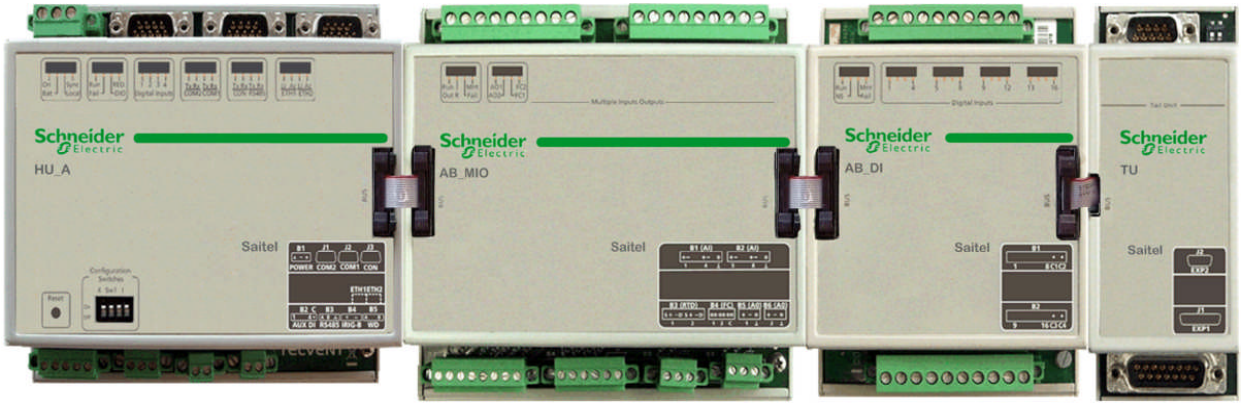
Saitel DR

Technical Specification Tables

The versatile, scalable and compact platform for secure field acquisition, automation and communication.

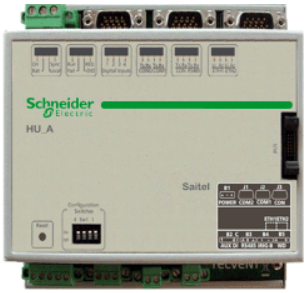
June 2015



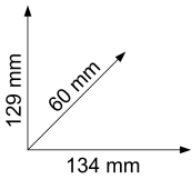
www.schneiderelectric.com +34 95 492 09 92

Contents

HU_A - Advanced Head Unit



Power supply: 24/48 Vdc.
Typical consumption: 9 W.
Weight: 580 g.



HU_A M551 x x 0 0 0 y zz

- **Version (Ax)**: 1: Lite, 2: Pro
- **Power (Bx)**: 2: 24 VDC, 3: 48 VDC
- **Coating**: 0: Without coating, 2: AVR80 coating (by ABchimie)
- **Revision**: (Revision code)

Hardware Features

- Processor: Freescale Coldfire MCF 5485 / 200 MHz.
- Architecture: 32 bits.
- Memory:
  - Flash: 8 MB + 8 MB.
  - Static RAM: 2 MB.
  - Dynamic RAM: 128 MB.
  - Backup RAM memory: Battery.
  - Internal Compact-Flash memory. (Only for Pro version). (The CF cards have to support True IDE).
- RS-232 serial ports:
  - Console (38,400 bps; 8-N-1).
  - 2 communication ports (max. 115,200 bps). One of them with galvanic isolation of 500 VAC.
- RS-485 Serial port: Asynchronous, half-duplex, max. 115,200 bps, with galvanic isolation of 500 VAC.
- Ethernet ports: 2 Fast-Ethernet ports 10/100 BaseT.
- Communications with acquisition blocks through the internal bus.
- Supports up to 32 blocks of acquisition, including the AB_SER modules (communications module). One can install up to 4 AB_SER modules per HU_A.
- Isolation: 1 kVAC.
- Field connection:
  - 2 RJ-45 (Ethernet ports).
  - 3 DB-9 male (RS-232 serial ports).
  - 4 screw-terminals 1.5 mm^2 / 15 AWG (RS-485 communications, IRIG-B, Watchdog and digital inputs).
  - 1 screw-terminal 2.5 mm^2 / 13 AWG (power input).
- 4 general purpose digital inputs:
  - Type: Simple (voltage-free contact).
  - Timestamp: SOE of 5 ms.
  - Polarization voltage (PV): 12-24 / 48 VDC, internal, depending on the polarization of the module.
  - Input current per signal: < 5.5 mA at nominal polarization voltage (PV).
  - Nominal value at level “1”: From 80% to 120% PV.
  - Nominal value at level “0”: From 0 to 30% PV.
  - Polarization range: From 80% to 120% PV.
  - Polarization blocks isolation: Through optocoupler 2.5 kV_{RMS}.

