SIEMENS

## Data sheet 6AG1688-3EH47-2AX0

SIPLUS HMI KP32F PN -20…+55°C with Conformal Coating based on 6AV3688-3EH47-0AX0 . Key Panel, 32 short-stroke keys with multi-colored LEDs, PROFINET interfaces with PROFIsafe, 16 DI+16 DI/DO, 4 safety DI pins, 24 V DC can be looped through parameterizable as of STEP 7 V5.5

Figure similar

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| **General information** | |
| Product type designation | KP32F PN |
| **Control elements** | |
| With parameterizable keys | Yes |
| Keyboard fonts | |
| ● Membrane keyboard | |
| — user-definable label membrane keys | Yes |
| ● Short-stroke keys | |
| — Number of short-stroke keys | 32 |
| Expansions for operator control of the process | |
| ● DP direct LEDs (LEDs as S7 output I/O) | 8; Adjustable brightness |
| ● Number of color modes for LED | 5; red, green, blue, yellow, white |
| ● Direct keys (keys as S7 input I/O) | 32 |
| **Installation type/mounting** | |
| Mounting type | Mounting clip |
| Mounting position | vertical |
| Rack mounting | No |
| Front mounting | Yes |
| Rail mounting | No |
| Wall mounting/direct mounting | No |
| Mounting in portrait format possible | Yes |
| Mounting in landscape format possible | Yes |
| maximum permissible angle of inclination without external ventilation | 30°; To the front/rear |
| Number of slots for command devices and signaling units | 0 |
| **Supply voltage** | |
| Type of supply voltage | DC |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 20.4 V |
| permissible range, upper limit (DC) | 28.8 V |
| **Input current** | |
| Current consumption (rated value) | 1 A |
| **Type of output** | |
| LED colors | |
| ● red | Yes |
| ● yellow | Yes |

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| ● green | Yes |
| ● white | Yes |
| ● blue | Yes |
| **Digital inputs** | |
| Number of digital inputs | 32; Total inputs and outputs max. 32 and 2x SIL 2 or 4x SIL 3 |
| Input voltage | |
| ● Rated value (DC) | 24 V |
| **Digital outputs** | |
| Number of digital outputs | 16; Max. 32 inputs and outputs (total) |
| Short-circuit protection | Yes |
| Switching capacity of the outputs | |
| ● with resistive load, max. | 100 mA |
| Output voltage | |
| ● Rated value (DC) | 24 V |
| Total current of the outputs | |
| ● Current per channel, max. | 100 mA |
| ● Current per group, max. | 800 mA |
| **Interfaces** | |
| Number of industrial Ethernet interfaces | 2; For the construction of lines and rings without external switch |
| Number of PROFINET interfaces | 2; Incl. switch |
| Industrial Ethernet | |
| ● Number of ports of the integrated switch | 2; Per port |
| **Protocols** | |
| PROFINET | Yes; incl. shared device, 3rd party PLC |
| Supports protocol for PROFINET IO | Yes |
| PROFINET CBA | No |
| IRT | Yes |
| PROFIsafe | Yes; 2x SIL 3 (two-channel) or 4x SIL 2 (single-channel) emergency stop sensors |
| PROFIBUS | No |
| MPI | No |
| AS-Interface | No |
| EIB/KNX | No |
| Protocols (Ethernet) | |
| ● TCP/IP | No |
| Redundancy mode | |
| Media redundancy | |
| — MRP | Yes |
| Further protocols | |
| ● AS-Interface Safety at Work | No |
| ● CAN | No |
| ● Data-Highway | No |
| ● DeviceNet | No |
| ● DeviceNet Safety | No |
| ● EtherNet/IP | No |
| ● Foundation Fieldbus | No |
| ● INTERBUS | No |
| ● INTERBUS-Safety | No |
| ● Local Operating Network | No |
| ● MODBUS | No |
| ● SafetyBUS p | No |
| ● SERCOS | No |
| ● SUCOnet | No |
| ● other bus systems | No |
| **Test commissioning functions** | |
| Illuminant test | Yes; During switch on |
| Key and signal lamp test | Yes; automatically when switching on |
| **EMC** | |

