

Freelance I/O

一、描述

取决于应用的不同，Freelance 分布式控制系统（DCS）能够使用多种 I/O 系统

- ✧ S700: 能够通过 PROFIBUS 或直接 I/O 连接 AC 700F 和 AC 900F 控制器
- ✧ S800: PROFIBUS 远程 I/O 标准应用方案。
- ✧ S800L: 高性价比 I/O。通过 PROFIBUS 连接。
- ✧ S900: 适用于本安应用（Ex）的远程 I/O，也可以使用在非危险区域。S900 通过 PROFIBUS 连接。

二、适用于 Freelance 的 S800 远程 I/O 系列



广泛、分布式、模块化的过程 I/O 系统，与 Freelance 控制器通过 PROFIBUS 通信。

S800 I/O 特点包括：

- ✧ 现场安装、靠近传感器和执行器，因此能够减少接线成本
- ✧ 能够在线更换或组态模块
- ✧ 所有 I/O 模块带有 G3 涂层能够用于腐蚀性环境
- ✧ 功能全面覆盖

适用于 Freelance 分布式控制系统的 I/O 模块请参见技术数据表。

优势

- ✧ 通过冗余实现高有效性，包括 I/O 模块级别
- ✧ 通过 HART 连接技术实现轻松组态和诊断

- ◇ SIL3 认证的高完整性 I/O 模块具有高的安全性
- ◇ 高精度的时间标签
- ◇ 运行时热组态和热插拔保证高可靠性

技术数据

| 字量输入模块 | 描述 |
|--------|--|
| DI810 | 16 ch., 2 groups of 8 ch., 24 V d.c., current sink |
| DI811 | 16 ch., 2 groups of 8 ch., 48 V d.c., current sink |
| DI814 | 16 ch., 2 groups of 8 ch., 24 V d.c., current source |
| DI818 | 32 ch., 2 groups of 16 ch., 24 V d.c., current sink |
| DI820 | 8 ch., separate returns, 110 V d.c., 120 V a.c. |
| DI821 | 8 ch., separate returns, 220 V d.c., 230 V a.c. |
| DI828 | 16 ch., separate returns, 110 V d.c., 120 V a.c. / d.c. |
| DI840 | 16 ch., 1 group of 16 ch., 24 V d.c., current sink, extended diagnostics, transmitter power supply |
| DI890 | 8 ch., separate returns, 24 V d.c., current sink. |

| 数字量输出模块 | 描述 |
|---------|---|
| D0810 | 16 ch., 2 groups of 8 ch., 24 V d.c., max 0.5 A, transistor, current source, short-circuit-proof |
| D0814 | 16 ch., 2 groups of 8 ch., 24 V d.c., max 0.5 A, transistor, current sink, short-circuit-proof |
| D0815 | 8 ch., 2 groups of 4 ch., 24 V d.c., max 2 A, transistor, current source, short-circuit-proof |
| D0818 | 32 ch., 2 groups of 16 ch., 24 V d.c., max 0.5 A, transistor, current source, short-circuit-proof |
| D0820 | 8 ch., separate returns, 5-250 V, max 3 A a.c. /d.c., relay (N. O.) |
| D0821 | 8 ch., separate returns, 5-250 V, max 3 A a.c. /d.c., relay (N. C.) |

| | |
|-------|---|
| D0828 | 16 ch., separate returns, 5-250V a.c. / 5-125V d.c. max 2A a.c./d.c., relay (N.C.) |
| D0840 | 16 ch., 1 group of 16 ch., 24 V d.c., max. 0,5 A, current source, short-circuit-proof, extended diagnostics |
| D0890 | 4 ch., separate returns, 11 V 40 mA, load 150-5000 Ohms, current source, short circuit-proof |