HU_A- Advanced Head Unit

Software Features

- Real time clock with high accuracy: 7 ppm.
- Discrimination time between events: 1 ms (SOE is available).
- Monitoring using Watchdog.
- External synchronization:
  - GPS, using the COM1 port.
  - IRIG-B, using a 2-way dedicated connector.
  - SNTP.
  - Protocol.

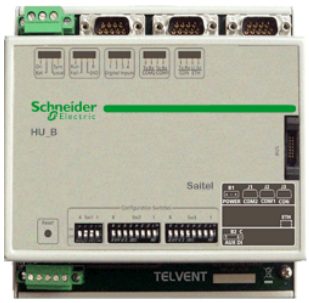
Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

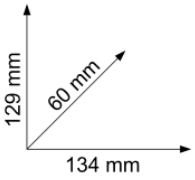
Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

HU_B – Basic Head Unit



Power supply: 24/48 Vdc.
Typical consumption: 3 W.
Weight: 550 g.



HU_B M552 x 0 0 0 0 y zz

Power (Ax):
2: 24 V_{DC}
3: 48 V_{DC}

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Features

- Processor: Freescale Coldfire MCF 5282 / 64 MHz.
- Architecture: 32 bits.
- Memory:
  - Flash: 512 KB (internal) + 2 MB (external flash).
  - Static RAM: 1 MB.
  - Dynamic RAM: 1 MB.
  - Backup RAM memory: Battery.
- RS-232 serial ports:
  - Console (38,400 bps; 8-N-1).
  - 2 communication ports (max. 38,400 bps).
- Ethernet port: 1 Fast-Ethernet port 10/100 BaseT.
- Communication with acquisition blocks through internal bus.
- Supports up to 16 blocks of acquisition. Communication with AB_SER modules not available.
- Isolation: 1 kVAC.
- Field connection:
  - 1 RJ-45 (Ethernet port).
  - 3 DB-9 male (RS-232 serial ports).
  - 1 screw-terminal 1.5 mm^2 / 15 AWG (digital inputs).
  - 1 screw terminal 2.5 mm^2 / 13 AWG (power input).
- 4 general purpose digital inputs:
  - Type: Simple (voltage-free contact).
  - Timestamp: SOE of 5 ms.
  - Polarization voltage (PV): 12-24 / 48 VDC, internal, depending on the polarization of the module.
  - Input current per signal: < 5.5 mA at nominal polarization voltage (PV).
  - Nominal value at level “1”: From 80% to 120% PV.
  - Nominal value at level “0”: From 0 to 30% PV.
  - Polarization range: From 80% to 120% PV.
  - Polarization blocks isolation: Through optocoupler 2.5 kV_{RMS}.

HU_B – Basic Head Unit

Software Features

- Real time clock with high accuracy: 7 ppm.
- Discrimination time between events: 1 ms. (SOE not available).
- Monitoring using Watchdog (internal).
- External synchronization:
  - GPS, using the COM1 port.
  - SNTP.
  - Protocol.

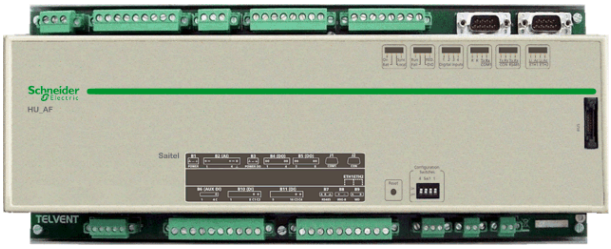
Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

HU_AF – Advanced Acquisition Head Unit



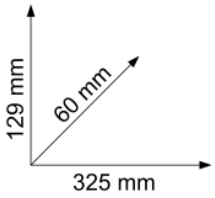
HU_AF M503 x x x x 0 y zz

- **Version (Ax)**: 1: Lite; 2: Pro
- **Power and DO Pol (Bx)**: 2: 24 VDC; 3: 48 VDC
- **DI Pol (Cx)**: 2: 12 - 24 VDC; 3: 48 VDC; 4: 125 VDC
- **Analog Inputs (Dx)**: 1: Without analog inputs; 2: 4 analog inputs
- **Coating**: 0: Without coating; 2: AVR80 coating (by ABchimie)
- **Revision**: (Revision code)

Hardware Features (General)

- Processor: Freescale Coldfire MCF 5485 / 200 MHz.
- Architecture: 32 bits.
- Memory:
  - Flash: 8 MB + 8 MB.
  - Static RAM: 2 MB.
  - Dynamic RAM: 128 MB.
  - Backup RAM memory: Battery.
  - Internal Compact-Flash memory. (Only for Pro version). (The CF cards have to support True IDE).

