沈阳西门子中国一级代理商

产品名称	沈阳西门子中国一级代理商
公司名称	浔之漫智控技术（上海）有限公司总部
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产品详情

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创建示例程序

这个控制程序示例可帮助您理解使用 STEP 7-Micro/WIN SMART 有多容易。 该程序在三 个程序段中使用 6 条指令创建了一个非常简单的自启动、自复位定时器。 在本例中，使用梯形图 (LAD) 编辑器输入程序指令。 下面的示例以 LAD 和语句表 (STL) 形式显示了整个程序。 描述列说明每个程序段的逻辑。 时序图显示了程序的运行。 STL 程序中没有程序段注释。

请注意项目树和程序编辑器。 通过项 目树将指令插入到程序编辑器的程序 段中，方法是将项目树 “ 指令 ” (Instructions) 部分中的指令拖放 到程序段中。 程序中的所有块均保存在项目树的程 序块文件夹中。 程序编辑器工具栏中的图标提供 PLC 命令和编程操作的快捷方式。

输入并保存程序之后，可以将程序下载到 CPU。

3SF1 行程开关可直接通过 AS-Interface 总线系统连接，实现安全通信。安全功能不再需要常规接线。

通过 3SF1 行程开关，ASIsafe 电子装置可以集成到开关外壳中。

模块化系统中选型举例

模块化系统

3SF11.4 和 3SF12.4 系列行程开关具有模块化结构设计，由不同形式的基本开关和按钮头（需单独订购）组成。得益于开关的模块化设计，终用户可以从为数众多的型号中选择适合自己应用的正确解决方案，

并在很短时间内自行安装。

设计

3SF1 开关有 4 种不同按钮盒规格可供选择：

根据 EN 50047，塑料按钮盒，31 mm 宽，带 M12 设备接头

根据 EN 50041，塑料按钮盒，40 mm 宽，带 M12 设备接头

塑料按钮盒，50 mm 宽，带 M12 设备接头和 M12 接口

金属按钮盒，56 mm 宽，带 M12 设备接头和 M12 接口

显示

该开关系列配有带三个 LED 的状态显示屏：

LED 1（黄色）：FIN1

LED 2（黄色）：FIN2

LED 3（绿/红）：AS-i/FAULT

连接

到 AS-Interface 的连接是通过一个连接到黄色 AS-Interface 总线电缆的 4 针 M12 接口（塑料型）完成的。

宽外壳（50 或 56 mm）还具有用于连接第二个行程开关的 M12 接口。如此，可实现安全等级 SIL 3 (IEC 62061/IEC 61508) 或 PL e (ISO 138491)。

优势

The 3SF1 safety switches offer:

ASIsafe electronics integrated in the enclosure, with low power consumption < 60 mA

An extensive range of actuators

Status display with three LEDs

Can be integrated easily via TIA Portal

应用

With the standard position switches, mechanical positions of moving machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can comply with

practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moving machine parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with IEC 609471 (Low-Voltage Controlgear, General) and IEC 6094751 (Electromechanical Control Circuit Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to ISO 14119.

Approvals

AS-Interface according to IEC 620262

The 3SF1 position switches are approved according to UL 508, UL 50 and UL 746-C.

Safety circuits

Standard IEC 6094751 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked in accordance with the standard IEC 6094751 with the symbol (→).

With a 3SF1 safety switch with (→), SIL 2 according to IEC 2061/IEC 61508 or PL c according to ISO 138491 can be attained if the corresponding fail-safe evaluation units are selected from the ASIsafe program and correctly installed.

If a second 3SF1 safety switch with (→) is used, SIL 3/PL e can be attained.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information see www.siemens.com/safety-evaluation.

技术规范

Type

3SF11.., 3SF12..

General data

Standards

IEC 6094751, ISO 14119

Data according to AS-Interface specification

I/O configuration/ID configuration

0/B

ID1 code/ID2 code (hex)

F/F

Power consumption, overall

mA

≤ 60

Inputs

Low signal range

Contact open

High signal range

Contact closed, Iin dynamic (Ipeak ≥ 5 mA)

Status display

Green/red dual LED

Rated impulse withstand voltage U imp

kV

0.6

EMC immunity

IEC 61000-1-2

kV

4

IEC 61000-4-3

V/m

10

IEC 61000-4-4 (A/B)

1/2

Mechanical endurance

Basic switch

15 x 106 operating cycles

With separate actuator, 3SF1.....V..

1 x 106 operating cycles

PFH value

Probability of failure upon request of the safety function, with 1 actuation per hour and B10 = 5 x 106

1/h

4 x 10-9

2 x 10-9

Hinge switches, 3SF1...-..U..

Shock resistance according to IEC 60068227

g/ms

30/11

Type

3SF1234

3SF1134

3SF1244

3SF1214

3SF1114

3SF1124

Enclosures

Material

Ultramid A3X2G7

Zinc die-casting GDZnAl4Cu1

Width

mm

31

40

50

56

Dimensions according to EN

EN 50047

EN 50041

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EN 50047

Degree of protection according to IEC 60529

IP65

IP66/IP67

Ambient temperature

During operation

° C

-25 ... +60

Storage, transport

-40 ... +80

Mounting position

Any

Pin assignments

M12 device plug, 4-pole

M12 socket, 4-pole

1 ASi +

1 Channel 2

2 Not assigned

2 Channel 2

3 ASi –

3 Not assigned

4 Not assigned

4 Not assigned

LED displays

3SF1 safety switch with ASi and LED status displays

Status display (operating state)

LED

No voltage on AS-Interface chip

Communication OK

Communication failed

Slave has address "0"

ASi/Fault (GN/RD/YE)

Safe inputs

LED

Not actuated

Actuated

F-IN1 (YE)

F-IN2 (YE)