| 模拟量输入模块 | 描述 |
|---------|--|
| AI810 | 8 ch., 1 group of 8 ch., single ended with common return, 0(4)-20 mA, 0(2)-10 V, 12 bits |
| AI815 | 8 ch., 1 group of 8 ch., single ended with common return, 0(4)-20 mA 0(1)-5 V, 12 bits, HART interface, transmitter power supply |
| AI820 | 4 ch., 1 group of 4 ch., bipolar differential, $\pm 0(1)-5$ V, $\pm 0(2)-10$ V, $\pm 0(4)-20$ mA, 14 bits + sign |
| AI825 | 4 ch., separate returns, isolated bipolar, $\pm 0(2)-10$ V, $\pm 0(4)-20$ mA, 14 bits + sign |
| AI830A | 8 ch., 1 group of 8 ch., Pt100, Ni100, Ni120, Cu10, resistor 0-400 Ohms, 14 bits, 3-wire |
| AI835A | 8 ch., (7+ ref. junction), 1 group of 8 ch., TC types B, C, D, E, J, K, L, N, R, S, T, U, -30...75 mV, 15 bits |
| AI843 | 8 ch. + ref. junction, 1 group of 8 ch., TC types: B, C, E, J, K, L, N, R, S, T, U, -30...75 mV, 16 bits, extended diagnostics |
| AI845 | 8 ch., 1 group of 8 ch., single ended with common return, 0(4)-20 mA 0(1)-5 V, 12 bits, extended diagnostics, HART interface, transmitter power supply |
| AI890 | 8 ch., 1 group of 8 ch., single ended with common return, 0(4)-20 mA, 12 bits, transmitter power supply |
| AI893 | 8 ch. (7 + ref. junction), 1 group of 8 ch., TC types B, C, E, J, K, L, N, R, S, T, U, - 10...80 mV. RTD: Pt50-1000, Ni100-500, Cu10-100, resistor 0-4000 Ohms, 3-wire. 15 bits + sign |
| AI895 | 8 ch., 1 group of 8 ch., single ended with common return, 4-20 mA, 12 bits, HART interface, transmitter power |

supply

| 拟量输出模块 | 描述 |
|---------|--|
| A0810V2 | 8 ch., 1 group of 8 ch., 0(4)-20 mA, 14 bits, load: max 850 Ohms (short-circuit-proof) |
| A0815 | 8 ch., 1 group of 8 ch., 4..20 mA, 12 bit, load: max 750 Ohms (short-circuit-proof), HART interface |
| A0820 | 4 ch., separate returns, isolated bipolar, +-0(2)-10 V, +-0(4)-20 mA, 12 bits + sign, load: max 550 Ohms (current) / ≥ 2 kOhms (voltage), short-circuit-proof |
| A0845A | 8 ch., 1 group of 8 ch., 4-20 mA, 12 bit, load: max 750 Ω (short-circuit-proof) extended diagnostics, HART interface |
| A0890 | 8 ch., 1 group of 8 ch., 0(4)-20 mA, 12 bits, load: max 725 Ohms (short-circuit-proof) |
| A0895 | 8 ch., 1 group of 8 ch., 4-20 mA, 12 bits, HART interface, load: max 725 Ohms (short-circuit-proof) |

三、适用于 Freelance 的 S800L 远程 I/O 系列



这些模块既节省成本也能够节省时间，并且通过 PROFIBUS 连接到 Freelance 控制器。

通过高效设计以及 59mm 的安装高度，S800L 是高性价比应用的选择。牢固的模块、一体化设计、易于安装和智能连接，能够节省所有安装阶段的时间。

S800L 通过 PROFIBUS 与 Freelance 控制器通信。

S800L I/O 特点包括:

- ✧ 易于连接更高性能的 S800 I/O 模块
- ✧ 功能全面覆盖

优势:

- ✧ 仅有 59mm 的安装高度
- ✧ 坚固耐用、一体化设计
- ✧ 通过 DTM 或基于 GSD 的模板与控制系统集成
- ✧ 十六个端子使接线更容易
- ✧ 与 S800 I/O 模块完全兼容组合使用

