100% Made & Designed in Italy

PROFINET IO MODULES



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OVERVIEW

Ideal for critical, real time automation applications, the R Line and ZE Line Profinet IO modules combine the ease of use of Profibus DP with a standard Ethernet physical layer The R Line is designed for flexible wiring requirements, small installation spaces, and high I/O density applications Enabled to power external sensors and featuring isolation between inputs, outputs, and remaining low voltage circuits of 1 500 Vac, R Line modules with 2 Ethernet ports can be daisy chained with fault bypass to ensure Ethernet connection even if one module in the chain fails The ZE Line provides easy power and serial link wiring by means of compact size of a bus housed in IEC EN 60715 rail Maximum data concentration is also guaranteed Both provide configuration via CODESYS softPLC software and Siemens TiA Portal and Simatic Step 7 design environment.

R-LINE





ZE-LINE



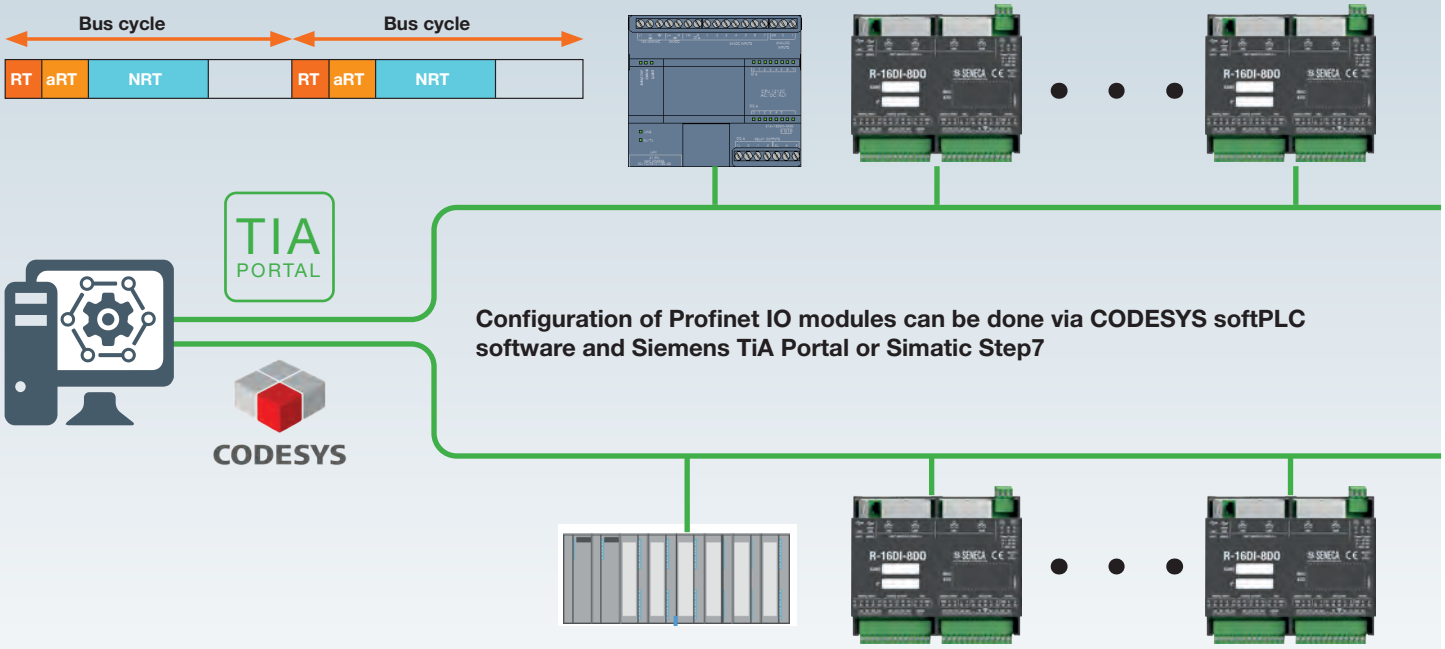


- **FLEXIBLE AND SPACE SAVING APPLICATIONS**
- **HIGH IO DENSITY**
- **INTEGRATED NETWORKING**
- **DAISY CHAIN (2 ETHERNET PORTS MODELS)**
- **FAULT BYPASS (2 ETHERNET PORTS MODELS)**
- **INDUSTRIAL RUGGEDNESS**
- **PROFINET IO REAL-TIME CLASS1**
- **CONFIGURATION BY TIA PORTAL**
- **CONFIGURATION BY CODESYS**
- **SHORT SCAN TIME**
- **MACHINE AUTOMATION**
- **DECENTRALIZED PERIPHERY**

