SAIA BURGESS CONTROLS

# Saia® E-line
# Remote I / O


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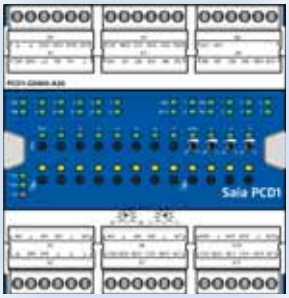
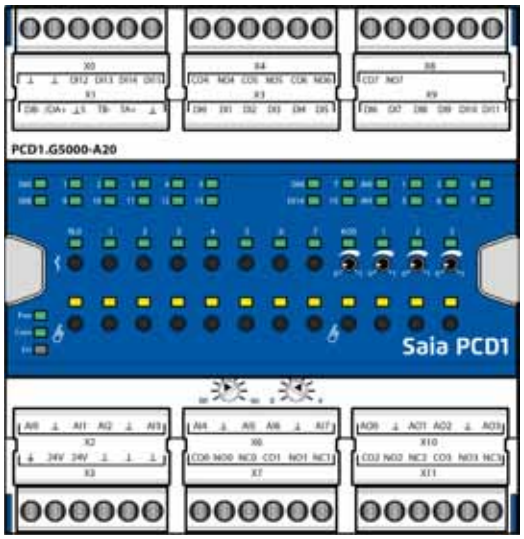
# 1.5.4 Saia PCD1 E-Line input and output modules



The remote I/O modules are controlled via RS-485 and enable decentralised automation using industrial quality components. The data point mix is specifically designed for applications in the HVAC sector. Moreover, the compact design enables the use of electrical distribution boxes alongside installations even in confined spaces. Commissioning and servicing are facilitated due to the local override operating level for each output. Remote maintenance is also possible using the optional access to the override operating level via the web interface in the Saia PCD® controller. Programming is also very efficient and fast using a comprehensive FBox library with web templates.

## Device design




## System properties

- Optimised S-Bus protocol for faster communication (4 × faster)
- Local override operating level via web panel or buttons on the module
- Specific I/O mix suitable for HVAC systems
- Convenient programming using the FBox library and web templates
- Industrial quality in accordance with IEC EN 61131-2
- Pluggable terminal blocks protected by covers
- Electrically isolated RS-485 interface

## Manual or remote override operating level

For modules with a manual override operating level, commissioning can occur independent of the master station.

The manual operating level can also be controlled remotely from a touch panel. If the bus line is disconnected, the module retains the manually set values. Traditional manual operating levels in the control cabinet door via potentiometers and switches can therefore be completely replaced.

**Three security levels can be defined for the manual operating level:**

1. Operation permitted only from the module
2. Operation permitted from the module and limited operation from the panel. If manual operation is activated at the module, it cannot be reset from the panel.
3. Unlimited operation from the panel and module.

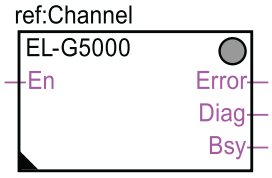
Depending on the application, manually set values may not be reset from the panel. This can therefore be deactivated or limited.

## Bus wiring

Most modules are equipped with integrated terminating resistors that enable wiring without additional external components.

## Programming

The modules are addressed and programmed via FBoxes.




**Communication FBox:**

- Data exchange for I/O via optimised S-Bus
- Configurable fall back state for bus interruption or timeout
- Direct generation of the symbols
- Reading and writing of the status of the override operating level
- Direct compatibility for web macros

**Web templates:**

- Web templates are available for the operation and visualisation of the override operating level

## Mounting and labelling in the automation control cabinet

The modules can be mounted in the standard automation control cabinet as well as mounting in the electrical sub-distributor. Covers are available for this for easy labelling. They also serve as contact protection for the buttons and terminals to prevent faulty operation.

## General technical data

| | |
|---|---|
| **Power supply** | |
| **Supply voltage** | 24 VDC, –15 / +20% max., incl. 5% ripple (in accordance with EN / IEC 61131-2) |
| **Electrically isolated** | 500 VDC between power supply and RS-485 and between inputs/outputs and RS-485 |
| **Power consumption max.** | 3 W |
| **Interfaces** | |
| **Communication** | RS-485 with galvanic isolation / baud rate: 9,600, 19,200, 38,400, 57,600, 115,200 bps (autobauding) |
| **Address switch for S-Bus** | Two rotary switches 0…9 |
| **Terminating resistor** | Integrated, can be activated via a wire jumper |
| **General specifications** | |
| **Ambient temperature** | Operation: 0…+55°C without forced ventilation / storage: –40…+70 °C |
| **Terminals** | Push-in spring-loaded terminals – max. 1.5 mm$^2$. |

## Technical data for inputs and outputs

| | |
|---|---|
| **Digital inputs** | |
| **Input voltage** | 24 VDC, high active |
| **Relay outputs** | |
| **Switching voltage max.** | 250 VAC / 30 VDC |
| **Switching current max.** | 4 A (resistive load) |
| **Contact protection** | n/a |
| **Analogue inputs** | |
| **Resolution** | 0…10 V: < 1.22 mV Pt1000: < 0.18 K Ni1000: < 0.12 K Ni1000TK5000: < 0.15 K 0…2,500 Ω: < 0.61 Ω |
| **Measured values** | 0…10 V, Pt/Ni1000, Ni1000TK5000, NTC, KTY, 0…2,500 Ω, 100 Ω…100 kΩ can be set via FBoxes |
| **Precision** | 0.3% at 25°C |
| **Analogue outputs** | |
| **Resolution** | 10 bits |
| **Signal range** | 0…10 V (10 mA max.) |
| **Man. Override operation** | Operation via buttons and potentiometer |

## Digital input/output modules

| Type | DI | Relays (normally open/ changeover) | AI | AO | Man. override op. | Width | Power supply |
|---|---|---|---|---|---|---|---|
| **PCD1.B1000-A20*** | 4 | 10 (6 / 4) | - | - | Yes | 6 HP | 24 VDC |
| **PCD1.B1010-A20*** | 24 | 10 (6 / 4) | - | - | Yes | 6 HP | 24 VDC |
| **PCD1.B1020-A20*** | 16 | 4 (0 / 4) | - | - | Yes | 6 HP | 24 VDC |

## Combined input / output modules

| Type | DI | Relay (normally open / changeover) | AI | AO | Man. override op. | Width | Power supply |
|---|---|---|---|---|---|---|---|
| **PCD1.G5000-A20*** | 16 | 8 (4 / 4) | 8 | 4 | Yes | 6 HP | 24 VDC |
| **PCD1.G5010-A20*** | 12 | 4 (0 / 4) | 12 | 8 | Yes | 6 HP | 24 VDC |
| **PCD1.G5020-A20*** | 8 | 4 (0 / 4) | 16 | 4 | Yes | 6 HP | 24 VDC |

## Analogue input / output modules

| Type | DI | Relay (normally open / changeover) | AI | AO | Man. override op. | Width | Power supply |
|---|---|---|---|---|---|---|---|
| **PCD1.W5300-A10*** | - | - | 4 (additional ±10 V, ±20 mA configurable) | 4 | No | 2 HP | 24 VDC |

No integrated terminating resistor for PCD1.W5300-A10

## Accessories

| Description |
|---|
| Cover, 6 HP, holes for override operating level. For labelling the modules for mounting in automation control cabinets |

*In preparation, see Chapter C2 "Product status"