SIEMENS

Data sheet 5SD7424-1



Surge arrester Type 2 Requirement class C, UC 350V Pluggable protective modules 4-pole, 3+1 circuit for TN-S and TT systems with FRN display, narrow type of construction

General data	
standard	IEC 61643-11: 2011, EN 61643-11: 2012
product designation	Surge protection device
SPD classification / acc. to EN 61643-11	
 Test Class I, Type 1 	No
 Test Class II, Type 2 	Yes
Test Class III, Type 3	No
number of SPD ports	1
Product version	Surge arrester
design of pole	3+N/PE
designation of the protective paths	L-N, N-PE
Accessories	3 x 5SD7428-1 + 1 x 5SD7428-0
fastening method	DIN rail NS 35
material / of the enclosure	PBT
size of surge arrester	2,7 MW
Degree of pollution	2
overvoltage category / acc. to IEC 61010-1	III
protection class IP / at connection all terminals	IP20
shock acceleration	30 gn
vibrational acceleration / at 5 Hz 500 Hz / limited to 2,5 h / per axis	5 gn
Ambient temperature / during operation / minimum permissible ambient temperature / during operation / maximum permissible	-40 °C 80 °C
ambient temperature / during storage and transport	-40 °C 80 °C
relative humidity / during operation	5 % 95 %
installation altitude / at height above sea level / maximum	2 000 m
Width	49.2 mm
Height	98 mm
depth	71.5 mm
net weight	394 g
Electrical data	
type of distribution system	TT, TN-S
operating voltage	240 / 415 V AC
operating voltage	230 V
operating frequency	50/60 Hz
continuous operating voltage	
• maximum	350 V