CONFIGURATION

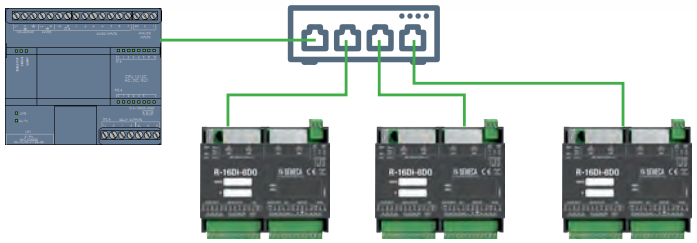
RT Class 1

R-Line modules support Profinet IO Class 1 (a version in which the different devices are not synchronized and each operates with its ownown cycle time Cyclic RT data transmission occurs at the beginning, followed by acyclic RT data, such as alarms At the end, a portion of bandwidth is reserved for non real time communication that can coexist on the same physical network (e g TCP/IP based) In class 1 we attempt to achieve isochrony in a software manner, relying on Ethernet priorities, with Profinet packets defined as priority 6 and managed by standard switches.



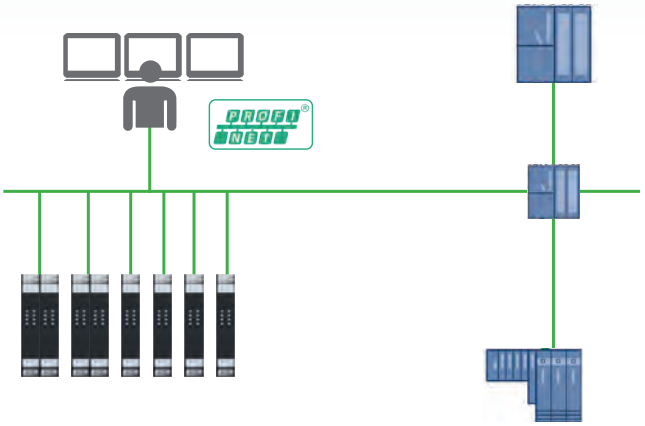
ARCHITECTURES

STAR CONNECTION (WITH SWITCH)

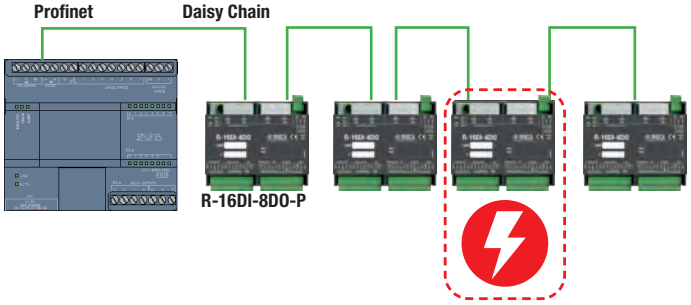


Connecting communication nodes to a switch with multiple PROFINET ports automatically creates a network topology with a star structure thanks to which the entire network does not fail if a single device fails.

STAR CONNECTION WITH PROFINET DEVICES

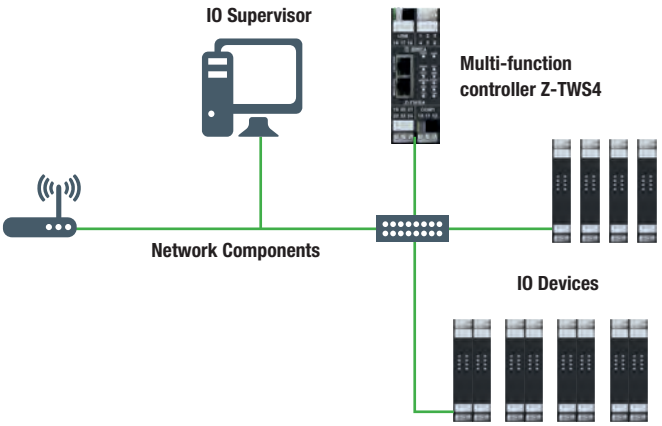


DAISY CHAIN CONNECTION WITH LAN FAULT BYPASS (MODELS WITH 2 ETHERNET PORTS)



Ethernet connection and data transmission active even in the event of failure or power failure of a module in the chain. This ensures availability and continuity of service.

