

ABB INDUSTRIAL DRIVES

# **ACS880-07, -17, -37 drives bypass connection**

## Option description





# ACS880-07, -17, -37 drives bypass connection

Option description

Table of contents





# Table of contents

---

## 1 Option description

Contents of this manual .....	7
Applicability .....	7
Overview .....	7
Example: Manually-controlled bypass connection .....	8
Circuit diagram .....	8
Layout drawing .....	9
Operating instructions .....	9
Tuning the bypass circuit breaker (Q4) .....	9
Switching the motor power supply from drive to direct on-line .....	9
Switching the motor power supply from direct on-line to drive .....	10
Fault indication .....	10
Technical data for the bypass circuit breaker (Q4) .....	10

## Further information

---





# 1

## Option description

---

### Contents of this manual

This manual contains a brief description of the drive bypass connection. In addition, it gives an example design (a manually-controlled bypass connection) with a wiring diagram, layout drawing and operating instructions.

**Note:** Always refer to the delivery-specific circuit diagrams and layout drawings when you work on or operate the bypass connection. The final design may differ remarkably from the example shown in this manual.

### Applicability

The option described in this manual is available for the cabinet-installed single drives ACS880-07, -17, and -37.

### Overview

The bypass connection includes the following as standard:

- equipment and wiring needed to switch the motor power supply between the drive and the power line (direct online)
- a versatile motor protection breaker for the on/off control, disconnection and protection of the motor when it is connected direct online.

Depending on the customer order, the control of the bypass is either manual with the operating switches on the cabinet door (a manually-controlled bypass connection), or automatic upon a fault trip of the drive.

The bypass connection can also have a ground fault protection and/or a synchronization circuit. The ground fault protection is only available for the grounded (TN) power system. The synchronization circuit makes it possible to start the motor

---

8 Option description

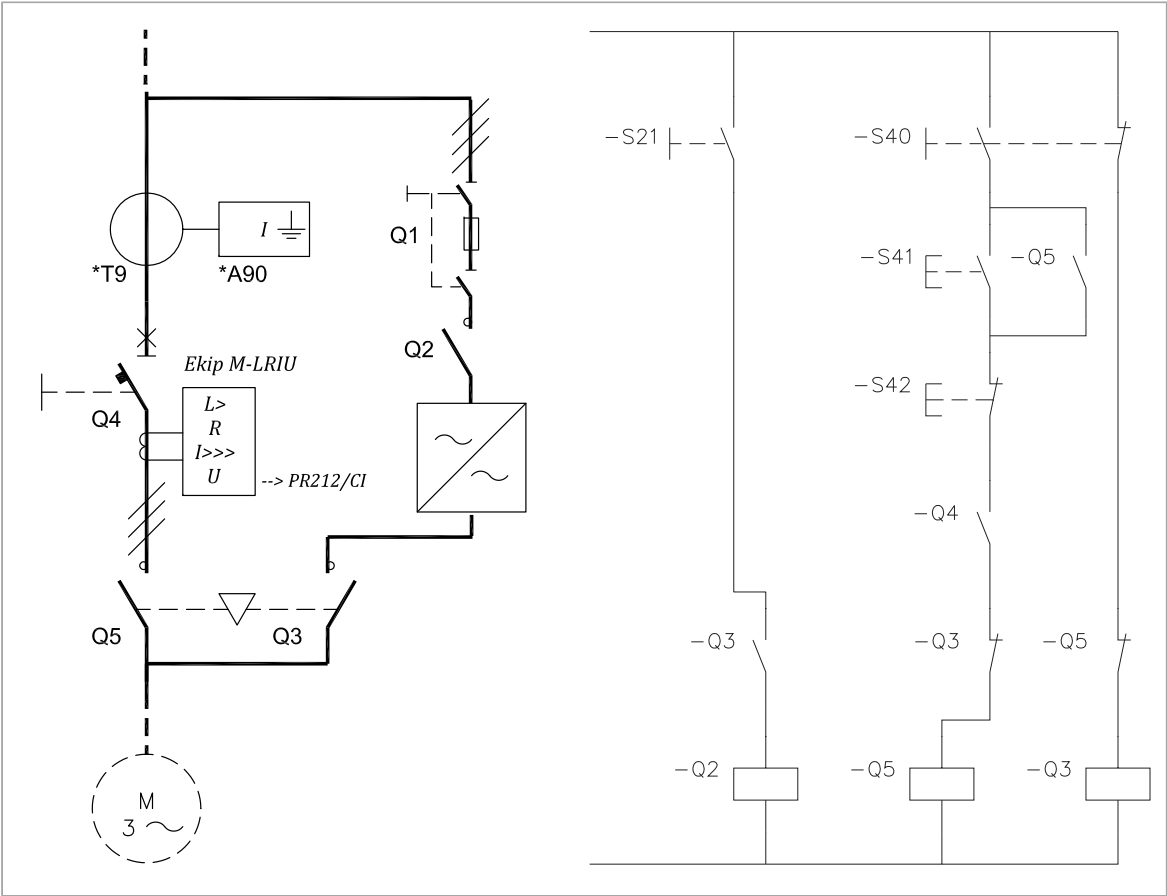
to the nominal speed with the drive and then switch the motor to the power line (direct online).