Power Supply: 24/48 Vdc.
Typical Consumption: 10 W.
Weight: 1100 g.



- RS-232 serial ports:
  - Console (38,400 bps; 8-N-1).
  - 1 communication port (max. 115,200 bps).
- RS-485 Serial port: Asynchronous, half-duplex, max. 115,200 bps, with galvanic isolation of 500 VAC.
- Ethernet ports: 2 Fast-Ethernet ports 10/100 BaseT.
- Communications with acquisition blocks through the internal bus.
- Supports up to 32 blocks of acquisition, including the AB_SER modules (communications module). One can install up to 4 AB_SER modules per HU_AF.
- Isolation: 1 kVAC.
- Field connection:
  - 2 RJ-45 (Ethernet ports).
  - 2 DB-9 male (RS-232 serial ports).
  - 4 screw-terminals 1.5 mm^2 / 15 AWG (RS-485 communications, IRIG-B, Watchdog and digital inputs).
  - 6 screw-terminals 2.5 mm^2 / 13 AWG (1 for power input, 1 for DO polarization, 2 for digital inputs and 2 for digital outputs).
  - 1 optional screw-terminal 2.5 mm^2 / 13 AWG (for analog inputs), depending on the ordering options.
- 4 general purpose digital inputs, similar to the HU_A.

Hardware Features (Digital Inputs)

- Inputs: 16 (4 per common).
- Maximum number of counter inputs: 16.
- Polarization voltage (PV): 12-24 / 48 / 125 VDC, depending on the ordering options.
- Input current per signal: < 5.5 mA at polarization voltage (PV).
- Nominal value at level “1”: From 80% to 120% PV.
- Nominal value at level “0”: From 0 to 30% PV.
- Polarization range: From 80% to 120% PV.
- Polarization blocks isolation: Through optocoupler 2.5 kV_{RMS}.

HU_AF – Advanced Acquisition Head Unit

Hardware Features (Digital Outputs)

- Outputs: 8.
- Polarization voltage (PV): 24 / 48 VDC, depending on ordering options.
- Polarization range: From 80% to 120% PV.
- Polarization consumption: 0.4 W/relay.
- Maximum output current: 16 A (relay), 5 A (terminal).
- Output switching capacity (L/R = 20 ms): 125 VDC / 150 mA; 48 VDC / 500 mA; 24 VDC / 2 A; 12 VDC / 5 A.
- Output switching capacity (L/R = 40 ms): 48 VDC / 400 mA; 24 VDC / 1200 mA; 12 VDC / 5 A.
- Isolation: Through 2.5 kV_{RMS} (between outputs and between outputs and power supply).

Hardware Features (Analog Inputs)

- Inputs: 4, differential type.
- Input range:
  - Voltage: ±5 VDC / 0 – 5 VDC.
  - Current: ±20 mA / 0 – 20 mA / 4 – 20 mA.
- Conversion:
  - Conversion of current input through an external resistor of 250 Ω.
  - 8-channel multiplexing.
  - 16-bit Sigma-Delta converter.
- Accuracy better than 0.1% at 25º C.
- Input impedance greater than 200 kΩ.
- Voltage tolerance in common mode greater than 15 V.
- Overvoltage protection.
- Galvanic isolation through optocoupler 2.5 kV_{RMS}.

Software Features (General)

- Real time clock with high accuracy: 7 ppm.
- Discrimination time between events: 1 ms (SOE is available).
- Monitoring using Watchdog.
- External synchronization: GPS (using COM1) / IRIG-B (using a 2-way dedicated connector) / SNTP / Protocol.

Software Features (Digital Inputs)

- Input type: Simple / Double / Slow counter.
- Processing of digital inputs:
  - Status indications (simple and double).
  - Memorized indications.
  - 32-bit pulse counters, 45 Hz (single or double edge).
- Timestamp: 1 ms.
- Filtering time: 0 – 255 ms.
- Settling time : 0 – 25500 ms.
- Change memory: 0 – 2550 ms.
- Anti-chattering window: 0 – 255 s.
- Number of events for chattering: 1 – 255 changes.

