# ПРИЛОЖЕНИЕ №8

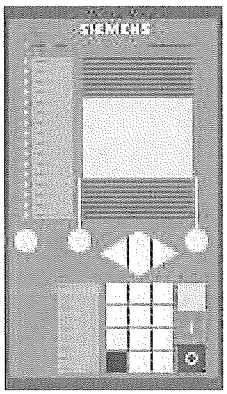
# SIEMENS
# SIPROTEC 5
# ЗАЩИТА
# 7SJ82
# ТЕХНИЧЕСКИ ДАННИ

SIEMENS

SIPROTEC 5
Configuration
May 18, 2017 11:19 AM

Device: 7SJ82 Overcurrent protection

Product code
Short: P1J42796
Long: 7SJ82-DAAA-AA0-0AAAA0-AA0411-12111A-BAA000-000AB0-HA1BD4-JZ0




| | |
|---|---|
| Housing width: | 1/3 x 19" |
| Housing type: | Flush mounting |
| Binary inputs: | 11 |
| Binary outputs: | 9 Standardrelays |
| Current transformers: | 4 for protection, 0 for measurement and sensitive ground-current detection |
| Voltage transformers: | 0 |
| Measuring-transducer inputs: | 0 (20 mA or 10 V, fast)<br>0 (20 mA, standard) |
| CPU: | CP100 |
| Modules in 19" row 1: | IO101 , PS101 |
| Modules in 19" row 2: | |
| LEDs/Push-buttons: | 16 LEDs |
| Operation Panel: | Integrated |
| Key switch: | Without |
| Display type: | Small display |
| Front Design: | Standard |
| Power Supply: | DC 110 V-250 V, AC 100 V-230 V |

Communication/Plug-in modules:

| | |
|---|---|
| Communications encryption: | Normal |
| Integrated Ethernet port J: | for DIGSI 5 |
| Plug-in module position E: | USART-AB-1EL: 1 x electric serial RS485, RJ45, applicable for serial protocols, e.g. IEC60870-5-103, DNP3.0 etc. |
| Plug-in module position F: | Port is available but not assembled |

Functions:

| | |
|---|---|
| Function points class: | Base |

*Note on function-points class*

The function-points class results from the sum of the function points of the selected functions. You can apply these functions as selected. The device allows also each other selection of functions as long as the sum of the required function points is within the selected function-points class. With the maximum function-points class of 1400 it is possible to activate all the functions in the device. The function-points exceeding 1400 are free of charge. In the engineering phase DIGSI 5 checks that the selected configuration is suitable (capable of running in the device) before loading it to the device.

Miscellaneous:

| | |
|---|---|
| Warranty: | 5 years |
| Firmware: | Current version |

SIEMENS

SIPROTEC 5
Configuration
May 18, 2017 11:19 AM

Functional scope 7SJ82 Overcurrent protection:

| ANSI | Function | Abbr. | Always included | Add selected Qty. | x | Value | = | Points | Result Qty. |
|---|---|---|---|---|---|---|---|---|---|
| | Protection functions for 3-pole tripping | 3-pole | ✔ | | | | | | ✔ |
| 24 | Overexcitation protection | V/f | | | x | 25 | = | | |
| 25 | Synchrocheck, synchronizing function | Sync | | | x | 50 | = | | |
| 27 | Undervoltage protection: "3-phase" or "pos.seq. V1" or "universal Vx" | V< | | | x | 5 | = | | |
| | Undervoltage-controlled reactive power protection | Q>/V< | | | x | 15 | = | | |
| 32, 37 | Power protection active/reactive power | P<>, Q<> | | | x | 10 | = | | |
| 32R | Reverse power protection | - P< | | | x | 5 | = | | |
| 37 | Undercurrent | I< | ✔ | | | | | | ✔ |
| 38 | Temperature Supervision | > | ✔ | | | | | | ✔ |
| 46 | Negative sequence overcurrent protection | I2> | ✔ | | | | | | ✔ |
| 46 | Unbalanced-load protection (thermal) | I2² t> | ✔ | | | | | | ✔ |
| 46 | Negative sequence overcurrent protection with direction | I2>, (V2,I2) | | | x | 10 | = | | |
| 47 | Overvoltage protection, negative-sequence system | V2> | | | x | 5 | = | | |
| 49 | Thermal overload protection | , I²t | ✔ | | | | | | ✔ |
| 49 | Thermal overload protection, user-defined characteristic | , I²t | ✔ | | | | | | ✔ |
| 49 | Thermal overload protection for RLC filter elements of a capacitor bank | , I²t | | | x | 10 | = | | |
| 50/51 TD | Overcurrent protection, phases | I> | 2x | | x | 30 | = | | 2x |
| 50N/ 51N TD | Overcurrent protection, ground | IN> | ✔ | | | | | | ✔ |
| 50HS | High speed instantaneous overcurrent protection | I>>> | ✔ | | | | | | ✔ |
| | Instantaneous tripping at switch onto fault | SOTF | ✔ | | | | | | ✔ |
| 50N/ 51N TD | Overcurrent protection, 1-phase | IN> | ✔ | | | | | | ✔ |