STAR CONNECTION CONTROLLER IO MODULES



MODULI IO PROFINET

DIGITAL

	R-16DI-8DO-P	R-32DIDO-P
		
	16-CH digital inputs / 8-CH digital relay outputs Profinet IO module	32-CH digital inputs/outputs Profinet IO module
GENERAL DATA		
Power supply	10..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac
Power consumption (max)	3 W	3 W
Isolation (max)	1,5 kVac (3-ways)	1,5 kVac (3-ways)
LED status indicators	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication
Protection degree	IP20	IP20
Operating temperature	-25..+65°C	-25..+65°C
Dimension (wxhxd)	106 x 90 x 32 mm	106 x 90 x 32 mm
Weight	170 g	170 g
Case	PC / ABS self-extinguishing UL94-V0, color black	PC / ABS self-extinguishing UL94-V0, color black
Connections	Terminals pitch 3.5 mm Micro USB RJ45 (1 o2)	Terminals pitch 3.5 mm RJ45 (1 o2)
Installation	On DIN rail EN 60715, wall / panel-mounted	On DIN rail EN 60715, wall / panel-mounted
Programming	CoDeSys TIA Portal	CoDeSys TIA Portal
Special Functions	Dual Ethernet Daisy Chain Connection	Dual Ethernet Daisy Chain Connection
Approvals	CE	CE
COMMUNICATION		
Interfaces	Nr.1 or 2 Ethernet ports (with fault-bypass LAN function) 100 baseT over RJ45	Nr.1 or 2 Ethernet ports (with fault-bypass LAN function) 100 baseT over RJ45
Scan time	2 ms	2 ms
Protocols	Profinet IO	Profinet IO
Ethernet communication cable between devices	CAT5 or CAT5e unshielded	CAT5 or CAT5e unshielded
DIGITAL INPUTS		
Number	16	
Type	PNP with internal/external power supply, NPN with internal power supply; On/Off threshold: <8V; >9V	
DIGITAL OUTPUTS		
Number	8	
Type	SPST dry contact relay; voltage/corrent max 30 Vac/dc / 1 A; response time 20 ms (P2P); contact life 5*106 op. / 105 op. with load	
DIGITAL INPUTS/OUTPUTS (DI/DO)		
Number		32
Type		ON/OFF inputs: > 9 V; < 4 V; Vmax: 24 V MOSFET outputs, PNP; voltage/current max: 0.2 A / 24 V

