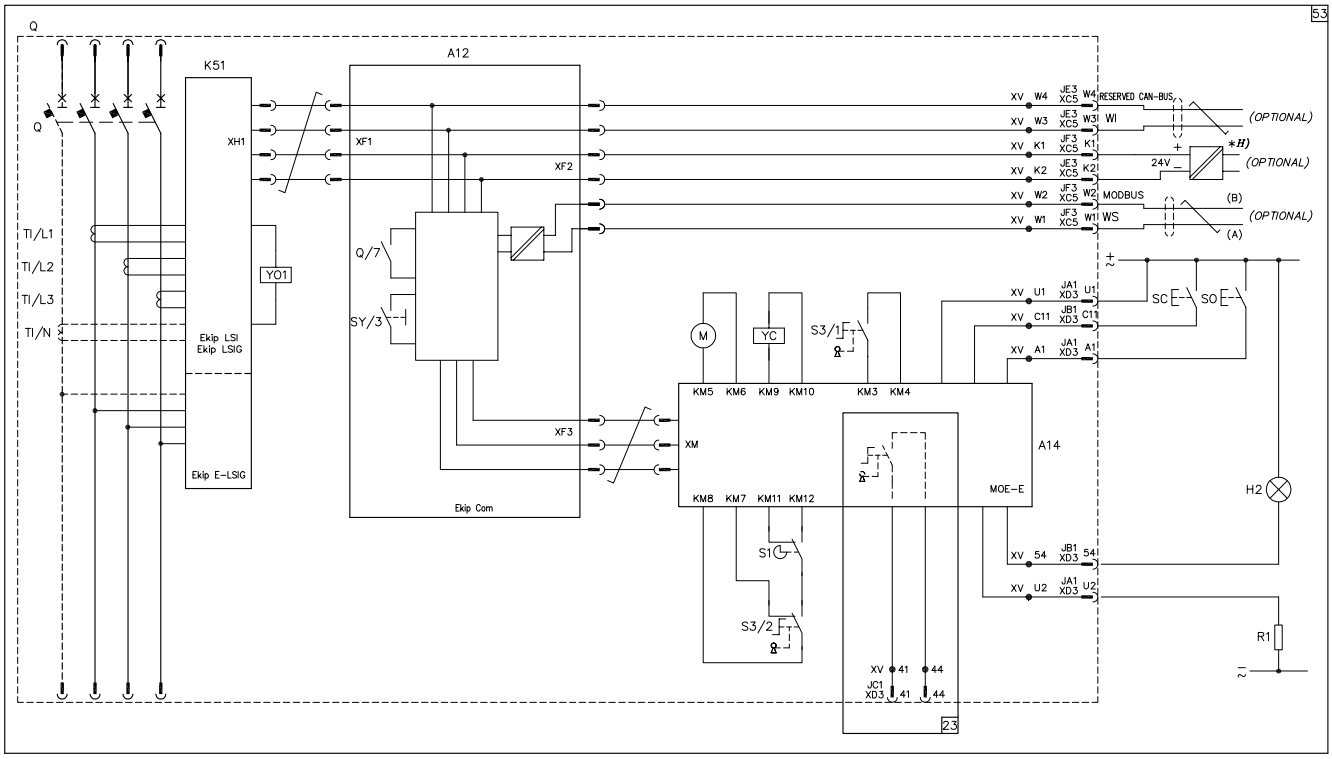
H) Having requested a Uaux insulated from earth, “galvanically separated converters” must be used in compliance with IEC 60950 (UL 1950) or equivalent standards that ensure a common mode current or leakage current (see IEC 478/1, CEI 22/3) no greater than 3.5 mA, IEC 60364-41 and CEI 64-8.