SIEMENS

SIPROTEC 5
Configuration
May 18, 2017 11:19 AM

Functional scope 7SJ82 Overcurrent protection:

| ANSI | Function | Abbr. | Always included | Add selected Qty. | x | Value | = | Points | Result Qty. |
|---|---|---|---|---|---|---|---|---|---|
| 50Ns/ 51Ns | Sensitive ground-current protection for systems with resonant or isolated neutral | INs> | ✔ | | | | | | ✔ |
| | Intermittent ground fault protection | Iie> | | | x | 20 | = | | |
| 50/51 TD | Overcurrent protection for RLC filter elements of a capacitor bank | I> | | | x | 10 | = | | |
| 50BF | Circuit-breaker failure protection, 3-pole | CBFP | | | x | 5 | = | | |
| 50RS | Circuit-breaker restrike protection | CBRS | | | x | 20 | = | | |
| 51V | Voltage dependent overcurrent protection | t=f(I,V) | | | x | 10 | = | | |
| | Peak overvoltage protection, 3-phase, for capacitors | V> cap. | | | x | 30 | = | | |
| 59, 59N | Overvoltage protection: "3-phase" or "zero seq. V0" or "pos.seq. V1" or "universal Vx" | V> | | | x | 5 | = | | |
| 60C | Current-unbalance protection for capacitor banks | Iunbal> | | | x | 50 | = | | |
| 67 | Directional overcurrent protection, phases | I>, (V,I) | | | x | 15 | = | | |
| 67N | Directional overcurrent protection, ground | IN>, (V,I) | | | x | 15 | = | | |
| 67Ns | Dir. sensitive ground-fault detection for systems with resonant or isolated neutral incl. a) 3I0>, b) V0>, c) Cos-/ SinPhi, d) Transient fct., e) Phi(V,I), f) admittance | | | | x | 30 | = | | |
| | Directional intermittent ground fault protection | Iie dir> | | | x | 20 | = | | |
| 74TC | Trip circuit supervision | TCS | ✔ | | | | | | ✔ |
| 79 | Automatic reclosing, 3-pole | AR | | | x | 35 | = | | |
| 81 | Frequency protection: "f>" or "f<" or "df/ dt" | f>,<; df/ dt>,< | | | x | 5 | = | | |
| 86 | Lockout | | ✔ | | | | | | ✔ |
| 87N T | Restricted ground-fault protection | IN | | | x | 15 | = | | |
| 87C | Differential protection, capacitor bank | I | | | x | 95 | = | | |

SIEMENS

SIPROTEC 5
Configuration
May 18, 2017 11:19 AM

Functional scope 7SJ82 Overcurrent protection:

| ANSI | Function | Abbr. | Always included | Add selected Qty. | x | Value | = | Points | Result Qty. |
|---|---|---|---|---|---|---|---|---|---|
| 90V | Automatic voltage control for 2 winding transformer | | | | x | 150 | = | | |
| FL | Fault locator, single-ended measurement | FL-one | | | x | 25 | = | | |
| PMU | Synchrophasor measurement (1 PMU can be used for max. 8 voltages and 8 currents) | PMU | | | x | 40 | = | | |
| AFD | Arc-protection (only with plug-in module ARC-CD-3FO) | | ✔ | | | | | | ✔ |
| | Measured values, standard | | ✔ | | | | | | ✔ |
| | Measured values, extended: Min, Max, Avg | | | | x | 12 | = | | |
| | Switching statistic counters | | ✔ | | | | | | ✔ |
| | Circuit breaker wear monitoring | Ix, $I^2t$, 2P | | | x | 10 | = | | |
| | CFC (Standard, Control) | | ✔ | | | | | | ✔ |
| | CFC arithmetic | | | | x | 40 | = | | |
| | Switching sequences function | | ✔ | | | | | | ✔ |
| | Inrush current detection | | ✔ | | | | | | ✔ |
| | External trip initiation | | ✔ | | | | | | ✔ |
| | Control | | ✔ | | | | | | ✔ |
| | Fault recording of analog and binary signals | | ✔ | | | | | | ✔ |
| | Monitoring and supervision | | ✔ | | | | | | ✔ |
| | Protection interface, serial | | ✔ | | | | | | ✔ |
| | Circuit Breaker | | 4x | | x | 3 | = | | 4x |
| | Disconnector | | 4x | | x | 3 | = | | 4x |
| | | | | | | | Sum: | 0 | |