e between L and (PE)N load current protective conductor current fl. (2020 js) 1 phase / at (8/20 js) 2 phase / at (8/20 j	between N and PE	264 V
Joad current		
protective conductor current idisharge current at (κ20) μs 1 phase / at (κ20) μs Clow current extinguishing capability • between N and PE 100 A (264 V a.c.) short-circuit rating (SCCR) / at 264 V protection level • maximum 1.5 kV • between N and L • between N and L • between N and I 1.5 kV - at rated value of discharge current / maximum — at 10 kA / maximum — at 15 kA / maximum — at 2 kA / maximum — at 2 kA / maximum — at 2 kA / maximum — at 10 kA / maximum — at 4 kA / maximum — at 8 kA / maximum — at 8 kA / maximum — at 4 kA / maximum — at 8		
discharge current • at (820) µs • 1 phase / at (820) µs • 1 phase / at (820) µs • 1 phase / at (820) µs • 20 kA • 1 phase / at (820) µs • 20 kA • 1 phase / at (820) µs • 20 kA • 1 phase / at (820) µs • 25 kA protection lavel • maximum • between N and PE • 100 A (254 V a.c.) • maximum • between N and L • between PE and N and/or L • 1.5 kV residual voltage • between L and (PE)N • at rated value of discharge current / maximum — at 10 kA / maximum — at 10 kA / maximum — at 2 kA / maximum • between N and PE • at rated value of discharge current / maximum • at 2 kV • at 4 kA / maximum • between N and PE • at rated value of discharge current / maximum • at 2 kA / maximum • between N and PE • at rated value of discharge current / maximum • at 2 kA / maximum • between N and PE • at rated value of discharge current / maximum • at 2 kA / maximum • at 8 kA / maximum • at 9 kKV • at 10 kA / maximum • at 9 kKV • at 10 kA / maximum • at 10 kA / maximu		
# at (8/20) µs	•	Ι μΑ (255 V ΑΟ)
1 phase / at (8/20) µs	-	20 kV
follow current extinguishing capability • between N and PE • maximum • between N and L • between N and L • between N and L • between N and N and/or L • between N and N and/or L • tisk V • between PE and N and/or L • tisk V • between E and V and/or L • tisk V • between L and (PE)N — at rated value of discharge current / maximum — at 10 kA / maximum — at 10 kA / maximum — at 2 kA / maximum — at 2 kA / maximum • between N and PE — at rated value of discharge current / maximum • between N and PE — at rated value of discharge current / maximum • between N and PE — at rated value of discharge current / maximum • between N and PE — at 10 kA / maximum — at 5 kA / maximum — at 5 kA / maximum — at 5 kA / maximum — at 2 kA / maximum — between N and PE • response time / between L and (PE)N • between N and PE • response time / between		
* between N and PE **short-circuit rating (SCCR) / at 264 V **protection level **maximum **between N and L **between P and N and/or L **between P and N and/or L **between P and N and/or L **showen L and (PE)N		40 KA
short-circuit rating (SCCR) / at 284 V protection level		100 A (264 V a.c.)
Protection level • maximum		
• maximum • between N and L • between PE and N and/or L residual voltage • between L and (PE)N — at rated value of discharge current / maximum — at 10 kA / maximum — at 5 kA / maximum — at 2 kA / maximum — at 10 kA / maximum — o.5 kV — at 5 kA / maximum — o.5 kV — at 5 kA / maximum — o.5 kV — at 4 kA / maximum — o.5 kV — at 5 kA / maximum — o.5 kV — at 2 kA / maximum — o.5 kV — at 2 kA / maximum — o.5 kV — at 5 kA / maximum — o.5 kV — at 5 kA / maximum — o.5 kV — o.5		20101
between N and L between L and (PE)N	·	1.5 kV
between PE and N and/or L residual voltage • between L and (PE)N — at rated value of discharge current / maximum — at 10 kA / maximum — at 15 kA / maximum — 12 kV — at 4 kA / maximum — 11 kV —— at 2 kA / maximum — at 2 kA / maximum — at 2 kA / maximum — at 10 kA / maximum — between N and PE —— at rated value of discharge current / maximum — between N and PE —— at rated value of discharge current / maximum — at 10 kA / maximum — 0.5 kV —— at 4 kA / maximum — 5 kV —— at 2 kA / maximum —— at 3 kA / maximum —— at 3 kA / maximum —— at 5 kA / m		
residual voltage • between L and (PE)N — at rated value of discharge current / maximum — at 10 kA / maximum — at 5 kA / maximum — at 2 kA / maximum — at 10 kA / maximum — at 5 kA / maximum — at 2 kA / maximum — at 5 kA / maximum — 5 kV — at 2 kA / maximum — 5 kV — at 2 kA / maximum — 5 kV — at 2 kA / maximum — 6 kA / maximum — 10 kA / maximum — 8 kA / maximum — 10 kV		
between L and (PE)N		1.0 KV
- at rated value of discharge current / maximum - at 10 kA / maximum - at 5 kA / maximum - at 2 kA / maximum - at rated value of discharge current / maximum - at 10 kA / maximum - at 10 kA / maximum - at 5 kA / maximum - at 2 kA / maximum - at 3 kA C (35 kV - at 2 kA / maximum - at 3 kA C (36 kV - at 2 kA / maximum - at 3 kA C (36 kV - at 3 kV - at 3 kA C (36 kV - at 3 kV - at 4 kA C - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 3 kV - at 3 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 3 kV - at 3 kV - at 5 kA C (36 kV - at 3 kV - at 5 kV - at 3 kV - at 5 kV - at 6 kV - at 5 kV - at 6	_	
- at 10 kA / maximum	• •	1.5 kV
- at 5 kA / maximum 1.2 kV 1.4 kV 1.2 kV 1.4 kV 1.5	_	
- at 4 kA / maximum - at 2 kA / maximum - between N and PE - at rated value of discharge current / maximum - at 10 kA / maximum - at 10 kA / maximum - at 5 kA / maximum - at 2 kA / maximum - at 3 kA C (gG) - at 3 kA C (gG) - at DC - at DC - operational current / of the remote signaling contacts - at DC - operational current / of the remote signaling contacts		