Captions

☐ = Diagram figure number
A12 = Interface unit type Ekip Com (with MODBUS serial communication)
A13 = Signaling unit type LD030 DO
K51 = Electronic trip unit:
– of overcurrent type Ekip LSI, Ekip LSIG
Q = Main circuit breaker
Q/0..7 = Circuit breaker auxiliary contacts
SY/1..3 = Contacts for electrical signaling of circuit breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)
TI/L1 = Current transformer placed on phase L1
TI/L2 = Current transformer placed on phase L2
TI/L3 = Current transformer placed on phase L3
TI/N = Current transformer placed on the neutral
WI = Serial interface with the trip unit accessories
WS = Serial interface with the control system (MODBUS EIA RS485 interface)
XF = Connector of the Interface unit type Ekip Com
XG-XH = Electronic trip unit connectors
XV = Terminal boxes of the circuit breaker applications
YO1 = Opening solenoid of the microprocessor-based overcurrent release

Wiring diagrams of the accessories

Electronic trip unit Ekip LSI, Ekip LSIG connected to interface unit Ekip Com and with actuator unit type MOE-E for the stored energy motor operator



Description of figures

Fig. 23 = One contact for electrical signaling of stored energy motor operator that can be operated remotely.
Fig. 53 = Auxiliary circuits of the electronic trip unit type Ekip LSI, Ekip LSIG or Ekip M-LRIU connected to interface unit type Ekip Com and with actuator unit type MOE-E for the stored energy motor operator.

Notes

H) Having requested a ground-insulated Uaux, “galvanically separated converters” must be used in compliance with IEC 60950 (UL 1950) or equivalent standards that ensure a common mode current or leakage current (see IEC 478/1, CEI 22/3) no greater than 3.5 mA, IEC 60364-41 and CEI 64-8.

Captions

□ = Diagram figure number
A12 = Interface unit type Ekip Com (with MODBUS serial communication)
A14 = Actuator unit type MOE-E for the stored energy motor operator
H2 = Signaling lamp for blocked stored energy motor operator
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously
K51 = Electronic trip unit:
– of overcurrent type Ekip LSI, Ekip LSIG
M = Motor with excitation in series for opening and closing the circuit breaker (fig. 21)
Q = Main circuit breaker
Q/0..7 = Circuit breaker auxiliary contacts
R1 = Resistor (see note H)
S1 = Contact controlled by the cam of the motor operator
S3/1-2 = Contacts controlled by the Auto/Manual selector and key lock of the stored energy motor operator
SC = Pushbutton or contact for closing the circuit breaker
SO = Pushbutton or contact for opening the circuit breaker
SY/1..3 = Contacts for electrical signaling of circuit breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)
TI = Toroidal current transformer
TI/L1 = Current transformer placed on phase L1
TI/L2 = Current transformer placed on phase L2
TI/L3 = Current transformer placed on phase L3
TI/N = Current transformer placed on the neutral
WI = Serial interface with the trip unit accessories
WS = Serial interface with the control system (MODBUS EIA RS485 interface)
XC.. = Six-way connector for the plug-in version circuit breaker auxiliary contacts
XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit breaker
XF = Connector of the Interface unit type Ekip Com
XG-XH = Electronic trip unit connectors
XV = Terminal boxes of the circuit breaker applications
YC = Shunt closing release of the stored energy motor operator
YO1 = Opening solenoid of the microprocessor-based overcurrent release

Resetting instructions

Instructions for resetting the circuit breaker following release tripping

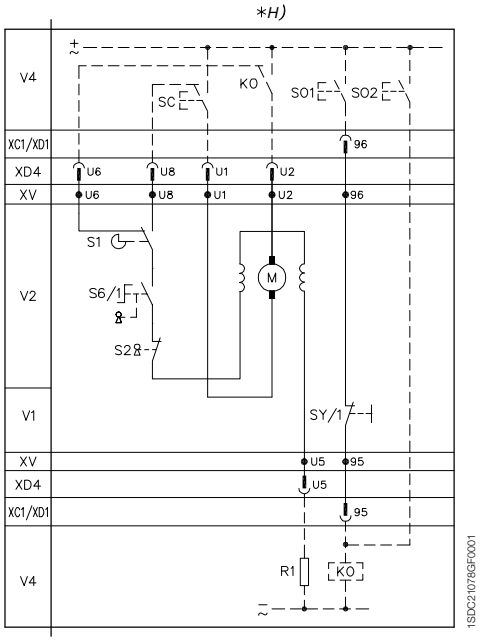
Selecting the type of circuit breaker resetting depends on design requirements and on service conditions.
Resetting can take place following tripping of the following releases:
– overcurrent;
– undervoltage;
– shunt opening.

