

- Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules
- Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage due to d.c. switching arcs (patented SCI principle)
- Approved fault-resistant Y circuit of the DEHNguard M YPV SCI ... (FM) prevents damage to the surge protective devices in case of insulation faults in the generator circuit
- Integrated d.c. fuse allows safe replacement of protection modules without arc formation
- Tested to prEN 50539-11
- Suitable for use in all PV systems in accordance with IEC 60364-7-712



For protecting low-voltage consumer's installations against surges. For use in accordance with IEC 60364-7-712:2002-05 (installation of photovoltaic power supply systems)

DEHNguard M YPV SCI 150/600/1000/1200:	Modular multipole surge arrester with three-step d.c. switching device; for photovoltaic systems up to 150/600/1000/1200 V
DEHNguard M YPV SCI ... FM:	With remote signalling contact for monitoring device (floating changeover contact)
DEHNguard S PV SCI 150/600:	For photovoltaic systems up to 150/600 V hard grounded on the d.c. side
DEHNguard S PV SCI ... FM:	With remote signalling contact for monitoring device (floating changeover contact)

The modular DEHNguard modular (Y)PV SCI ... (FM) surge arresters were specifically designed for protecting equipment in photovoltaic systems. The innovative patented three-step d.c. switching device (SCI principle) makes these arresters particularly safe so that they fulfil all requirements in modern photovoltaic systems. The devices are available as 150 V, 600 V, 1000 V and 1200 V versions, thus covering the most common voltage levels.

The application features of the modular Red/Line family design are similarly unique as the three-step d.c. switching device. The module locking system firmly fixes the protection modules to the base part. Neither shock nor vibration nor the enormous forces of discharge affect the safe connection to the protection module. Nevertheless, the protection modules can be easily replaced without tools by simply pressing the user-friendly module release button of the protection modules. Every protective circuit of DEHNguard modular (Y)PV SCI ... (FM) and every protection module is mechanically coded to ensure against installing the incorrect module.

To fulfil the special requirements in photovoltaic systems, a fault-resistant Y circuit consisting of three varistor-based protective circuits and a combined disconnection and short-circuiting device are integrated in a single device.

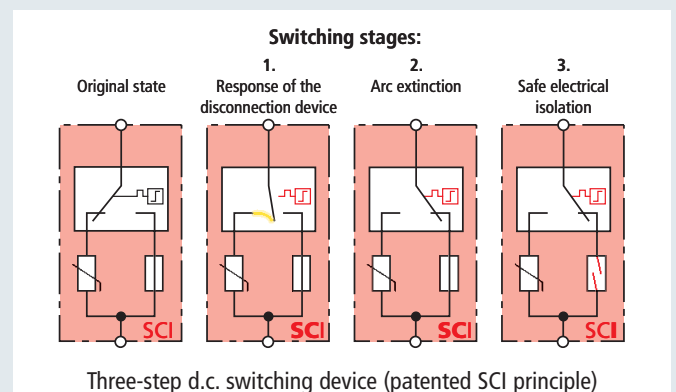
This synergy further reduces the probability of an arrester failure in case of the operating and fault states which have to be considered in photovoltaic systems. This ensures that the arrester is protected in case of overload without presenting a risk of fire to the system. Even in case of voltages up to 1200 V d.c., a switching arc, which is likely to occur when a conventional disconnecter of a surge protective device is triggered, is quenched immediately without risk. Fire protection is the top priority for DEHNguard modular (Y)PV SCI ... (FM) surge arresters.

A fuse which was particularly developed for photovoltaic systems was integrated into the short-circuit path. This ensures safe electrical isolation in case of a faulty surge protection module, allowing safe replacement of the protection module without arc formation. This unique design combines surge, fire and personal protection. Due to this innovative and

unique design, DEHNguard modular (Y)PV SCI ... (FM) can be used in all low, medium and high-performance photovoltaic systems with no need for an additional backup fuse.

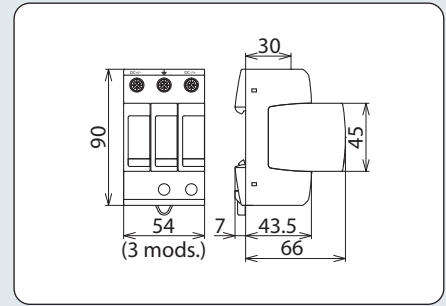
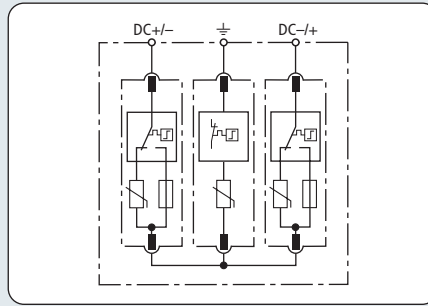
DG S PV SCI ... (FM) arresters are specifically designed for systems hard grounded on the d.c. side; this type of earthing is meanwhile required among others by manufacturers of special thin-film modules or also for legal or normative reasons in some regions. Since either the positive or the negative pole of the PV generator is hard grounded, the space-saving and thus cost-effective DG S PV SCI ... (FM) arresters (one protection module was removed from the Y circuit) may be used if the distance from the earthing point does not exceed 5 m.