For more information on the synchronization, refer to RSYC-01 synchronizing unit for ACS580 and ACS880 drives user's manual (3AFE68827370 [English]).

Example: Manually-controlled bypass connection

■ Circuit diagram

This figure shows an example circuit diagram of the bypass connection.

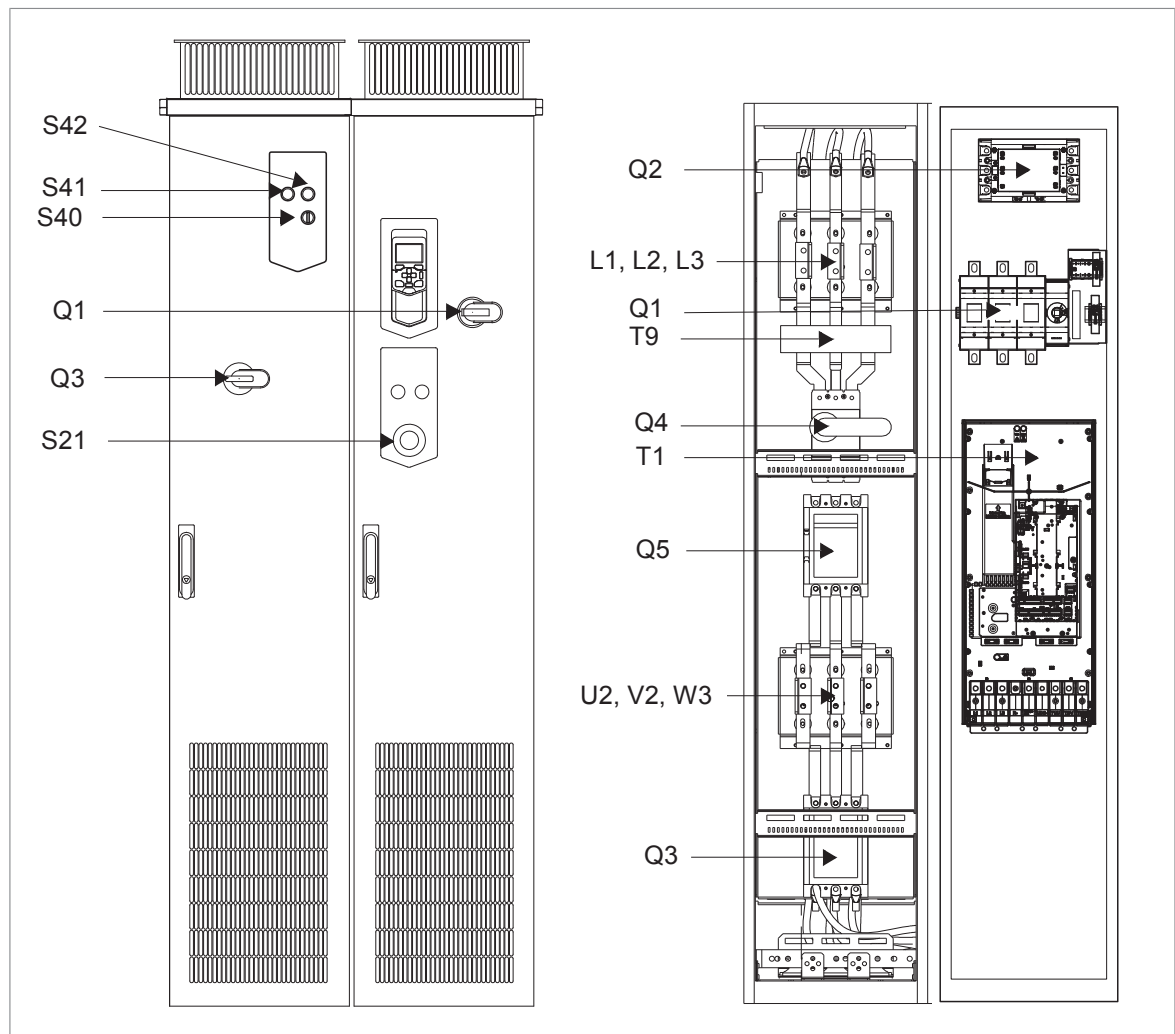


Q1	Drive main switch
Q2	Drive main contactor
T1	Drive module
Q4	Bypass circuit breaker
Q5	Bypass contactor
Q3	Drive output contactor
S21	Drive operating switch (main contactor on/off control)
S40	Motor power supply selection (drive or direct-on-line)
S41	Start button (motor is connected direct-on-line)
S42	Stop button (motor is connected direct-on-line)
T9	Current transformer of the ground fault monitoring option



## ■ Layout drawing

This figure shows an example of cabinet layout of the previous circuit diagram.



## ■ Operating instructions

**Note:** These instructions are valid only for the manually-controlled bypass connection described in this manual.

### Tuning the bypass circuit breaker (Q4)

Tune the settings of the bypass circuit breaker. Refer to document 1SDH001070R0001 (and 1SDC210015D0208) and <https://new.abb.com/low-voltage/products/circuit-breakers>.

### Switching the motor power supply from drive to direct on-line

1. Stop the drive and the motor. Use the control panel (drive in local control mode), or the external stop signal (drive in remote control mode).
2. Open the main contactor of the drive with S21.
3. Switch the motor power supply from the drive to direct online with S40.
4. Start the motor with S41.

### **Switching the motor power supply from direct on-line to drive**

1. Stop the motor and switch off its power supply with S42.
2. Switch the motor power supply from direct online to drive with S40.