HU_AF – Advanced Acquisition Head Unit

Software Features (Digital Outputs)

- Output type: Simple / Double.
- Processing of digital outputs:
  - Pulsing (fixed time).
  - Latching.
- Security mechanism: SBO (Select-Before-Operate) and coil feedback.
- Output actuation timing: 1 – 65535 ms.

Software Features (Analog Inputs)

- Signal preprocessing:
  - Digital filtering.
  - Range limits detection.
  - Value change detection.
  - Zero value cancellation.
- Common mode rejection ratio: 90 dB

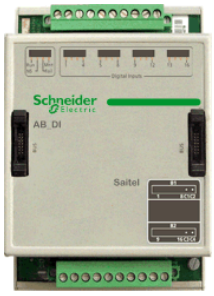
Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

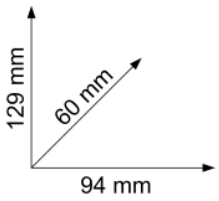
Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_DI – 16 Digital Inputs



Power supply: Internal bus.
Typical consumption: 0.55 W.
Weight: 420 g.



AB_DI M555 x 0 0 0 0 y zz

DI Pol (Ax):
2: 12 – 24 VDC
3: 48 – 60 VDC
4: 125 VDC
5: 220 VDC

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Features

- Inputs: 16.
- Maximum number of counter inputs: 16.
- Inputs per common: 4.
- Polarization voltage (PV): 12-24 / 48 / 125 / 220 VDC (depending on the ordering options).
- Input current per signal: < 5.5 mA at polarization voltage (PV).
- Nominal value at level “1”: From 80% to 120% PV.
- Nominal value at level “0”: From 0 to 30% PV.
- Polarization range: From 80% to 120% PV.
- Polarization blocks isolation: Through optocoupler 2.5 kV_{RMS}.
- Field connection:
  - 2 screw terminals 2.5 mm^2 / 13 AWG (digital inputs).

Software Features

- Input type: Simple / Double / Slow counter.
- Processing of digital inputs:
  - Status indications (simple and double).
  - Memorized indications.
  - 32-bit pulse counters, 45 Hz (single or double edge).
- Timestamp: 1 ms.
- Filtering time: 0 – 255 ms.
- Settling time : 0 – 25500 ms.
- Change memory: 0 – 2550 ms.
- Anti-chattering window: 0 – 255 s.
- Number of events for chattering: 1 – 255 changes.

Environmental Conditions

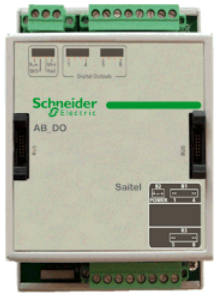
- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

AB_DI – 16 Digital Inputs

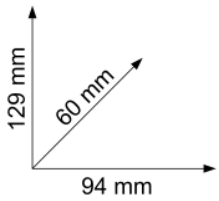
Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_DO – 8 Digital Outputs to Relay



Power supply: Internal bus.
Typical consumption: 0.75 W.
Weight: 530 g.



AB_DO M554 x 0 0 0 0 y zz

Polarización (Ax):
2: 24 VDC
3: 48 VDC

Tropicalizado:
0: Sin tropicalizado
2: Tropicalizado AVR80 (por ABchimie)

Revisión:
(Código de revisión)

Hardware Features

- Outputs: 8.
- Polarization voltage (PV): 24 / 48 VDC.
- Polarization range: From 80% to 120% PV.
- Polarization consumption: 0.4 W/relay.
- Maximum output current: 16 A (relay), 5 A (terminal).
- Output switching capacity (L/R = 20 ms):
  - 125 VDC / 150 mA.
  - 48 VDC / 500 mA.
  - 24 VDC / 2 A.
  - 12 VDC / 5 A.
- Output switching capacity (L/R = 40 ms):
  - 48 VDC / 400 mA.
  - 24 VDC / 1200 mA.
  - 12 VDC / 5 A.
- Isolation: Through 2.5 kV_{RMS} (between outputs and between outputs and power supply).
- Field connection:
  - 3 screw-terminals 2.5 mm^2 / 13 AWG (digital outputs and polarization input).

Functional Features

- Output type: Simple / Double.
- Processing of digital outputs:
  - Pulsing (fixed time).
  - Latching.
- Security mechanism: SBO (Select-Before-Operate) and coil feedback.
- Output actuation timing: 1 – 65,535 ms.

