

# Spec Sheet: ZFV32x2 (type: ZFV32SMAHIA4+2)

#### **Features:**

- Compact 8P non polarized isolator up to 32A and up to 1500V DC.
- Fault-make load-break switch operation, ideal for DC systems.
- DIN profile complete with direct mounted padlockable handle.
- Terminals rated to IP20.
- Oxidation proof contacts with up to 16mm<sup>2</sup> cable capacity.

**Application:** PV array isolators.

**Certification**: EN 60947.3, UL 508, File E332938.

#### Ratings

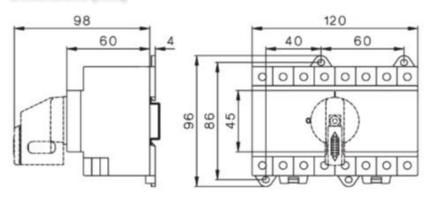
Free air thermal current (lth)	32A
Rated insulation pollution degree III (Ui)	1000V
Rated insulation pollution degree II (Ui)	1500V
Rated impulse withstand voltage (Uimp)	8kV
Ambient temperature enclosed	-40  to  +45
Maximum fuse (A)	80
Max padlock shank size	5mm
Rated conditional short-cct current	5kA
Rated short-cct making capacity	1.7kA
Short Time Withstand (1sec)	1kA
Power loss / pole	4.0W
Mechanical endurance	10,000
Weight	0.4kg
Operating torque	3.4Nm
Connection torque	1.2 - 1.8Nm
Cable Size mm <sup>2</sup>	4 -16

The contact ratings need to be read in conjunction with AS5033-2012 Appendix B5 for floating PV systems with transformerless inverters. See over.



ZFV32SMAH1A4+2

### **Dimensions (mm)**





### **ZFV32x2 - Technical Data**

Data according to IEC 60947-3, VDE 0660, GB1448.3 (CCC China)



ZFV32SMAH1A4+2

Main Contacts		ZFV32X2		
Rated thermal current lthe, A Rated insulation voltage Ui 1), V		32 1000		
Rated insulation voltage Ui <sup>2</sup> , V Distance of contacts (per pole), mm		1500 8		
	U <sub>e</sub> rated		le; DC-PV2 rated	l(make) and

