

Industrial controls

SIRIUS Innovations

Load Feeder as a Direct Starter with Overload Relay
Assembly and Wiring

[Application description](#) • March 2010

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SIRIUS Innovations Load Feeder as a Direct Starter with Overload Relay

Assembly and Wiring

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Guarantee and liability

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Preface

1.1 Objective of the application

This application description describes the connection of the improved SIRIUS switching devices.

This application shows the assembly of a load feeder as a direct starter with overload relay for a conveyor.

Core content of this application

The following core issues are discussed:

- Assembly and wiring of a direct starter with overload relay
- Basic knowledge of this topic is required.

Structure of the document

The documentation of this application is divided into the following main parts.

Table 1-1

| Part | Description |
|---------------------------|---|
| Application description | This chapter gives you an overview. The required standard hardware components are introduced. |
| Wiring of the application | This section shows the electrical wiring of the application. |
| Further reading | This chapter provides further information, e.g. literature references. |

2

Application description

2.1 Content

This application example describes the assembly and connection of a direct starter with overload relay to a conveyor.

Control of the contactors can be carried out by a PLC or another contact block (e.g. a switch or contactor).

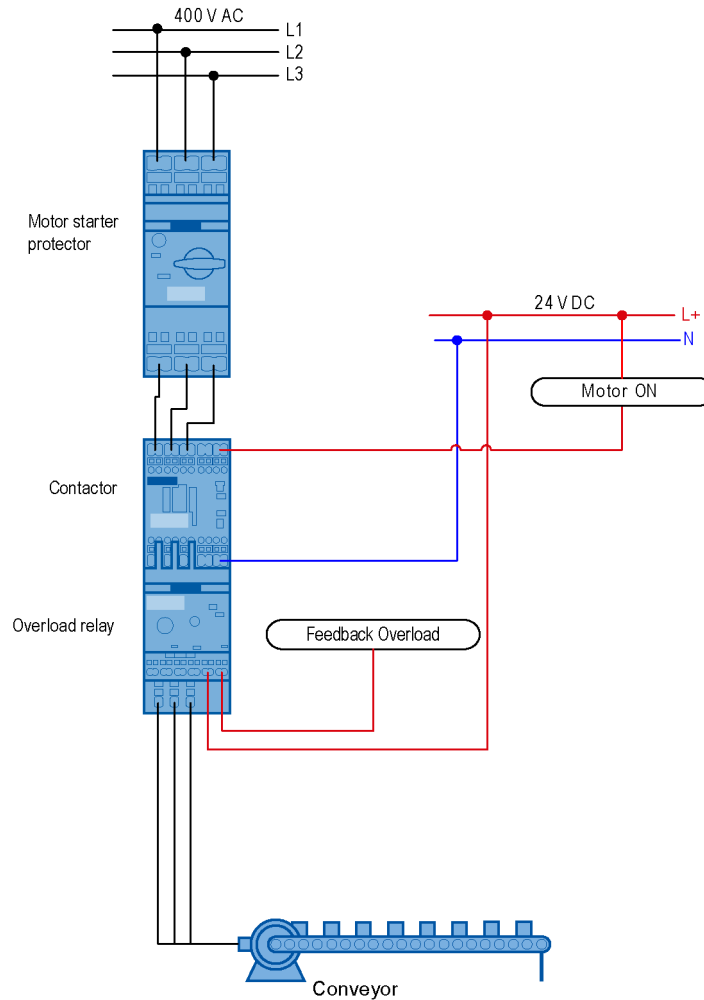
2.2 Assembly

2.2.1 Overview

A load feeder direct starter is required for the conveyor. The direct starter is fully wired and mechanically connected. The overload relay is directly mounted on the contactor of the direct starter.

The control circuit (control of the contactors), the feedback from the positions and the main circuit are displayed for commissioning.

Figure 2-1 Connection of the load feeder direct starter with overload relay



2.2.2 Requirements

The direct starter combination's maximum output is 1.5 kW.
The direct starter combination is controlled via a 24 V DC supply.

2.2.3 Advantages of this solution

Type of assignment 2 applies for this application example. Spring-loaded connection technology enables quick assembly without tools. The motor starter protector is used as a control motor starter protector.

2.2.4 Required hardware components

The following table shows the minimum configuration of the hardware components.