Environmental Conditions

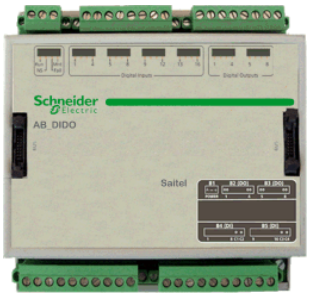
- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

AB_DO – 8 Digital Outputs to Relay

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_DIDO – 16 Digital Inputs and 8 Digital Output



AB_DIDO M572 x x 0 0 0 y zz

DI Pol (Ax):
2: 12 – 24 VDC
3: 48 VDC
4: 125 VDC

DO Pol (Bx):
2: 24 VDC
3: 48 VDC

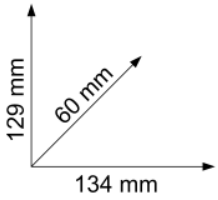
Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Revision:
(Revision code)

Hardware Features (Inputs)

- Inputs: 16.
- Maximum number of counter inputs: 16.
- Inputs per common: 4.
- Polarization voltage (PV): 12-24 / 48 / 125 VDC (depending on the ordering options).
- Input current per signal: < 5.5 for the nominal polarization voltage (PV).
- Nominal value at level “1”: From 80% to 120% PV.
- Nominal value at level “0”: From 0 to 30% PV.
- Polarization range: From 80% to 120% PV.
- Polarization blocks isolation: 2.5 kV_{RMS}.

Power supply: Internal bus.
Typical consumption: 0.75 W.
Weight: 720 g.



Hardware Features (Outputs)

- Outputs: 8.
- Polarization voltage (PV): 24/48 VDC.
- Polarization range: From 80% to 120% PV.
- Polarization consumption: 0.4 W/relay.
- Maximum output current: 16 A (relay), 5 A (terminals).
- Output switching capacity L/R = 20 ms: 125 VDC / 150 mA, 48 VDC / 500 mA, 24 VDC / 2 A and 12 VDC / 5 A.
- Output switching capacity L/R = 40 ms: 48 VDC / 400 mA, 24 VDC / 1200 mA and 12 VDC / 5 A.
- Isolation: 2.5 kV_{RMS} (between outputs and between outputs and power supply).

Hardware Features (Generals)

- 5 screw-terminals 2.5 mm^2 / 13 AWG (digital inputs, digital outputs and polarization input).

Functional Features (Inputs)

- Input type: Simple / Double / Slow counter.
- Processing of digital inputs:
  - Status indication (single and double).
  - Memorized indication.
  - 32-bit pulse counter, 45 Hz (single or double edge).
- Timestamp: 1 ms.
- Filtering time: 0 – 255 ms.
- Settling time: 0 – 25500 ms.
- Change memory: 0 – 2550 ms.
- Anti-chattering window: 0 – 255 s.
- Number of events for chattering: 1 – 255 changes.

AB_DIDO – 16 Digital Inputs and 8 Digital Outputs

Functional Features (Outputs)

- Output type: Simple / Double.
- Processing of digital outputs:
  - Pulsing (fixed time).
  - Latching.
- Safety mechanism: SBO (Select-Before-Operate) and coil feedback.
- Output actuation timing: 1 – 65,535 ms.

Environmental Conditions

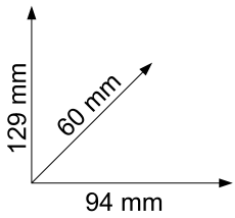
- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_AI – 8 Analog Inputs

Power supply: Internal bus.
Typical consumption: 0.6 W.
Weight: 425 g.



AB_AI M556 0 0 0 0 0 y zz

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Specifications

- Inputs: 8, differential type.
- Input range:
  - Voltage: ±5 VDC / 0 – 5 VDC.
  - Current: ±20 mA / 0 – 20 mA / 4 – 20 mA.
- Conversion:
  - Conversion of current input through an external resistor of 250 Ω.
  - 8-channel multiplexing.
  - 16-bit Sigma-Delta converter.
- Accuracy better than 0.1% at 25º C.
- Input impedance greater than 200 kΩ.
- Voltage tolerance in common mode greater than 15 V.
- Overvoltage protection.
- Galvanic isolation through optocoupler 2.5 kV_{RMS}.
- Field connection:
  - 2 screw terminals 2.5 mm^2 / 13 AWG (analog inputs).

Functional Features

- Signal preprocessing:
  - Digital filtering.
  - Range limits detection.
  - Value change detection.
  - Zero value cancellation.
- Common mode rejection ratio: 90 dB.

Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

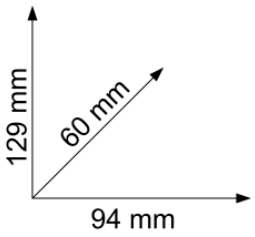
AB_AI – 8 Analog Inputs

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_AO – 8 Analog Outputs

Power supply: Internal bus.
Typical consumption: 2.8 W.
Weight: 410 g.