MODULI IO PROFINET

ANALOG

	R-6RTD-P	R-SG-P	ZE-2AI-P	ZE-SG3-P
	COMING SOON 	COMING SOON 		COMING SOON 
	6-CH RTD inputs Profinet IO module	Strain gauge converter Profinet IO module	2-CH analog inputs Profinet IO module	Strain gauge converter Profinet IO module
GENERAL DATA				
Power supply	10..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac
Power consumption (max)	3 W	TBD	2 W	2 W
Isolation (max)	1,5 kVac (3-ways)	1,5 kVac	1,5 kVac	1,5 kVac
LED status indicators	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication
Protection degree	IP20	IP20	IP20	IP20
Operating temperature	-25..+65°C	-25..+65°C	-25..+70°C	-25..+70°C
Dimension (wxhxd)	106 x 90 x 32 mm	110 x 52 x 32 mm	17,5 x 102,5 x 111 mm	17,5 x 102,5 x 111 mm
Weight	170 g	80 g	110 g	110 g
Case	PC / ABS self-extinguishing UL94-V0, color black	PC / ABS self-extinguishing UL94-V0, color black	PA6, color black	PA6, color black
Connections	Terminals pitch 3.5 mm RJ45 (1 o2)	Terminals pitch 3.5 mm RJ45 (x1)	Removable 3-way screw terminals, 5mm pitch for cable up to 2.5mm2 RJ45 (x1)	Removable 3-way screw terminals, 5mm pitch for cable up to 2.5mm2 RJ45 (x1)
Installation	On DIN rail EN 60715, wall / panel-mounted	On DIN rail EN 60715, wall / panel-mounted	IEC EN 60715 35mm DIN rail in vertical position	IEC EN 60715 35mm DIN rail in vertical position
Programming	CoDeSys TIA Portal	CoDeSys TIA Portal	CoDeSys TIA Portal	CoDeSys TIA Portal
Special Functions	Dual Ethernet Daisy Chain Connection LAN fault bypass	Daisy Chain LAN fault bypass		
Certificazioni	Approvals	CE	CE	CE
COMMUNICATION				
Interfaces	Nr.1 or 2 Ethernet ports (with fault-bypass LAN function) 100 baseT over RJ45	Nr.1 Ethernet port (with fault-bypass LAN function) 100 baseT on RJ45	Nr.1 Ethernet port (with fault-bypass LAN function) 100 baseT on RJ45	Nr.1 Ethernet port (with fault-bypass LAN function) 100 baseT on RJ45
Scan time	2 ms	2 ms	2 ms	2 ms
Protocols	Profinet IO	Profinet IO	Profinet IO	Profinet IO
Ethernet communication cable between devices	CAT5 or CAT5e unshielded	CAT5 or CAT5e unshielded	CAT5 or CAT5e unshielded	CAT5 or CAT5e unshielded
ANALOG INPUTS				
Number	6	1	2	1
Type	RTD (Pt100, Pt500, Pt1000, Ni100), 24 bit resolution	Acquisition and powering up to 4 (350 Ω) or 8 (1,000 Ω) strain gauge load cells, 4- or 6-wire connection, 87 Ω equivalent impedance	Voltage 0..30V, Current 0..20mA, Accuracy 0.1% f.s, Resolution 16 bits, Input protection 40V / 25mA	Acquisition and powering up to 4 (350 Ω) or 8 (1,000 Ω) strain gauge load cells, 4- or 6-wire connection, 87 Ω equivalent impedance
ANALOG OUTPUTS				
Number		1		1
Type		Retransmission of net weight in current (0..20, 4..20 mA) or voltage (0..5/10 V), 24-bit resolution		Retransmission of net weight in current (0..20, 4..20 mA) or voltage (0..5/10 V), 24-bit resolution
DIGITAL INPUTS/OUTPUTS (DI/DO)				
Number		2		2
Type		ON/OFF inputs: > 9 V; < 4 V; Vmax: 24 V MOSFET outputs, PNP; voltage/current max: 0.2 A / 24 V		ON/OFF inputs: > 9 V; < 4 V; Vmax: 24 V MOSFET outputs, PNP; voltage/current max: 0.2 A / 24 V