Table 2-2 Hardware components

| Component | Quantity | MLFB / order number | Note |
|-------------------------|----------|---------------------|-------------|
| Motor starter protector | 1 | 3RV2311-1EC20 | — |
| Contactora | 1 | 3RT2015-2BB41 | — |
| Overload relay | 1 | 3RB3016-1SE0 | Solid-state |

2.2.5 Alternative solutions (optional)

A thermal overload relay can be used instead of the solid-state overload relay.

Table 2-3 Hardware components (optional)

| Component | Quantity | MLFB / order number | Note |
|-------------------------|----------|---------------------|---------|
| Motor starter protector | 1 | 3RV2311-1EC20 | — |
| Contactora | 1 | 3RT2015-2BB41 | — |
| Overload relay | 1 | 3RU2116-1EC0 | Thermal |

3

Wiring of the application

3.1 Content

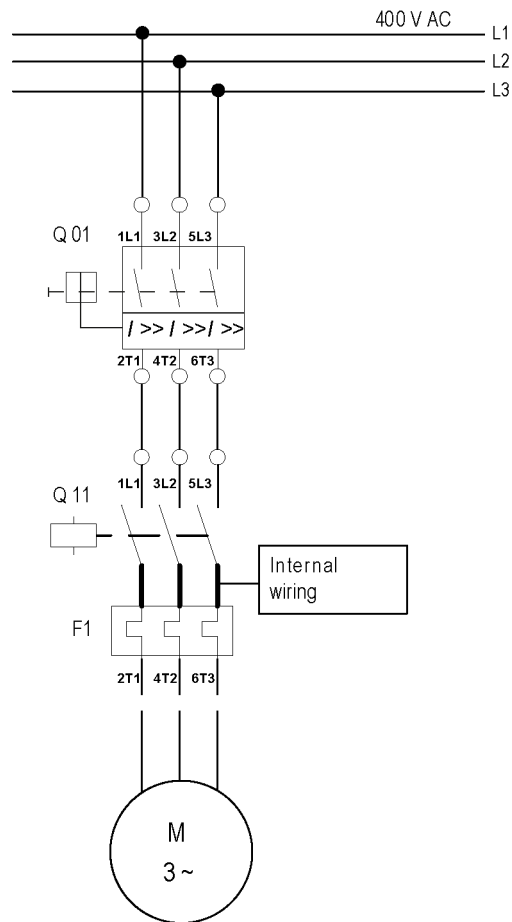
This section shows the electrical wiring of the application.

3.2 Connecting

This chapter describes how the main circuit and the control circuit are connected.

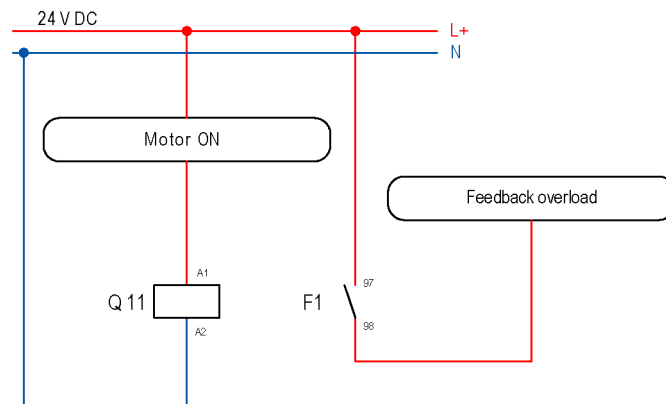
3.2.1 Wiring of the main circuit

Figure 3-2 Wiring of the main circuit



3.2.2 Wiring of the control circuit

Figure 3-3 Wiring of the control circuit



Installation of the hardware

The hardware components can be found in chapter 2.2.4.

The structure of the hardware components is shown in chapter 2.2.1.

Note

The installation guidelines must always be observed.

Further reading

4.1 Internet link information

This list is not complete. It only provides a selection of possible further reading.

Table 4-4

| | Topic | Title |
|-----|--|---|
| \1\ | Link to the document | http://support.automation.siemens.com/WW/view/en/41827698 |
| \2\ | Industrial controls – SIRIUS innovations system manual | http://support.automation.siemens.com/WW/view/en/39740306 |
| \3\ | Siemens A&D Customer Support | http://support.automation.siemens.com |

5

History

Table 5-5 History

| Version | Date | Change |
|---------|------------|-------------|
| V1.0 | 12.03.2010 | First issue |