技术数据:

| 模拟量输入模块 | 描述 |
|----------|--|
| AI801-eA | 1x8 channels, 0(4)..20 mA, 12 bit, single ended, 0.1%, Rated isolation 50 V. |

| 模拟量输出模块 | 描述 |
|----------|--|
| AO801-eA | 1x8 channels, 0(4)..20 mA, 12 bit, RLmax 850 Ohm, Rated isolation 50 V. |

| 数字量输入模块 | 描述 |
|----------|---|
| DI801-eA | 24 VDC, 1x16 channels, rated isolation 50 V. |
| DI802-eA | 120 VAC / DC, 8x1 channel, rated isolation 250 V. |
| DI803-eA | 230 VAC / DC, 8x1 channel, rated isolation 250 V. |

| 数字量输出模块 | 描述 |
|----------|---|
| DO801-eA | 24 VDC, 16 channels, 0.5 A. Short circuit proof, Rated isolation 50 V. |
| DO802-eA | Relay, normal open, 8x1 channel, 24-230 V, AC Rated isolation 250 V. |

四、S900 远程 I/O 系列



S900 远程 I/O 系统能够直接安装在一区和二区危险区域。

S900I/O 通过标准 PROFIBUS 与控制系统进行通信。

I/O 系统可以直接安装在现场，因此能够减少接线的费用。

这个系统具有坚固、容错和易于维护的特点。集成的断开机制能够允许在线更换，也就是说供电单元可以直接进行替换。

S900 I/O 特点包括：

- ◇ 适用于危险区域的远程 I/O 系统
- ◇ 冗余模式增加有效性
- ◇ 所有模块都支持在线热插拔
- ◇ 扩展诊断功能减少维护工作量

优势：

- ◇ 物有所值：集成电气隔离安全栅无需外置安全栅
- ◇ 自动诊断、基于总线或 S900I/O 站本身的诊断数据能够简化维护工作
- ◇ 易于组态：通过 FDT/DTM 或 GSD 文件进行组

技术数据：

| 数字量 I/O 模块 | 描述 |
|------------|--|
| DX910S/B/N | Digital input or output Input for dry contact or NAMUR |

initiator. Output for low power
intrinsic safe valves. 8 I/O
channels

| | |
|------------|--|
| DP910S/B/N | Frequency input Input for dry contact or NAMUR initiator |
| DX910S/B/N | Digital input or output Input for dry contact or NAMUR initiator. Output for low power intrinsic safe valves. 8 I/O channels |
| D0910S/B/N | Output for valves 4 channels |
| D0930N | With 4 normally-open contacts and 2 changeover contacts |

| 模拟量输入 模块 | 描述 |
|-------------|---|
| AI910S/B/N | ANALOG INPUT. 4 CHANNELS. TRANSMITTER POWER SUPPLY, 4..20 MA |
| AI930S/B/N | ANALOG INPUT, HART. 4 CHANNELS. TRANSMITTER POWER SUPPLY, 4..20 MA |
| AI931S/B/N | ANALOG INPUT, HART. 4 CHANNELS. PASSIVE INPUT, 0/4..20 MA |
| AI950S/B/N | TEMPERATURE. 4 CHANNELS. PT100, PT1000, NI100 IN 2-/3-/4-WIRE TECHNIQUE THERMOCOUPLES TYPE B, E, J, K, L, N, R, S, T ISOLATED INPUTS CHANNEL BY CHANNEL |

| 模 拟量输 出模块 | 描述 |
|-----------------|---|
| A09 10S/B/N | 4 CHANNELS. OUTPUT 0/4..20 MA. |
| A09 20S/B/N | 4 CHANNELS. OUTPUT 0/4..20 MA. ISOLATED OUTPUTS CHANNEL BY CHANNEL |

A09
30S/B/N

4 CHANNELS. HART. OUTPUT 0/4..20 MA.

| 紧凑箱 CB220N | 描述 |
|---------------|--|
| CB220N | S900 REMOTE I/O IN COMPACT FORM WITH UP TO 4 I/O |

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