



SIMATIC S7, Analog input SM 336, 6 AI; 15 bit; fail-safe analog inputs for SIMATIC Safety, with HART support, up to Category 4 (EN 954-1)/ SIL3 (IEC61508)/PLE (ISO13849), 1x 20-pole

| General information | |
|---|-------------|
| Product function | |
| Protection function | |
| Engineering with | |
| Integrated drive control | |
| Operating mode | |
| Operator control and monitoring | |
| Process images | |
| User administration | |
| Alarms | |
| Recipes/user archives | |
| Display | |
| Line display | |
| Resolution (pixels) | |
| Control elements | |
| Input device | |
| Keyboard fonts | |
| Touch operation | |
| Connection type | |
| Special operator controls | |
| Frame size/design | |
| Ergonomics | |
| Supply voltage | |
| Rated value (DC) | 24 V |
| Reverse polarity protection | Yes |
| Line frequency | |
| Mains filter | |
| Mains buffering | |
| Load voltage L+ | |
| <ul style="list-style-type: none"> Rated value (DC) Reverse polarity protection | 24 V Yes |
| Load voltage 1L+ | |
| Load voltage 2L+ | |
| Load voltage L1 | |
| Auxiliary voltage 1L+, load voltage 2L+ | |
| Input voltage | |
| Input voltage acc. to VDE | |

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| Input voltage acc. to UL | |
| Line frequency | |
| Input current | |
| From power supply L+, typ. | 150 mA |
| from backplane bus 5 V DC, max. | 90 mA |
| Output current | |
| horizontal installation | |
| vertical installation | |
| Encoder supply | |
| Output current | |
| 5 V encoder supply | |
| 24 V encoder supply | |
| Additional 24 V encoder supply | |
| Power loss | |
| Power loss, typ. | 4.5 W |
| Memory | |
| Work memory | |
| Working memory for additional functions | |
| Battery | |
| Design | |
| CPU-blocks | |
| DB | |
| FB | |
| FC | |
| Counters, timers and their retentivity | |
| S7 counter | |
| IEC counter | |
| S7 times | |
| Data areas and their retentivity | |
| Flag | |
| Address area | |
| I/O address area | |
| of which distributed | |
| per integrated IO subsystem | |
| Process image | |
| Subprocess images | |
| Digital channels | |
| Analog channels | |
| Addressing volume | |
| Hardware configuration | |
| Formation of potential groups | |
| Module exchange | |
| Interface modules | |
| Number of DP masters | |
| Number of IO Controllers | |
| Number of operable FMs and CPs (recommended) | |
| Expansion modules | |
| Rack | |
| Submodules | |
| Selection of BaseUnit for connection variants | |
| PtP CM | |
| Time of day | |
| Clock | |
| Operating hours counter | |
| Time switching clocks | |
| Digital inputs | |

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| Number of simultaneously controllable inputs | |
| all mounting positions | |
| horizontal installation | |
| Digital input functions, parameterizable | |
| Input voltage | |
| Input current | |
| for 10 k switched contact | |
| Internal preparation time | |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| for interrupt inputs | |
| Encoder connection | |
| Connection method | |
| Digital outputs | |
| Digital output functions, parameterizable | |
| Control supply voltage | |
| Switching capacity of the outputs | |
| Load resistance range | |
| Trend key points E | |
| Output voltage | |
| Output current | |
| Output delay with resistive load | |
| Parallel switching of two outputs | |
| Switching frequency | |
| Total current of the outputs | |
| horizontal installation | |
| Total current of the outputs (per group) | |
| all mounting positions | |
| horizontal installation | |
| vertical installation | |
| Total current of the outputs (per module) | |
| all mounting positions | |
| horizontal installation | |
| Pulse output (passive) | |
| Frequency output | |
| Relay outputs | |
| Integrated high-speed cams | |
| Analog inputs | |
| Number of analog inputs | 6 |
| permissible input current for current input (destruction limit), max. | 40 mA |
| Input ranges | |
| • Voltage | No |
| • Current | Yes |
| • Thermocouple | No |
| • Resistance thermometer | No |
| • Resistance | No |
| Measuring range | |
| Input ranges (rated values), currents | |
| • 0 to 20 mA | Yes |
| — Input resistance (0 to 20 mA) | 150 Ω; typ. 150 ohms max. 175 ohms |
| • 4 mA to 20 mA | Yes |
| — Input resistance (4 mA to 20 mA) | 150 Ω; typ. 150 ohms max. 175 ohms |
| Input ranges (rated values), thermocouples | |
| Input ranges (rated values), resistance thermometer | |
| Input ranges (rated values), resistors | |
| Input ranges (rated values), strain gauges (full bridges) | |
| Thermocouple (TC) | |

