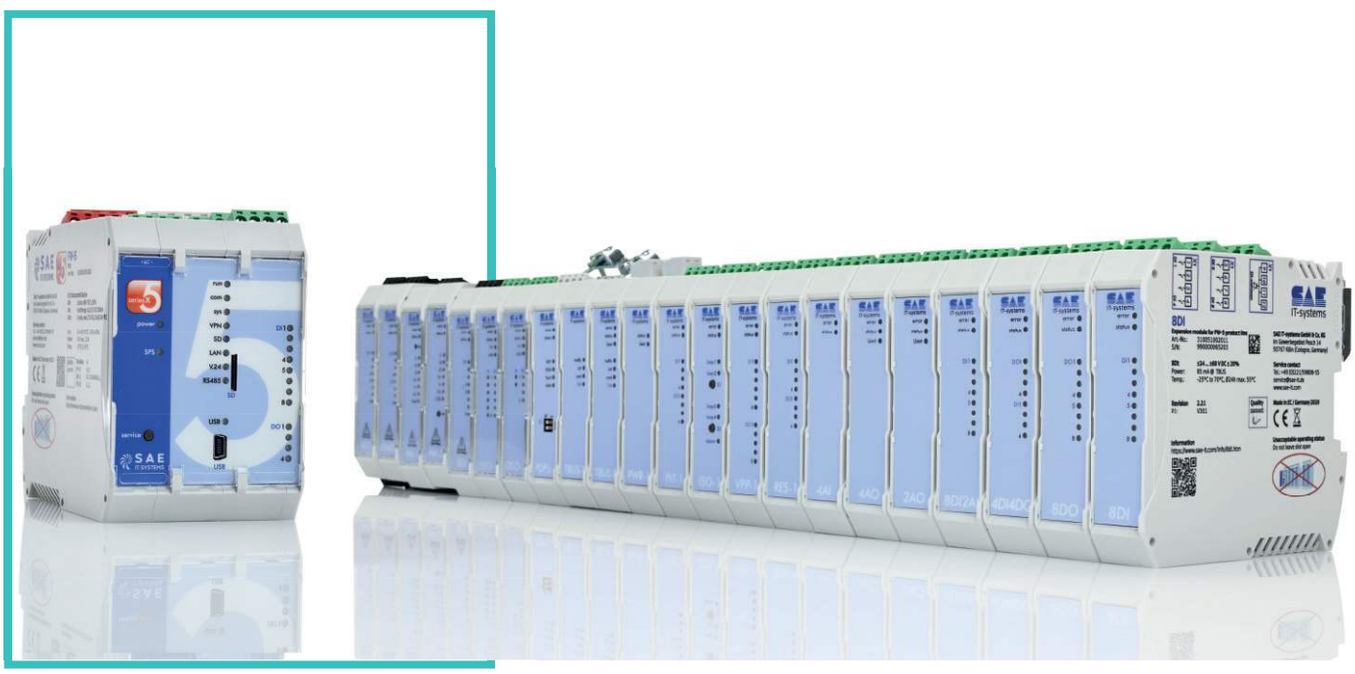
Extension boards

MICRO TELECONTROL STATIONS

SECURE CONNECTION

For some tasks it might be necessary to extend the capacity of the basic units of the SAE-FW-5 product family as required. Depending on type and constellation, up to 12 extension modules can be connected to one telecontrol unit. The so-called TBUS connector, which ensures communication with the base unit and also the power supply for most expansion modules, makes the connection convenient and uncomplicated. If the power supply of the base station is not sufficient, the PWR-1 can provide additional 2.8 A as an additional power supply. The TBUS Remote I/O extension also allows the integration of expansion modules in up to 10 remote islands with additional power supply.



IMPORTANT PROPERTIES:

- Versatile connection
- All process points available
- Comprehensive cyber security
- Diagnostics functions
- Easy configuration

INDICATIONS AND COMMANDS

The extension boards listed below allow the provision of additional digital inputs and outputs.
In the case of the mixed card 8DI2AI analog inputs are added.