The green and red indicator flags show the availability of every protective circuit. Apart from this visual indication, DEHNguard (Y)PV SCI ... (FM) arresters also feature a three-pole remote signalling terminal. With its floating changeover contact, the remote signal can be used as make or break contact according to the particular circuit concept. As with all surge arresters of the modular DEHNguard modular family, DEHNguard modular (Y)PV SCI ... (FM) arresters incorporate multifunctional terminals on a standardised spacing of 1 module for connecting conductors and busbars, allowing easy wiring with other DIN rail mounted devices.



DEHNguard M YPV SCI ...

Type 2 Surge Arresters for Use in PV Systems



Basic circuit diagram DG M YPV SCI ...

Dimension drawing DG M YPV SCI ...

- Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules
- Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)
- Safe replacement of protection modules without arc formation due to integrated d.c. fuse

Modular multipole surge arrester with three-step d.c. switching device for use in PV systems

Type	DG M YPV SCI 150	DG M YPV SCI 600	DG M YPV SCI 1000	DG M YPV SCI 1200
Part No.	952 513 <small>NEW</small>	952 511	952 510	952 512
Conformity with prEN 50539-11	yes	yes	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2	Type 2	Typ 2
SPD classification according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Max. PV voltage (U _{CPV})	≤ 150 V	≤ 600 V	≤ 1000 V	≤ 1200 V
Short-circuit withstand capacity (I _{SCWPV})	1000 A	1000 A	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U _C)	75 V	300 V	500 V	600 V
Total discharge current (8/20 μs) (I _{total})	40 kA	40 kA	40 kA	30 kA
Nominal discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _n)	10 kA	12.5 kA	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _{max})	20 kA	25 kA	25 kA	25 kA
Voltage protection level (U _p)	≤ 0.8 kV	≤ 2.5 kV	≤ 4 kV	≤ 4.5 kV
Voltage protection level at 5 kA (U _p)	≤ 0.6 kV	≤ 2 kV	≤ 3.5 kV	≤ 4 kV
Response time (t _A)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	UL	UL, CSA	UL, CSA	UL

Surge Arresters Type 2

Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

Protection module for DEHNguard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse



Type DG MOD PV ...	SCI 75	SCI 300	SCI 500	SCI 600
Part No.	952 055	952 053	952 051	952 054
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V

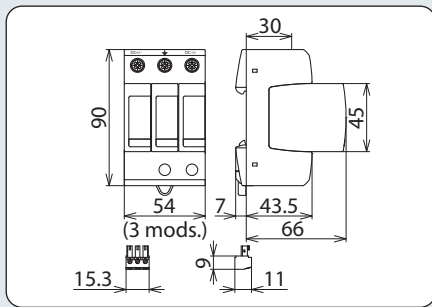
Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

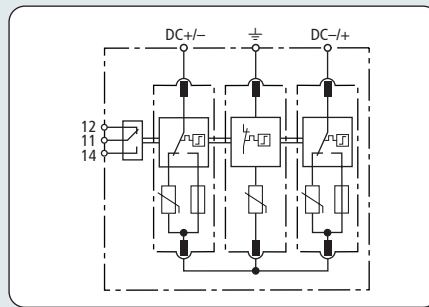
Varistor-based protection module for DEHNguard M YPV SCI ... and DEHNguard S PV SCI ... arresters



Type DG MOD PV ...	75	300	500	600
Part No.	952 045	952 043	952 041	952 044
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V



Dimension drawing DG M YPV SCI ... FM



Basic circuit diagram DG M YPV SCI ... FM



Modular multipole surge arrester with three-step d.c. switching device for use in PV systems with remote signalling contact for monitoring device (floating changeover contact)

- Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules
- Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)
- Safe replacement of protection modules without arc formation due to integrated d.c. fuse