■ at 2 kA / maximum ■ between N and PE — at rated value of discharge current / maximum — at 10 kA / maximum — at 5 kA / maximum — at 5 kA / maximum — at 2 kA / maximum — at 5 kA / at 6 kV / at (1.2/50) µs • between N and PE — 10.5 kV • response time / between N and PE 10.0 ns • adjustable response fatine / between N and PE 10.0 ns • adjustable response fatine / between N and PE 10.0 ns • adjustable response fatine / between N and PE 10.0 ns • adjustable response fatine / between N and PE 10.0 ns • at AC (GG) Connections / Torminals type of electrical connection • for fingly stranded conductor • for fingly stran		
between N and PE - at rated value of discharge current / maximum - at 10 kA / maximum 0.5 kV - at 5 kA / maximum 0.5 kV - at 4 kA / maximum 0.5 kV - at 2 kA / maximum 0.5 kV response value of the surge voltage / at 6 kV / at (1.2/50) ps • between N and PE 1.5 kV • response time / between L and (PE)N 25 ns • response time / between N and PE 100 ns adjustable response factor / of tripping current fuse protection type / for T-connector 1.6 fuse protection type / for T-connector 215 AAC (gG) Connections/ Terminals type of electrical connection stripped length tightening torque 4.3 4.7 stripped length connectable conductor cross-section • for finely stranded conductor • for frigid conductor • for figid conductor • for figid conductor • for figid stranded conductor • for figid stranded conductor cross section design of the thread / of the connection screw signal design put the remote signaling switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts		
- at rated value of discharge current / maximum - at 10 kA / maximum - at 5 kA / maximum - at 4 kA / maximum - at 2 kA / maximum - at 3 kV / at (1.2/50) - at 2 kA / maximum - at 2 kA / (ac) - at 2 kV / at (1.2/50) - at 2 kV / at (1.2/50)		1 IVV
- at 10 kA / maximum		0.5 kV
- at 5 kA / maximum - at 4 kA / maximum - at 2 kA / maximum - at 3 kV / at (1.2/50) -		
response value of the surge voltage / at 6 kV / at (1.2/50) ps • between N and PE 1.5 kV • response time / between L and (PE)N • response time / between N and PE 100 ns adjustable response factor / of tripping current fuse protection type / at V-shaped connection fuse protection type / for T-connector Connections/ Terminals type of electrical connection stripped length fughtening torque 4.3 4.7 stripped length connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • finely stranded AWG number / as coded connectable conductor cross section 4.3 4.7 AWG number / as coded connection screw signal design M5 signal design Optical, remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts operational current / of the remote signaling contacts operational current / of the remote signaling contacts		
response value of the surge voltage / at 6 kV / at (1.2/50) µs • between N and PE • response time / between L and (PE)N • response time / between N and PE adjustable response factor / of tripping current fuse protection type / at V-shaped connection fuse protection type / for T-connector Connections/ Terminals type of electrical connection stripped length tightening torque 4.3 4.7 stripped length connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • for rigid conductor • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design witching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts operational current / of the remote signaling contacts operational current / of the remote signaling contacts		
between N and PE response time / between L and (PE)N response time / between N and PE adjustable response factor / of tripping current fuse protection type / at V-shaped connection fuse protection type / for T-connector 315 A AC (gG) Connections/ Torminals type of electrical connection stripped length tightening torque 4.3 4.7 stripped length connectable conductor cross-section • for ringly stranded conductor • for rigid conductor • for rigid conductor • for rigid conductor • for rigid conductor • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts operational current / of the remote signaling contacts operational current / of the remote signaling contacts		
response time / between L and (PE)N response time / between N and PE adjustable response factor / of tripping current fuse protection type / at V-shaped connection fuse protection type / for T-connector 315 A AC (gG) Connections/ Terminals type of electrical connection stripped length 16 mm tightening torque 4.3 4.7 stripped length 16 mm connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • for rigid stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC • at DC operational current / of the remote signaling contacts operational current / of the remote signaling contacts 12 250 125 V (200 mA DC)		
response time / between N and PE adjustable response factor / of tripping current fuse protection type / at V-shaped connection fuse protection type / for T-connector 315 A AC (gG) Connections/ Terminals type of electrical connection stripped length tightening torque stripped length connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • for rigid conductor • for rigid stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC • operational current / of the remote signaling contacts	 between N and PE 	1.5 kV
response time / between N and PE adjustable response factor / of tripping current fuse protection type / at V-shaped connection fuse protection type / for T-connector 315 A AC (gG) Connections/ Terminals type of electrical connection stripped length tightening torque 4.3 4.7 stripped length 16 mm connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts operational current / of the remote signaling contacts operational current / of the remote signaling contacts 12 250 125 V (200 mA DC)	 response time / between L and (PE)N 	25 ns