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| Characteristic linearization | |
| Connection method | |
| Cable length | |
| • shielded, max. | 1 000 m |
| Analog outputs | |
| Output ranges, voltage | |
| Output ranges, current | |
| Connection of actuators | |
| Load impedance (in rated range of output) | |
| Analog value generation for the inputs | |
| Integration and conversion time/resolution per channel | |
| • Resolution with overrange (bit including sign), max. | 16 bit; 15 bit + sign |
| • Integration time (ms) | 20 ms @ 50 Hz, 16.7 ms @ 60 Hz |
| • Interference voltage suppression for interference frequency f1 in Hz | f=n x (f1 ±0.5 %) |
| Analog value generation for the outputs | |
| Integration and conversion time/resolution per channel | |
| Encoder | |
| Connection of signal encoders | |
| • for current measurement as 2-wire transducer | Yes |
| • for current measurement as 4-wire transducer | Yes |
| Connectable encoders | |
| Incremental encoder | |
| Encoder signals, incremental encoder (symmetrical) | |
| Encoder signals, incremental encoder (asymmetrical) | |
| Encoder signals, absolute encoder (SSI) | |
| Encoder signals, IEPE | |
| Drive axis | |
| EC motor | |
| Errors/accuracies | |
| Operational error limit in overall temperature range | |
| • Current, relative to input range, (+/-) | 0.2 % |
| Basic error limit (operational limit at 25 °C) | |
| • Current, relative to input range, (+/-) | 0.1 % |
| Power electronics | |
| Control of heating elements | |
| Load connection type | |
| Setpoint input | |
| Heating power | |
| Interfaces | |
| Video interfaces | |
| Touch interfaces | |
| MPI | |
| PROFIBUS DP | |
| PROFIBUS PA | |
| Supports protocol for PROFINET IO | |
| PROFINET functions | |
| Industrial Ethernet | |
| Point-to-point connection | |
| Integrated protocol driver | |
| Telegram length, max. | |
| Transmission rate, 20 mA (TTY) | |
| Transmission rate, RS 422/485 | |
| Transmission speed, RS 232 | |
| Signals | |
| ET-Connection | |
| EtherNet/IP | |

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| AS-Interface |
| WLAN |
| 1. Interface |
| Interface types |
| Protocols |
| MPI |
| PROFIBUS DP master |
| Services |
| PROFIBUS DP slave |
| PROFINET IO Controller |
| Services |
| Update time for IRT |
| PROFINET IO Device |
| Services |
| PROFINET CBA |
| Open IE communication |
| CAN |
| BACnet |
| 2. Interface |
| Interface types |
| Protocols |
| PROFIBUS DP master |
| Services |
| PROFIBUS DP slave |
| PROFINET IO Controller |
| Services |
| Update time for IRT |
| PROFINET IO Device |
| Services |
| PROFINET CBA |
| 3. Interface |
| Interface types |
| Protocols |
| PROFIBUS DP master |
| Services |
| PROFIBUS DP slave |
| PROFINET IO Controller |
| PROFINET IO Device |
| Services |
| PROFINET CBA |
| 4. Interface |
| Interface types |
| Protocols |
| PROFIBUS DP master |
| PROFINET IO Controller |
| Interface types |
| RJ 45 (Ethernet) |
| RS 232 |
| RS 485 |
| RS 422 |
| USB port |
| Protocols |
| Protocols (USB) |
| Protocols (Ethernet) |
| WEB characteristics |
| Protocols (terminal link) |
| Number of connections |