AB_AO M557 0 0 0 0 0 y zz

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Specifications

- Outputs: 4 current outputs.
- Range: From 4 mA to 20 mA up to 500 Ω.
- 14-bits Sigma-Delta converter.
- Accuracy better than 0.2% at 25 ºC.
- Calibration independent per channel.
- Maximum output power: 200 mW.
- Protection against overvoltage.
- Connectivity:
  - 2 screw terminals 2.5 mm^2 / 13 AWG (analog outputs).
  - 2 screw terminals 2.5 mm^2 / 13 AWG (digital outputs for validation).

Functional Features

- Signal preprocessing:
  - Power filtering: Conversion cycle with filtering of 20 ms / 50 Hz and 16.6 ms / 60 Hz.
  - Configurable output range.
  - Scaling to engineering units.
  - Configurable reset value.

Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

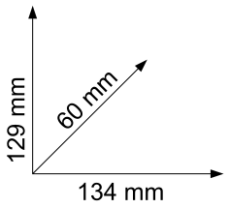
AB_AO – 8 Analog Outputs

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_AC – Direct Measurements

Power supply: Internal bus.
Typical consumption: 1.94 W.
Weight: 670 g.



AB_AC M562 x 0 0 0 0 y zz

Input Voltage (Ax):
1: 110 VAC (L - L)
2: 400 VAC (L - L)

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Features

- 6 analog channels, alternating voltages and/or currents provided for measurements transformers. An additional input for the neutral current line.
- 1 digital input channel + 1 digital output channel. (The output channel is only available for Synchrocheck).
- Digital input. Polarization voltage: 24 V.
- Digital output:
  - Max. voltage: 200 VDC.
  - Max. current: 200 mA.
  - Resistance: 15 Ω.
- Field connection:
  - 2 screw-terminals 1.5 mm^2 / 15 AWG. (Digital channels)
  - 2 screw terminals 2.5 mm^2 / 13 AWG. (Analog channels).

Analog Inputs Features

- Available input ranges (Other input ranges are available upon request):
  - Ordering option of 110 V_{RMS}; Phase-neutral voltage: 63.5 V_{RMS} / Currents: 5 A_{RMS}.
  - Ordering option of 400 V_{RMS}; Phase-neutral voltage: 230 V_{RMS} / Currents: 5 A_{RMS}.
- Conversion:
  - Multiplexing of current channels to measure for overcurrents.
  - 16-bit SAR converter.
  - Conversion time of 4 µs.
- Accuracy (according to IEC60688):
  - Normal range: 0.2% (up to 120% of nominal values).
  - Extended range: 0.25% (136% of voltage and 150% of current).
- Energies single-phase and three-phase in 4-quadrants.
- Energies accuracy (according to IEC60687): 0.2%.
- Frequency accuracy: 10 mHz.
- Input impedance of 400 kΩ.
- Burden: CT = 0.15 VA and VT = 0.01 VA.
- Varistors to prevent overvoltages.
- Galvanic isolation through transformer of 3 kVAC.
- Measuring accuracy: Class 0.3 (IEC60688), for voltages, currents and active and reactive powers.

AB_AC – Direct Measurements

Software Features (Basic Application)

- Measurements:
  - Phase-phase voltages (R-S, R-T and S-T) and true RMS voltage phase-neutral.
  - Network frequency
  - True RMS current.
  - Active and reactive power, single-phase and three-phase.
  - Active energy demand and supply, inductive and capacitive energy, single-phase and three-phase.

Software Features (Synchrocheck Applications – ANSI 25 and ANSI 27 Protections)

- Measurements:
  - RMS voltage at inputs VR and VS and voltage difference VR-VS.
  - Frequency at inputs VR and VS and frequency difference VR-VS.
  - Phase delay difference VR-VS.
- Possibility of working on manual or automatic mode, with two different and compatible functions; Verification of synchronism (DE mode) and verification of under voltage (SE mode).
- Main features of “DE mode” (verification of synchronism):
  - Maximum difference in voltage, frequency and phase delay configurable.
  - Time of relay closure configurable.
  - The closure command will be sent when the phase difference is minimum.
  - Voltage presence checking.
- Main features of “SE mode” (verification of under voltage):
  - 2 thresholds to detect the presence and absence of voltage.
  - Conditions of closure configurable.

Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

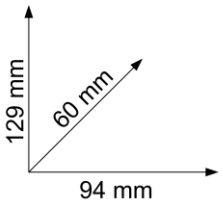
AB_AC – Direct Measurements

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_MIO – Multiple Inputs and Outputs

Power supply: Internal bus.
Typical consumption: 0.6 W.
Weight: 425 g.



AB_MIO M566 0 0 0 0 0 y zz

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Features

- Signals: 8 analog inputs, 2 analog outputs, 2 fast-counter inputs and 2 RTD inputs.
- Field connection:
  - 4 screw-terminals 1.5 mm^2 / 15 AWG. (Analog outputs, fast-counter inputs and RTD inputs).
  - 2 screw-terminals 2.5 mm^2 / 13 AWG. (Analog inputs).

Analog Inputs Features

- The analog inputs are differential-type, with input range:
  - Voltage: ±5 VDC / 0 – 5 VDC.
  - Current: ±20 mA / 0 – 20 mA / 4 – 20 mA.
- Conversion:
  - Conversion of current input through an external resistor (250 Ω).
  - 8-channel multiplexing.
  - 16-bit Sigma-Delta converter.
- Common mode rejection ratio: 90 dB.
- Accuracy better than 0.1% at 25º C.
- Input impedance greater than 200 kΩ.
- Voltage tolerance in common mode greater than 15 V.
- Protection for overvoltage.
- Galvanic isolation through optocoupler 1 kV_{RMS}.

Analog Outputs Features

- The analog outputs are current outputs (between 4 and 20 mA at 500 Ω).
- 14-bit Sigma-Delta converter.
- Calibration independent per channel.
- Accuracy with error less than 0.2% at 25º C.
- Maximum output power of 200 mW.
- Protection for overvoltages.
- Galvanic isolation through optocoupler of 1 kV_{RMS}.

Fast-Counter Inputs Features

- 32-bits. Power supply of 24 V, single or double pulses (in quadrature).
- Amplitude of the pulse signal: 24 VDC.
- Typical frequency of 10 kHz.
- Galvanic isolation through optocoupler of 2 kV_{RMS}.

AB_MIO – Multiple Inputs and Outputs

RTD Inputs Features

- 4 wires inputs.
- Accuracy of 0.1 ºC.
- Calibration independent per channel.
- Galvanic isolation through optocoupler of 1 kV_{RMS}.

Functional Features

- Analog inputs preprocessing; Digital filtering, range limits detection, value change detection and zero value cancellation. Common mode rejection ratio: 90 dB.
- Power filtering for analog outputs: Conversion cycle with filtering of 20 ms / 50 Hz and 16.6 ms / 60 Hz.

Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

AB_SER – Serial Communications

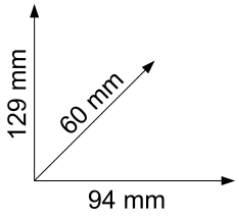
With auxiliary power

Without auxiliary power

Without auxiliary power & FO 820 nm (ST)

Without auxiliary power & FO 650 nm (Versatile Link)

Power supply: Internal bus.
Typical consumption: 1.1 W.
Weight: 420 g.



AB_SER M567 x 0 0 0 0 y zz

Version (Ax):
1: Without auxiliary power + 4 RS-232/RS-485 ports
2: With auxiliary power + 4 RS-232/RS-485 ports
3: Without auxiliary power + 2 RS-232/RS-485 ports + 2 650 nm FO ports (Versatile Link)
4: Without auxiliary power + 2 RS-232/RS-485 ports + 2 820 nm FO ports (ST)

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Features

- The B1 connector is only available in the module WITH auxiliary power.
- All modules have 4 channels, configurable by software. All ports can support asynchronous communication and only two of them synchronous and asynchronous. (By default, all channels are asynchronous).
- Signal level (configurable by software); RS-232, RS-485 (2 wire) and RS-422 (4 wire).
- Signals: Rx – Tx, RTS and CTS.
- Maximum number of AB_SER modules on ITB is 4.
- AB_SER only can be mounted using a HU_A or HU_AF module as CPU.
- Galvanic isolation per block of 500 V.
- Field connection (depending on ordering options):
  - Version 1: 4 DB9 male connectors.
  - Version 2: 1 screw-terminals 2.5 mm^2 / 13 AWG + 4 DB9 male connectors.
  - Version 3: 2 DB9 male connectors + 2 Versatile Link connectors (650 nm).
  - Version 4: 2 DB9 male connectors + 2 ST connectors (820 nm).