fuse protection type / at V-shaped connection fuse protection type / for T-connector Connections/ Terminals type of electrical connection Screw terminal stripped length tightening torque 4.3 4.7 stripped length connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts or such as AC (gG) 315 A AC (gG) 45 ME Sure terminal 4.3 4.7 4.3 4.7 5 250 • at DC operational current / of the remote signaling contacts		100 ns
fuse protection type / for T-connector Connections/ Terminals type of electrical connection Screw terminal stripped length 16 mm tightening torque 4.3 4.7 stripped length 16 mm connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor 2.5 16 • for rigid conductor 2.5 25 • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts	adjustable response factor / of tripping current	1.6
type of electrical connection stripped length tightening torque 4.3 4.7 stripped length 16 mm connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts operational current / of the remote signaling contacts operational current / of the remote signaling contacts	fuse protection type / at V-shaped connection	63 A AC (gG)
type of electrical connection stripped length tightening torque stripped length tonnectable conductor cross-section of or finely stranded conductor finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts operational current / of the remote signaling contacts	fuse protection type / for T-connector	315 A AC (gG)
stripped length tightening torque 4.3 4.7 stripped length connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • finely stranded 2.5 16 AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts 16 mm 4.3 4.7 16 mm 4.3 4.7 16 mm 4.3 4.7 2.5 16 2.5 25 12 4 South in thread / of the connection screw M5 Optical, remote signaling contact PDT contact 10 mm 10	Connections/ Terminals	
stripped length tightening torque 4.3 4.7 stripped length connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • finely stranded 2.5 16 AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts 16 mm 4.3 4.7 16 mm 4.3 4.7 16 mm 4.3 4.7 2.5 16 2.5 25 12 4 South in thread / of the connection screw M5 Optical, remote signaling contact PDT contact 10 250 125 V (200 mA DC)	type of electrical connection	Screw terminal
tightening torque stripped length 16 mm connectable conductor cross-section • for finely stranded conductor • for rigid conductor • finely stranded 2.5 25 • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts		16 mm
stripped length connectable conductor cross-section • for finely stranded conductor • for rigid conductor • for rigid conductor • finely stranded 2.5 25 • finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Optical, remote signaling contact Indicator/remote signaling switching function / of the remote signaling contacts • at AC • at DC • at DC operational current / of the remote signaling contacts		4.3 4.7
connectable conductor cross-section • for finely stranded conductor • for rigid conductor • finely stranded 2.5 25 • finely stranded 2.5 16 AWG number / as coded connectable conductor cross section design of the thread / of the connection screw M5 signal design Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts 12 4 M5 PDT contact PDT contact 5 250 • at DC 125 V (200 mA DC)		16 mm
 for rigid conductor finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Optical, remote signaling contact Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts at AC at DC operational current / of the remote signaling contacts 12 4 PDT contact 5 250 125 V (200 mA DC) operational current / of the remote signaling contacts	connectable conductor cross-section	
 for rigid conductor finely stranded AWG number / as coded connectable conductor cross section design of the thread / of the connection screw signal design Optical, remote signaling contact Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts at AC at DC operational current / of the remote signaling contacts 12 4 PDT contact 5 250 125 V (200 mA DC) operational current / of the remote signaling contacts		2.5 16
AWG number / as coded connectable conductor cross section design of the thread / of the connection screw M5 signal design Optical, remote signaling contact Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts		2.5 25
section design of the thread / of the connection screw signal design Optical, remote signaling contact Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts	finely stranded	2.5 16
design of the thread / of the connection screw signal design Optical, remote signaling contact Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts		12 4
signal design Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts		
Indicator/remote signaling switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts		
switching function / of the remote signaling contacts operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts		Optical, remote signaling contact
operating voltage / of the remote signaling contacts • at AC • at DC operational current / of the remote signaling contacts 125 V (200 mA DC)	Indicator/remote signaling	
 at AC at DC operational current / of the remote signaling contacts 5 250 125 V (200 mA DC) 		PDT contact
• at DC 125 V (200 mA DC) operational current / of the remote signaling contacts	operating voltage / of the remote signaling contacts	
operational current / of the remote signaling contacts	• at AC	5 250
		125 V (200 mA DC)
	operational current / of the remote signaling contacts	
• at AC 5 mA 1 A		
• at DC 1 A		
connection type of remote signaling contact M2	connection type of remote signaling contact	M2
connectable conductor cross-section	connectable conductor cross-section	