3. Turn the drive operating switch S21 to on position.
4. Start the drive and the motor with the drive control panel (drive in local control mode), or external start signal (drive in external control mode).

### **■ Fault indication**

A fault situation is shown with an indicator light on the cabinet door. If the fault is in the bypass connection, refer to document 1SDH001070R0001 (and 1SDC210015D0208) and <https://new.abb.com/low-voltage/products/circuit-breakers>.

In case of a drive fault, refer to the drive hardware manual or firmware manual.

### **■ Technical data for the bypass circuit breaker (Q4)**

Type: ABB SACE Tmax molded case circuit breaker with Ekip M-LRIU electronic trip unit.

Ekip M-LRIU provides versatile protection features: Protection against overload, rotor block, short-circuit and missing phase or unbalanced.

For more information and user instructions, refer to document 1SDH001070R0001 (and 1SDC210015D0208) and <https://new.abb.com/low-voltage/products/circuit-breakers>.

---



# Further information

## Product and service inquiries

Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to [www.abb.com/searchchannels](http://www.abb.com/searchchannels).

## Product training

For information on ABB product training, navigate to [new.abb.com/service/training](http://new.abb.com/service/training).

## Providing feedback on ABB manuals

Your comments on our manuals are welcome. Navigate to [new.abb.com/drives/manuals-feedback-form](http://new.abb.com/drives/manuals-feedback-form).

## Document library on the Internet

You can find manuals and other product documents in PDF format on the Internet at [www.abb.com/drives/documents](http://www.abb.com/drives/documents).



[www.abb.com/drives](http://www.abb.com/drives)



3AXD50000048959B