Functional Features

- Transmission characteristics configurable for each channel.
- Transmission rates (other transmission rates are available with special configurations):
  - Up to 9,600 bps (Synchronous communication).
  - Up to 115,200 bps (Asynchronous communication).
- Electrical features of serial port (Only for modules WITH auxiliary power):
  - Power supplied by pin 1 of each serial port: 5 V.
  - Current limiting resistor for 100 mA.
  - External power: 24 V.

AB_SER – Serial Communications

Environmental Conditions

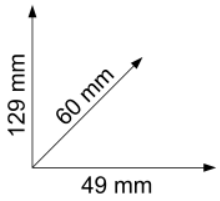
- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

TU – Termination Unit

Power supply: Internal bus.
Typical consumption: 0.2 W.
Weight: 215 g.



TU M570 0 0 0 0 0 y zz

Revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Features

- Termination resistor impedance of 120 Ω.
- Field connection:
  - 1 DB15 male connector (for expansion).
  - 1 DB9 male connector (for the auxiliary bus).

Functional Features

- It expands the bus to the next row of acquisition blocks in the ITB.
- It can also be used as termination of the data bus.

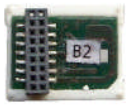
Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

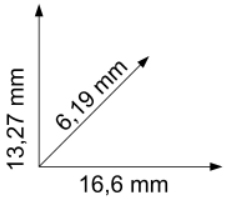
Standard Compliance

CE Mark	Compliance statement according to the EMC directive 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

BT – Basic Termination Unit



Power supply: Internal bus.
Typical consumption: 0.2 W.
Weight: 5 g.



BT M569 0 0 0 0 0 y zz

Actual revision:
(Revision code)

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Hardware Features

- Termination resistor impedance of 120 Ω.

Functional Features

- Data bus termination.

Environmental Conditions

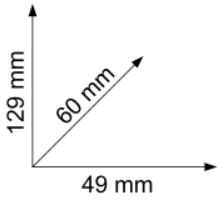
- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

XU – Expansion Unit

Power supply: 24/48 Vdc.
Typical consumption: 0.5 W.
Weight: 250 g.



XU M568 x 0 0 0 0 y zz

Power (Ax):
2: 24 VDC
3: 48 VDC

Coating:
0: Without coating
2: AVR80 coating (by ABchimie)

Revision:
(Revision code)

Hardware Features

- Galvanic isolation of 1 kVAC.
- Field connection:
  - 1 screw-terminals 2.5 mm^2 / 13 AWG (polarization input).
  - 1 DB15 male connector (for expansion).

Functional Features

- Expansion of the internal bus to other rows of acquisition blocks.
- A XU requires the usage of a TU in the previous row of acquisition blocks.
- It powers the rows of acquisition blocks.

Environmental Conditions

- Operating temperature range: From -40º to 70º C.
- Humidity limit of 95%.
- Coating: AVR80 coating (for more information, please consult www.abchimie.com).
- Protection level: IP 20.

Standard Compliance

CE Mark	According to the European Directive of Low Voltage 2006/95/CE and the Electromagnetic Compatibility Directive (EMC) 2004/108/CE.	
EMC	Electrostatic discharge immunity. Radiated, RF, EM field immunity. EM immunity, fast transient burst. EM immunity, surge. EM immunity, RF in common mode. EM immunity, magnetic field. EM emission, radiated emission. EM emission, conducted emission.	EN 61000-4-2, by contact ±6 kV (Level 3). EN 61000-4-3, between 80 and 2700 MHz (Level 3). EN 61000-4-4, power supply: ±2 kV, communication: ±1 kV (Level 3). EN 61000-4-5, power supply: ±2 kV symmetric and asymmetric (Level 3). EN 61000-4-6 (Level 3). EN 61000-4-8, 30 A/m at 50 Hz (Level 4). EN 55022, from 30 to 1000 MHz (Class A). EN 55022, from 0.15 to 30 MHz (Class A).
Electric Safety	General requirements (IEC 60950-1). Insulation and dielectric rigidity (IEC 60255-5).	Meets all the requirements indicated in the normative. Isolation >100 MΩ, 2 kVAC.
Environmental	Cold test (UNE-EN 60068-2-1). Dry heat test (IEC 60068-2-2). Bump test (IEC 60068-2-29). (Vertical axis) Random vibration test (UNE-EN 60068-2-64). (3 axes)	-40º C during 16 h (from cold start). +70º C during 16 h. Acceleration: 250 m/s^2. Pulse duration: 6 ms. Number of shocks: 100 shocks/axis/polarity. Range: From 10 Hz to 500 Hz. Test duration: 30 minutes.

Saitel Team

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