8DI 8 Indications

8 indications
Digital wide-range inputs
± 24 to 60 V DC, ±20%
Common root
Threshold 18 V DC, acquisition 1 ms
Supply: 85 mA per module

8DO 8 Commands

8 command outputs
Relay outputs to 72 V DC
Individual channel floating, 2-pole connector
Switching range: DC: 2 A @ 48 V DC,
1 A @ 60 V DC
Supply: max. 200 mA per module

8DI-220 8 Indications

8 digital inputs / indications,
±110 VDC / ±220 VDC
Common root
Threshold 88 V DC, acquisition 1 ms
Supply: 85 mA per module

8DO-220 8 Commands

8 relay outputs to 230 V DC/ AC
Individual channel floating, 2-pole
Switching range: DC: 2 A @ 24 V DC,
0,2 A @ 110 V DC, 0,1 A @ 220 V DC res.,
AC:2A to 230 V AC
Supply: Approx. 200 mA per module

8DI2AI 8 Indications, 2 Measurands

8 indications
Digital wide range inputs 24 to 60 V DC
Common root
Threshold 18 V DC, acquisition 1 ms
2 16-bit measurands
multirange mA ±2,5 /±5 /±10 /±20 mA
overflow ±110%, ripple rejection 50 Hz
Supply: 120 mA per module

4DI4DO 4 Indications, 4 Commands (monostabil/bistabil)

4 commands,
Digital wide-range inputs 24 to 60 V DC
Further version with 110/ 220 VDC available
Threshold 17 /40 V DC, detection 1 ms
4 relay outputs, up to 75 V DC, 50 V AC
Individual channel floating, 3-pole connector
Switching capability: 2 A
Supply: 190 mA mono-/
75 mA bistable per module

MEASURANDS AND SET POINTS

The expansion modules listed below allow the provision of additional analog inputs and outputs.

4AI 4 Measurands

4 16-bit measurands
Multi-range ±2,5 /±5 /±10 /±20 mA,
Overflow ±110%
Ripple rejection 50 Hz, acquisition 100 ms
± 0,1% at 5°C to +55°C, max. error ±0,25%
Individual channel floating,
2-pole connector
Supply: approx. 150 mA per module

4AO 4 Set points

4 analog outputs, 16-bit set points
Uni-/bipolar ±20 mA, load max. 500 Ω
±0,1% /10 K over entire range
Individual channel floating, 2-pole connector
Supply: approx. 75 mA per module
Additional supply 24 to 60 V DC, max. 3,6 W

2AO 2 Set points

2 analog outputs, 16-bit set points
Uni-/bipolar ±20 mA, load max. 500 Ω
±0,1% /10 K over entire range
Individual channel floating, 2-pole connector
Supply: approx. 75 mA per module
Additional supply 24 to 60 V DC, max. 1,8 W

LACROIX

SPECIAL TASKS

Whether infrastructure applications, energy or district heating: each application area involves tasks with different requirements. Our many years of practical experience allow us to develop products that offer specifi c solutions for special applications.

DSO-1 3 double commands, 3 checkback indications

6 command relays, 1.5 pole, up to 72 V DC
1 of n, measuring circuit testing,
Cascadable for 6 single/3 double commands
2 internal release relays
6 checkback indications 24 to 60 V DC ±20%
Threshold 12 V DC, common root
Supply: max. 250 mA per module

DSO-2 1 double command 2-pole, 1 checkback indications

4 command relays, 2-polig, up to 72 V DC
1 of n, measuring circuit testing,
Cascadable for 1 double command,
2 internal release relays
2 return indications 24 to 60 V DC ±20%
Threshold 12 V DC, common root
Supply: max. 250 mA per module

PM-2 Power measurement

Measurement in low and medium voltage grids
directly / via transformer
Voltages U1/U2/U3/UL-N to 400 V AC
UL-L to 690 V AC
Currents I1/I2/I3/IN, 1 / 5 A, frequencies ± 1 mHz
Phase- to-phase voltage, power, energy
Power factor, integrated totals and averages
Supply: max. 150 mA per module