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| PROFINET IO Device | |
| Redundancy mode | |
| SIMATIC communication | |
| EtherNet/IP | |
| Services | |
| Updating times | |
| Redundancy mode | |
| Open IE communication | |
| Web server | |
| PROFIBUS DP | |
| PROFdrive | |
| DALI | |
| Integrated protocols | |
| Freeport | |
| 3964 (R) | |
| OPC UA | |
| Communication functions | |
| Global data communication | |
| S7 basic communication | |
| S7 communication | |
| LOGO! communication | |
| S5 compatible communication | |
| Standard communication (FMS) | |
| PROFINET CBA (at set setpoint communication load) | |
| Remote interconnections with acyclic transmission | |
| Remote interconnections with cyclic transmission | |
| iPAR server | |
| Number of connections | |
| Test commissioning functions | |
| Status/control | |
| Forcing | |
| Diagnostic buffer | |
| Interrupts/diagnostics/status information | |
| Diagnostics function | Yes |
| Alarms | |
| • Diagnostic alarm | Yes |
| Diagnoses | |
| • Diagnostic information readable | Yes |
| Diagnostics indication LED | |
| • Fail-safe operation | Yes |
| • Group error SF (red) | Yes |
| • Encoder supply Vs (green) | No |
| Integrated Functions | |
| Monitoring functions | |
| Safety monitoring functions | |
| Counting functions | |
| Load cell | |
| Position detection | |
| Control technology | |
| Step-by-step controllers | |
| Pulse generator | |
| Measuring functions | |
| Operating mode for measured value acquisition | |
| Measuring range | |
| Accuracy | |
| Measuring inputs for voltage | |
| Measuring inputs for current | |
| Measuring inputs for current (Rog. or I/U converter) | |

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| Error limits | |
| Counter | |
| Counting mode | |
| External gate counters | |
| Counter input 5 V | |
| Counter input 24 V | |
| Drive interface | |
| Signal Input | |
| Potential separation | |
| Potential separation digital inputs | |
| Potential separation digital outputs | |
| Potential separation analog inputs | |
| <ul style="list-style-type: none"> • between the channels | Yes |
| <ul style="list-style-type: none"> • between the channels and backplane bus | Yes |
| <ul style="list-style-type: none"> • between the channels and the power supply of the electronics | Yes |
| Potential separation analog outputs | |
| Potential separation channels | |
| Potential separation valve outputs | |
| Potential separation counter | |
| Potential separation controller | |
| Isolation | |
| Isolation tested with | 370V for 1 min |
| EMC | |
| Interference immunity against discharge of static electricity | |
| Interference immunity against high-frequency electromagnetic fields | |
| Interference immunity to cable-borne interference | |
| Interference immunity against voltage surge | |
| Interference immunity against conducted variable disturbance induced by high-frequency fields | |
| Interference immunity to magnetic fields | |
| Emission of radio interference acc. to EN 55 011 | |
| Emission of radio interference acc. to EN 55 022 | |
| Standards, approvals, certificates | |
| Highest safety class achievable in safety mode | |
| <ul style="list-style-type: none"> • Performance level according to ISO 13849-1 | e |
| <ul style="list-style-type: none"> • SIL acc. to IEC 61508 | SIL 3 |
| Highest safety class achievable for safety-related tripping of standard modules | |
| Highest safety class achievable for deactivated dark test | |
| Use in hazardous areas | |
| Ambient conditions | |
| Free fall | |
| Ambient temperature during operation | |
| Operation (vertical installation) | |
| Air pressure acc. to IEC 60068-2-13 | |
| Vibrations | |
| Shock testing | |
| Resistance | |
| Coolants and lubricants | |
| Use on land craft, rail vehicles and special-purpose vehicles | |
| Fire resistance | |
| Pollutant concentrations | |
| Hardware requirement | |
| Processor | |
| Graphic | |
| Operating systems | |
| pre-installed operating system | |
| Runs under operating system | |

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| Software | |
| Preinstalled | |
| Software functions | |
| Multi-user system | |
| Runtime software | |
| Runtime | |
| Block | |
| Adjustable parameters | |
| Configuration | |
| Configuration | |
| Configuration software | |
| Script languages (Runtime) | |
| Programming | |
| Programming language | |
| Configuration examples | |
| Software libraries | |
| Know-how protection | |
| Access protection | |
| Languages | |
| Online languages | |
| Functionality under WinCC (TIA Portal) | |
| Multiproject | |
| Message system | |
| Recipe management | |
| Variables | |
| Images | |
| Image objects | |
| Complex image objects | |
| Attributes for dynamic objects | |
| Lists | |
| Archiving | |
| Filters | |
| Security | |
| Data carrier support | |
| Logging through printer | |
| Character sets | |
| Transfer (upload/download) | |
| Process coupling | |
| Functions | |
| Functionality under WinCC Unified | |
| Parameter set management (recipes) | |
| Image objects | |
| Connection method | |
| required front connector | 20-pin |
| ET-Connection | |
| Terminals | |
| Connection I/O signals | |
| Conductor cross-section in mm ² | |
| Conductor cross-section acc. to AWG | |
| Dimensions | |
| Width | 40 mm |
| Height | 125 mm |
| Depth | 120 mm |
| Weights | |
| Weight, approx. | 350 g |
| Other | |
| Data for selecting a voltage transformer | |

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