The following three possibilities are suggested (see diagrams below):

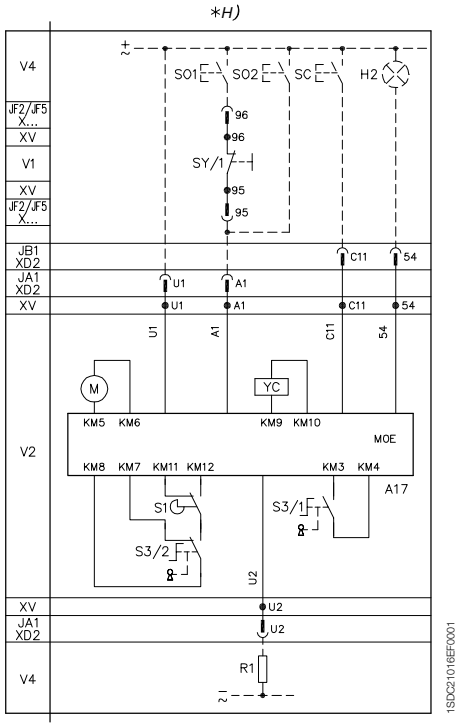
1. **Only manual resetting**
   To be wired (by the customer): contact SO1, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening is prevented until the circuit breaker is in the tripped position.
   To reset the circuit breaker it is necessary to activate the special lever on the front of the motor until the circuit breaker goes into the open position.
2. **Electrical resetting making the operator responsible**
   To be wired (by the customer): contact SO1, SO2, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening is allowed by means of contact S02, an operation entrusted to the person in charge of the control station provided that information has been received by same that enables tripping due to a short-circuit to be ruled out or if the causes of the short circuit have been eliminated/remedied.
3. **Electrical resetting always allowed**
   To be wired (by the customer): contact SO1, SO2, contact SY/1 and the auxiliary relay KO (only for MOD).
   Opening is always allowed by means of contact S02.

NB: If the magnetic, thermal magnetic or electronic trip unit is present, it is necessary to find the causes which led to the circuit breaker being in the tripped position so as to prevent reclosing under short-circuit conditions. In all cases, manual resetting is always allowed.

MOD



MOE or MOE-E



Notes

H) Having requested a ground-insulated Uax, “galvanically separated converters” must be used, in compliance with IEC 60950 (UL 1950) or equivalent standards that ensure a common mode current or leakage current (see IEC 478/1, CEI 22/3) no greater than 3.5 mA, IEC 60364-41 and CEI 64-8.

Captions

A17 = Actuator unit type MOE for the stored energy motor operator H2 = Signaling lamp for blocked stored energy motor operator
J.. = Connectors for the auxiliary contacts of the withdrawable version circuit breaker; connectors and circuit breaker are extracted simultaneously
KO = Auxiliary opening relay
M = Motor with excitation in series for opening and closing the circuit breaker (fig. 21)
M = Motor for opening the circuit breaker and spring charging for closing the circuit breaker (fig. 22)
R1 = Resistor (see note H)
S1 = Contact controlled by the cam of the motor operator
S2 = Contact controlled by the key lock of the motor operator with direct action
S3/1-2 = Contacts controlled by the Auto/Manual selector and key lock of the stored energy motor operator
S6/1-2 = Contacts controlled by the Auto/Manual selector of the motor operator with direct action
SC = Pushbutton or contact for closing the circuit breaker
SO1,S02 = Pushbuttons or contacts for opening the circuit breaker (see “Instructions for resetting the circuit breaker following release tripping”)
SY/1..3 = Contacts for electrical signaling of circuit breaker open due to tripping of the thermal magnetic trip units, YO, YO1, YO2, YU (tripped position)
V1 = Circuit breaker applications
V2 = Motor operator applications
V4 = Indicative apparatus and connections for control and signaling, outside the circuit breaker
XB.. = Three-way connector for the plug-in version circuit breaker auxiliary circuits
XC.. = Six-way connector for the plug-in version circuit breaker auxiliary contacts
XD.. = Nine-way connector for the auxiliary circuits of the plug-in version circuit breaker
XV = Terminal boxes of the circuit breaker applications
YC = Shunt closing release of the stored energy motor operator