Type	DG M YPV SCI 150 FM	DG M YPV SCI 600 FM	DG M YPV SCI 1000 FM	DG M YPV SCI 1200 FM
Part No.	952 518 ^{NEW}	952 516	952 515	952 517
Conformity with prEN 50539-11	yes	yes	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2	Type 2	Type 2
SPD classification according to IEC 61643-1/-11	Class II	Class II	Class II	Class II
Max. PV voltage (U _{CPV})	≤ 150 V	≤ 600 V	≤ 1000 V	≤ 1200 V
Short-circuit withstand capacity (I _{SCWPV})	1000 A	1000 A	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U _C)	75 V	300 V	500 V	600 V
Total discharge current (8/20 μs) (I _{total})	40 kA	40 kA	40 kA	30 kA
Nominal discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _n)	10 kA	12.5 kA	12.5 kA	12.5 kA
Max. discharge current (8/20 μs) [(DC+/DC-) --> PE] (I _{max})	20 kA	25 kA	25 kA	25 kA
Voltage protection level (U _p)	≤ 0.8 kV	≤ 2.5 kV	≤ 4 kV	≤ 4.5 kV
Voltage protection level at 5 kA (U _p)	≤ 0.6 kV	≤ 2 kV	≤ 3.5 kV	≤ 4 kV
Response time (t _d)	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns
Operating temperature range (T _U)	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red	green / red	green / red
Number of ports	1	1	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible			
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible			
For mounting on	35 mm DIN rail acc. to EN 60715			
Enclosure material	thermoplastic, red, UL 94 V-0			
Place of installation	indoor installation	indoor installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20	IP 20	IP 20
Capacity	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880	3 modules, DIN 43880
Approvals	UL	UL, CSA	UL, CSA	UL
Type of remote signalling contact	changeover contact	changeover contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A			
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible			

Accessory for DEHNgard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNgard M (Y)PV SCI

Varistor-based protection module for DEHNgard M YPV SCI ... and DEHNgard S PV SCI ... arresters



Type DG MOD PV ...	75	300	500	600
Part No.	952 045	952 043	952 041	952 044
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V

Accessory for DEHNgard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNgard M (Y)PV SCI

Protection module for DEHNgard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse

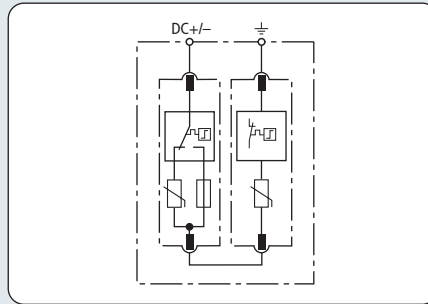


Type DG MOD PV ...	SCI 75	SCI 300	SCI 500	SCI 600
Part No.	952 055	952 053	952 051	952 054
Max. continuous operating d.c. voltage (U _C)	75 V	300 V	500 V	600 V

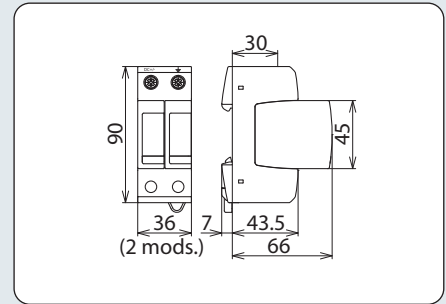
DEHNgard S PV SCI ...

Type 2 Surge Arresters for Use in PV Systems

NEW



Basic circuit diagram DG S PV SCI ...



Dimension drawing DG S PV SCI ...

- **Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules**
- **Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)**
- **Safe replacement of protection modules without arc formation due to integrated d.c. fuse**

Modular single-pole surge arrester with three-step d.c. switching device for PV systems

Type	DG S PV SCI 150	DG S PV SCI 600
Part No.	952 551	952 550
Conformity with prEN 50539-11	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2
SPD classification according to IEC 61643-1/-11	Class II	Class II
Max. PV voltage (U_{PV})	≤ 150 V	≤ 600 V
Short-circuit withstand capacity (I_{SCWPV})	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U_C)	150 V	600 V
Nominal discharge current (8/20 μ s) [(DC+/DC-) --> PE] (I_n)	10 kA	12.5 kA
Max. discharge current (8/20 μ s) [(DC+/DC-) --> PE] (I_{max})	20 kA	25 kA
Voltage protection level (U_p)	≤ 0.8 kV	≤ 2.5 kV
Voltage protection level at 5 kA (U_p)	≤ 0.6 kV	≤ 2 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	green / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL	UL

Accessory for DEHNgard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNgard M (Y)PV SCI

Protection module for DEHNgard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse



Type DG MOD PV ...	SCI 75	SCI 300
Part No.	952 055	952 053
Max. continuous operating d.c. voltage (U_C)	75 V	300 V

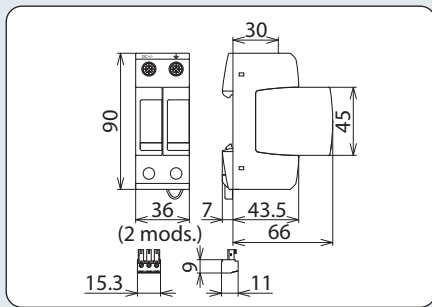
Accessory for DEHNgard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNgard M (Y)PV SCI

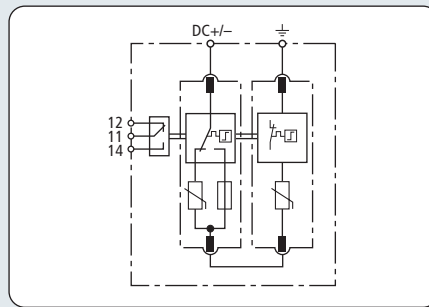
Varistor-based protection module for DEHNgard M YPV SCI ... and DEHNgard S PV SCI ... arresters



Type DG MOD PV ...	75	300
Part No.	952 045	952 043
Max. continuous operating d.c. voltage (U_C)	75 V	300 V



Dimension drawing DG S PV SCI ... FM



Basic circuit diagram DG S PV SCI ... FM



NEW

Modular single-pole surge arrester with three-step d.c. switching device for PV systems; with remote signalling contact for monitoring device (floating changeover contact)

- **Prewired modular complete unit for use in photovoltaic systems consisting of a base part and plug-in protection modules**
- **Combined disconnection and short-circuiting device with safe electrical isolation in the protection module prevents fire damage caused by d.c. switching arcs (patented SCI principle)**
- **Safe replacement of protection modules without arc formation due to integrated d.c. fuse**

Type	DG S PV SCI 150 FM	DG S PV SCI 600 FM
Part No.	952 556	952 555
Conformity with prEN 50539-11	yes	yes
SPD classification according to EN 61643-11	Type 2	Type 2
SPD classification according to IEC 61643-1/-11	Class II	Class II
Max. PV voltage (U_{CPV})	≤ 150 V	≤ 600 V
Short-circuit withstand capacity (I_{SCWPV})	1000 A	1000 A
Max. continuous operating d.c. voltage [(DC+/DC-) --> PE] (U_C)	150 V	600 V
Nominal discharge current (8/20 μ s) [(DC+/DC-) --> PE] (I_n)	10 kA	12.5 kA
Max. discharge current (8/20 μ s) [(DC+/DC-) --> PE] (I_{max})	20 kA	25 kA
Voltage protection level (U_p)	≤ 0.8 kV	≤ 2.5 kV
Voltage protection level at 5 kA (U_p)	≤ 0.6 kV	≤ 2 kV
Response time (t_A)	≤ 25 ns	≤ 25 ns
Operating temperature range (T_U)	-40°C...+80°C	-40°C...+80°C
Operating state/fault indication	green / red	gren / red
Number of ports	1	1
Cross-sectional area (min.)	1.5 mm ² solid/flexible	1.5 mm ² solid/flexible
Cross-sectional area (max.)	35 mm ² stranded/25 mm ² flexible	35 mm ² stranded/25 mm ² flexible
For mounting on	35 mm DIN rail acc. to EN 60715	35 mm DIN rail acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation	indoor installation
Degree of protection	IP 20	IP 20
Capacity	2 modules, DIN 43880	2 modules, DIN 43880
Approvals	UL	UL
Type of remote signalling contact	changeover contact	changeover contact
a.c. switching capacity	250 V/0.5 A	250 V/0.5 A
d.c. switching capacity	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Cross-sectional area for remote signalling terminals	max. 1.5 mm ² solid/flexible	max. 1.5 mm ² solid/flexible

Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

Varistor-based protection module for DEHNguard M YPV SCI ... and DEHNguard S PV SCI ... arresters



Type DG MOD PV ...	75	300
Part No.	952 045	952 043
Max. continuous operating d.c. voltage (U_C)	75 V	300 V

Accessory for DEHNguard® modular (Y)PV SCI ... (FM)

Varistor-Based Protection Module for DEHNguard M (Y)PV SCI

Protection module for DEHNguard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device with integrated back-up fuse



Type DG MOD PV ...	SCI 75	SCI 300
Part No.	952 055	952 053
Max. continuous operating d.c. voltage (U_C)	75 V	300 V