MODULI IO PROFINET

MIXED

	R-8AI-8DIDO-P	R-6RTD-8DIDO-P	ZE-4DI-2AI-2DO-P
		COMING SOON 	
	8-CH analog inputs, 8-CH digital inputs/outputs Profinet IO module	8-CH RTD inputs, 8-CH digital inputs/outputs Profinet IO module	4-CH digital inputs, 2-CH analog inputs, 2-CH digital outputs Profinet IO module
GENERAL DATA			
Power supply	10..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac
Power consumption (max)	3 W	3 W	4 W
Isolation (max)	1,5 kVac (3-ways)	1,5 kVac (3-ways)	3 kVac
LED status indicators	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication	Power supply Error Status Inputs / Outputs STS (IP address / DHCP) Profinet IO Communication
Protection degree	IP20	IP20	IP20
Operating temperature	-25..+65°C	-25..+65°C	-25..+70°C
Dimension (wxhxd)	106 x 90 x 32 mm	106 x 90 x 32 mm	35 x 102,5 x 111 mm
Weight	170 g	170 g	110 g
Case	PC / ABS self-extinguishing UL94-V0, color black	PC / ABS self-extinguishing UL94-V0, color black	PA6, color black
Connections	Terminals pitch 3.5 mm RJ45 (1 o2)	Terminals pitch 3.5 mm RJ45 (1 o2)	Removable 3-way screw terminals, 5mm pitch for cable up to 2.5mm2 RJ45 (x1)
Installation	On DIN rail EN 60715, wall / panel-mounted	On DIN rail EN 60715, wall / panel-mounted	IEC EN 60715 35mm DIN rail in vertical position
Programming	CoDeSys TIA Portal	CoDeSys TIA Portal	CoDeSys TIA Portal
Special Functions	Dual Ethernet Daisy Chain Connection LAN fault bypass	Dual Ethernet Daisy Chain Connection LAN fault bypass	
Approvals	CE	CE	CE, UKCA
COMMUNICATION			
Interfaces	Nr.1 or 2 Ethernet ports (with fault-bypass LAN function) 100 baseT over RJ45	Nr.1 or 2 Ethernet ports (with fault-bypass LAN function) 100 baseT over RJ45	Nr.1 Ethernet port (with fault-bypass LAN function) 100 baseT on RJ45
Scan time	2 ms	2 ms	2 ms
Protocols	Profinet IO	Profinet IO	Profinet IO
Ethernet communication cable between devices	CAT5 or CAT5e unshielded	CAT5 or CAT5e unshielded	CAT5 or CAT5e unshielded
DIGITAL INPUTS			
Number			4
Type			PNP or NPN; Voltage input OFF < 4V, ON > 8V (max. 24 Vdc); Current input 20mA; current consumption 3mA@12Vdc, 10mA@24Vdc
ANALOG INPUTS			
Number	8	6	2
Type	V (±30V), mV (±120mV), mA (±24mA), TC: J, K, T, E, N, R, S, B, L, Pt100 (±200°C)	RTD (Pt100, Pt500, Pt1000, Ni100), 24 bit resolution	Voltage 0..30V, Current 0..20mA, Accuracy 0.1% f.s, Resolution 16 bits, Input protection 40V / 25mA
DIGITAL OUTPUTS			
Number			2
Type			SPDT dry contact relay; Voltage Max 250 Vac; Current Max 2A
DIGITAL INPUTS/OUTPUTS (DI/DO)			
Number	8	8	
Type	ON/OFF inputs: > 9 V; < 4 V; Vmax: 24 V MOSFET outputs, PNP; voltage/current max: 0.2 A / 24 V	ON/OFF inputs: > 9 V; < 4 V; Vmax: 24 V MOSFET outputs, PNP; voltage/current max: 0.2 A / 24 V	

CODICI D'ORDINE

Codice	Descrizione
R-32DIDO-1-P	32-CH digital input/output Profinet IO module (1 ETH)
R-32DIDO-2-P	32-CH digital input/output Profinet IO module (2 ETH)
R-32DIDO-P	32-CH digital input/output Profinet IO module (2 ETH)
R-6RTD-1-P	6-CH RTD Profinet IO Module (1 ETH)
R-6RTD-2-P	6-CH RTD Profinet IO Module (2 ETH)
R-6RTD-8DIDO-1-P	6-CH RTD, 8-CH digital inputs / outputs Profinet IO module (1 ETH)
R-6RTD-8DIDO-2-P	6-CH RTD, 8-CH digital inputs / outputs Profinet IO module (2 ETH)
R-8AI-8DIDO-1-P	6-CH analog inputs, 8-CH digital inputs / outputs Profinet IO module (1 ETH)

Codice	Descrizione
R-8AI-8DIDO-2-P	6-CH analog inputs, 8-CH digital inputs / outputs Profinet IO module (2 ETH)
R-8AI-8DIDO-P	6-CH analog inputs, 8-CH digital inputs / outputs Profinet IO module (2 ETH)
R-KEY-LT-P	Profinet IO <-> ModBUS RTU / TCP-IP Compact Industrial Gateway
ZE-2AI-P	2-CH analog inputs, Profinet IO Module
ZE-4DI-2AI-2DO-P	4-CH digital inputs, 2-CH analog inputs, 2-CH digital outputs, Profinet IO module
ZE-SG3-P	Profinet IO strain gauge converter module
Z-KEY-2ETH-P	Industrial Gateway - Serial Device Server, 2xProfinet IO
Z-KEY-P	Gateway - ModBUS RTU / TCP-IP -Profinet IO protocol converter

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