- for remote circulture contacts / for rigid conductor	0.44 4.5
for remote signaling contacts / for rigid conductor	0.14 1.5
 for finely stranded conductor / for remote signaling contacts 	0.14 1.5
AWG number / as coded connectable conductor cross section / for remote signaling contacts / minimum	28
AWG number / as coded connectable conductor cross section / for remote signaling contacts / maximum	16
tightening torque / for remote signaling contacts	0.25 N·m
stripped length / of the cable / for remote signaling	7 mm
contacts	
NEMA/UL - Data	
type of surge protective device (SPD) / according to UL	4CA
type of distribution system / according to UL	3Y
type of distribution system	TT, TN-S
designation of the protective paths / according to UL	L-L, L-N, L-G, N-G
TOV behavior	
• at TOV test voltage (L-N)	415 V AC (5 s / withstand mode) / 440 V AC (120 min / safe failure mode)
at TOV test voltage (N-PE)	1200 V (200 ms / withstand mode)
Measured Limiting Voltage (MLV) / between L and L	3.28 kV
Measured Limiting Voltage (MLV) / between L and Ground (GND)	2.08 kV
Measured Limiting Voltage (MLV) / between L and N	2 kV
Measured Limiting Voltage (MLV) / between N and Ground (GND)	0.95 kV
Maximum Continuous Operating Voltage (MCOV) / between L and L	700 V
Maximum Continuous Operating Voltage (MCOV) / between L and Ground (GND)	350 V
Maximum Continuous Operating Voltage (MCOV) / between L and N	350 V
Maximum Continuous Operating Voltage (MCOV) / between N and Ground (GND)	264 V
leakage current / according to UL	20 kA
leakage current / according to UL	20 kA
leakage current / according to UL	20 kA
leakage current / according to UL	20 kA
sequential current	
 between N and Ground (GND) / according to UL 	200 A (264 V AC)
AWG number / as coded connectable conductor cross section / for remote signaling contacts / according to UL / minimum	30
AWG number / as coded connectable conductor cross section / for remote signaling contacts / according to UL / maximum	14
installation altitude above sea level / according to UL	6 562 ft
gross weight [lb] / according to UL	0.92 lb
net weight [lb] / according to UL	0.87 lb
combustibility class acc. to UL 94	V0
standards / according to UL	UL 1449 edition 4
operating voltage / of the remote signaling contacts / according to UL	125 V
operational current / of the remote signaling contacts / at AC / according to UL	1 A
AWG number / as coded connectable conductor cross section / according to UL / minimum	14
AWG number / as coded connectable conductor cross section / according to UL / maximum	2
Further information	

Information- and Downloadcenter (Catalogs, Brochures,...)

http://www.siemens.com/lowvoltage/catalogs

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=5SD7424-1

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/5SD7424-1 Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=5SD7424-1