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| Emission of radio interference acc. to EN 55 011 | |
| ● Limit class A, for use in industrial areas | Yes; Group 1, measured at a distance of 10 m |
| ● Limit class B, for use in residential areas | No |
| **Degree and class of protection** | |
| NEMA (front) | |
| ● Enclosure Type 4 at the front | No |
| ● Enclosure Type 4x at the front | Yes; Incl. NEMA12 |
| **Standards, approvals, certificates** | |
| CE mark | Yes |
| Suitable for safety functions | Yes |
| Marine approval | |
| ● Germanischer Lloyd (GL) | No |
| ● American Bureau of Shipping (ABS) | No |
| ● Bureau Veritas (BV) | No |
| ● Det Norske Veritas (DNV) | No |
| ● Lloyds Register of Shipping (LRS) | No |
| ● Nippon Kaiji Kyokai (Class NK) | No |
| ● Polski Rejestr Statkow (PRS) | No |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| ● min. | -20 °C; = Tmin (incl. condensation/frost) |
| ● max. | 55 °C; = Tmax |
| ● Operation (vertical installation) | |
| — For vertical installation, min. | -20 °C |
| — For vertical installation, max. | 55 °C |
| ● Operation (max. tilt angle) | |
| — At maximum tilt angle, min. | -20 °C |
| — At maximum tilt angle, min. | 45 °C |
| ● Operation (vertical installation, portrait format) | |
| — For vertical installation, min. | -20 °C |
| — For vertical installation, max. | 55 °C |
| ● Operation (max. tilt angle, portrait format) | |
| — At maximum tilt angle, min. | -20 °C |
| — At maximum tilt angle, min. | 45 °C |
| Ambient temperature during storage/transportation | |
| ● min. | -20 °C |
| ● max. | 60 °C |
| Altitude during operation relating to sea level | |
| ● Installation altitude above sea level, max. | 2 000 m |
| ● Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) |
| Relative humidity | |
| ● With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation |
| Resistance | |
| Coolants and lubricants | |
| — Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air |
| Use in stationary industrial systems | |
| — to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request |
| — to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * |
| Use on ships/at sea | |
| — to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna) |
| — to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |

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|---|---|
| — to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * |
| Remark | |
| — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! |
| Conformal coating | |
| ● Coatings for printed circuit board assemblies acc. to EN 61086 | Yes; Class 2 for high reliability |
| ● Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection |
| ● Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life |
| ● Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A |
| **Configuration** | |
| Configuration software | |
| ● STEP 7 Basic (TIA Portal) | Yes |
| ● STEP 7 Professional (TIA Portal) | Yes |
| **Functionality under WinCC (TIA Portal)** | |
| Process coupling | |
| ● S7-1200 | Yes; with ET 200pro CPU and ET 200S CPU |
| ● S7-1500 | Yes |
| ● S7-200 | No |
| ● S7-300/400 | Yes; with F-CPU: STEP 7 V11 SP1 or higher and Safety V11 (or higher), without F-CPU STEP 7 or SIMATIC STEP 7 Basic V11 (or higher) |
| ● LOGO! | No |
| ● WinAC | Yes |
| ● SINUMERIK | No |
| ● SIMOTION | No |
| ● Allen Bradley (EtherNet/IP) | No |
| ● Allen Bradley (DF1) | No |
| ● Mitsubishi (MC TCP/IP) | No |
| ● Mitsubishi (FX) | No |
| ● OMRON (FINS TCP) | No |
| ● OMRON (LINK/Multilink) | No |
| ● Modicon (Modbus TCP/IP) | No |
| ● Modicon (Modbus) | No |
| **Mechanics/material** | |
| Service life | |
| ● Short-stroke keys (in switching cycles) | 1 500 000 |
| ● LEDs (ON period) | 100 % |
| **Dimensions** | |
| Width of the housing front | 295 mm |
| Height of housing front | 155 mm |
| Mounting cutout, width | 277 mm; Max. thickness of mounting plate 2 - 6 mm |
| Mounting cutout, height | 137 mm |
| Overall depth | 69 mm; Incl. angled SIMATIC Ethernet connector |
| **Weights** | |
| Weight without packaging | 1 220 g |

**last modified:** 12/18/2020