SIEMENS

Data sheet 6AG1688-3EH47-2AX0

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

Figure similar

General information	
Product type designation	KP32F PN
Control elements	
With parameterizable keys	Yes
Keyboard fonts	
● Membrane keyboard	
— user-definable label membrane keys	Yes
● Function keys	
— Number of function keys	32
● 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; 24 V looped through at connector, no interruption on pulling
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
● 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; Non-isolated
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	
● Industrial Ethernet status LED	2; Per port
● 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
EtherNet/IP	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
● 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	
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	
IP (at the front)	IP65
IP (rear)	IP20
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, max.	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, max.	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); *
— 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 / header	
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	
Enclosure material (front)	
● Plastic	No
● Aluminum	Yes
● Stainless steel	No
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: 10/9/2023