PM-1-S Power measurement

Measurement in low and medium voltage grids
via sensors
Voltages U1/U2/U3/UL-N to 3,25/√3 V AC,
UL-L calculated
Input impedance 200 kΩ
Currents I1/I2/I3/IN
Measuring range 0 to 225 mV secondary
Input impedance 490 kΩ
Active, reactive and apparent power
Frequency, cos □
Supply: max. 150 mA per module

PM-1-R Power measurement

Measurement in low and medium
voltage grids via Rogowski coils
Voltages U1/U2/U3/UL-N to 300 V AC
UL-L to 480 V AC
Input impedance 1130 kΩ
Currents I1/I2/I3/IN to 4 kA
Measuring range 0 to 400 mV secondary
Input impedance 490 kΩ
Active, reactive and apparent power
Frequency, cos □
Supply: max. 150 mA per module

VPP-1 6 Indications, 5 commands

6 indications, 24-60 V DC ±20 %, detection 1 ms
5 commands to 7 V DC, Switching range
1 A at 30 V DC, 1A at 60 VDC
2 measured values ±22mA,
Individual channel floating
Detection 100 ms,
2 setpoints, 20 mA
Common root
Load max. 500 Ω
Supply: max. 390 mA per module

RES-1 4 S0 pulse inputs, 2 measurements, 4 commands

4 S0 pulse-/integrated total inputs , active, 10 ms
2 16-bit measurands multi-range
±2,5 /±5 /±10 /±20mA
Overfl ow ±110%, acquisition 100 ms
4 command relays, 72 V DC, 1 A at 48 V DC
Individual channel isolation, 2-pole connector
Supply: 400 mA per module

ISO-1 Insulation measurement

4 measurands of isolation
between sensor and pipe
Measuring range 1 kΩ to 60 MΩ
Confi gurable limit values for Cu and NiCr
4 loop resistors
Measuring range 1 kΩ to 12 kΩ
Continuous transmission of the measurands
Measuring system NiCr: max. 1.500 m
Cu (Nordic System): max. 10.000 m
Recommendation < 2.500 m
Supply: 215 mA per module

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COMMUNICATION

The transmission of data is a topic of high importance: For many applications, devices with a wide variety of communication protocols must be brought together. Special converters and interface extensions are often required to solve this demanding task.

PDPS-1 Profibus-DP slave

Fieldbus link Profibus-DP V0
Direct integration into process image
Max. 488 Bytes, typ. 1,5 MBit/s
Supply: max. 260 mA per module

IFX-485-1 RS-485 converter

Transformer RS-232 and RS-485
From RS232 for FW-5/-GATE (X.101/V.24)
Patch cable 15 cm RJ45
Internal power supply

mcFO Media converter:

Power supply module 24 - 60 V DC
± 20 %, 20 VA
Supply of the FO modules, 2,8 A / 5 V/ 14 VA
Galvanically isolated
1 EIA/RS-485 interface
Galvanically isolated via FO-connection
1200 bit rate...64 bit rate, simplex
Power supply module: mcPS-1

mcFO: 2 x FO serial multi mode, ST/SMA

OTHER ACCESSORIES

No two tasks are the same. In practice, therefore, monitoring, control and automation of supply infrastructures and industrial facilities often entail additional requirements that need efficient solutions. To constantly meet these diverse requirements, we develop high-performance accessories for our systems in close cooperation with our customers.

T-BUS-T/-R Remote I/O

Remote I/O in isolated operation via
CAT5e patch cable
TBUS-R has an additional power supply
MSTB 4-pol. 0,2 to 2,5 mm²
Power supply 24 - 60 V DC ± 20 %, 15 W
2 screw terminals
MSTB 2-pol. 0,2 to 2,5 mm²
For interlock signals of the command
termination cmd and 1/n of DSO-x

PWR-1 Additional power supply

Supply voltage 24 - 60 V DC
± 20 % wide-range
Power consumption max. 15 W
Supply TBUS max. 2,8 A,
Load shedding when exceeded

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