Pole		Ue rated operational voltage V.d.c.	DC21A & DC21B	le; DC-PV2 rated operational current	l(make) and lc(break) DC-PV2 4 x le A
A1    400V   16   20   80	1Pole	300V	27	27	108
1		400V	16	20	80
1					
1					
Sooy					
900V   4   2   8					
1000V   2.5   2   8	_1/				
Series   Soov   32   32   128					
A2				_	
A2	2Pole In Series	500V	32	32	128
Tool					
ROOV   23	, ··=				
S50V   25					
900V   20				17	00
1000V				12	- 10
1100V					
1200V					
1   2   1300V   -   3   12   1400V   -   3   12   1500V   5   2   8   8   50   200   50   35   140   68   600V   50   35   140   68   600V   23   17   68   600V   20   12   48   600V   13   6   24   1100V   -   5   20   1200V   10   4   16   1300V   -   3   12   1200V   10   10   10   10   10   10   10					
1400V   -   3   12     1500V   5   2   8     2 Poles In Series   500V   58   50   200     + 2 Poles Parallel   600V   50   35   140     A2+2   700V   27   22   88     800V   23   17   68     900V   20   12   48     1000V   13   6   24     1100V   -   5   20     1200V   10   4   16     1300V   -   3   12     1400V   -   3   12     1500V   5   2   8      4 Poles In Series   500V   32   32   128     800V   32   32   128     800V   32   32   128     800V   32   32   128     1000V   58   -   -     4Poles In Series   500V   58   -   -     4Poles Parallel   600V   58   -   -     4Poles Parallel   600V   58   -   -     700V   58   -     -     700V   58   -     -     700V   58   -     -     700V   58   -     -     700V   58   -     -     700V   58   -     -     700V   58   -     -     700V   58   -           700V   58   -           700V   58                     700V   58                           700V   58					
1500V   5   2   8	_1 _2				
2 Poles In Series + 2 Poles Parallel A2+2    Soov   58					
Color		15001	3		Ŭ
Color	2 Poles In Series	500V	58	50	200
A2+2    700V   27   22   88     800V   23   17   68     900V   20   12   48     1000V   13   6   24     1100V   -   5   20     1200V   10   4   16     1300V   -   3   12     1400V   -   3   12     1500V   5   2   8      4 Poles In Series   500V   32   32   128     800V   32   32   128     800V   32   32   128     800V   32   32   128     900V   32   32   128     1000V   32   32					
SOOV   23   17   68					
900V   20	712 . 2				
1000V   13   6   24     1100V   -   5   20     1200V   10   4   16     1300V   -   3   12     1400V   -   3   12     1500V   5   2   8      4 Poles In Series   500V   32   32   128     600V   32   32   128     700V   32   32   128     800V   32   32   128     900V   32   32   128     1000V   58   -   -     4 Poles In Series   500V   58   -   -     4 Poles Parallel   600V   58   -   -     700V   58   -   -     900V   58   -   -     900V   58   -   -     1000V   58   -     -     1000V   58   -     -     1000V   58   -     -     1000V   58   -     -     1000V   58   -     -     1000V   58   -     -     1000V   58   -     -     1000V   58   -     -     1000V   58   -           1000V   58   -             1000V   100V   10				12	
1   2   1   2   1   2   1   3   4   1   4   1   6   1   1   1   2   1   1   2   1   1   2					
1200V   10					
1300V   -   3   12     1400V   -   3   12     1500V   5   2   8     4 Poles In Series	1 . 2 .				
1500V   5   2   8			-	3	12
1	3 4	1400V			12
A4    600V   32   32   128     700V   32   32   128     800V   32   32   128     900V   32   32   128     1000V   32   32   128     1000V   32   32   128     1100V   -   32   128     1200V   32   27   108     1200V   32   27   108     1300V   -   24   96     1400V   -   21   84     1500V   23   18   72      4Poles In Series   500V   58   -   -     4 Poles Parallel   600V   58   -   -     A4+2   700V   58   -   -     900V   58   -   -     1000V   58   -   -     1000V   58   -   -		1500V	5	2	8
A4    600V   32   32   128     700V   32   32   128     800V   32   32   128     900V   32   32   128     1000V   32   32   128     1000V   32   32   128     1100V   -   32   128     1200V   32   27   108     1200V   32   27   108     1300V   -   24   96     1400V   -   21   84     1500V   23   18   72      4Poles In Series   500V   58   -   -     4 Poles Parallel   600V   58   -   -     A4+2   700V   58   -   -     900V   58   -   -     1000V   58   -   -     1000V   58   -   -					
A4    600V   32   32   128     700V   32   32   128     800V   32   32   128     900V   32   32   128     1000V   32   32   128     1000V   32   32   128     1100V   -   32   128     1200V   32   27   108     1200V   32   27   108     1300V   -   24   96     1400V   -   21   84     1500V   23   18   72      4Poles In Series   500V   58   -   -     + 2 Poles Parallel   600V   58   -   -     A4+2   700V   58   -   -     900V   58   -   -     1000V   58   -   -     1000V   58   -   -	4 Poles In Series	500V	32	32	128
Tool   32   32   128   800V   32   32   128   900V   32   32   128   1000V   32   32   128   1100V   32   32   128   1100V   - 32   128   1200V   32   27   108   1300V   - 24   96   1400V   - 21   84   1500V   23   18   72   1500V   23   18   72   1500V   24   24   24   25   25   25   25   25	A4	600V		32	
800V   32   32   128     900V   32   32   128     1000V   32   32   128     1100V   -   32   128     1200V   32   27   108     1300V   -   24   96     1400V   -   21   84     1500V   23   18   72      4Poles In Series   500V   58   -   -     4+2   700V   58   -   -     800V   58   -   -     900V   58   -   -     900V   58   -   -     1000V   58   -   -		700V		32	
900V   32   32   128   1000V   32   32   128   1100V   - 32   128   1200V   32   27   108   1300V   - 24   96   1400V   - 21   84   1500V   23   18   72   72   72   74   74   75   75   75   75   75   75		800V	32	32	128
1000V   32   32   128   1100V   - 32   128   1200V   32   27   108   1300V   - 24   96   1400V   - 21   84   1500V   23   18   72     72     72     72     72     72     73   74     73   74     74   75   75   75   75   75					
1200V   32   27   108   1300V   - 24   96   1400V   - 21   84   1500V   23   18   72			32		
1300V   - 24   96     1400V   - 21   84     1500V   23   18   72     4Poles In Series   500V   58       44+2   600V   58   -     500V   58   -     600V   58   -     700V   58   -     700V   58   -     700V   58   -     1000V   1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V   1000V   1000V     1000V     1000V   1000V     1000V     1000V   1000V     1000V		1100V	-	32	128
1400V		1200V	32		
1500V   23   18   72	1 . 2 . 2 . 4 .	1300V	-	24	96
## Apoles In Series + 2 Poles Parallel A4+2  ## Apoles In Series					
+ 2 Poles Parallel A4+2		1500V	23	18	72
+ 2 Poles Parallel A4+2					
A4+2 700V 58				-	-
800V 58				-	-
900V 58 1 1000V 58	A4+2				
1000V 58				-	-
				-	-
1 0 0 1 1100// 1					-
	1 2 3 4	1100V	-	30	120
1200V 50 27 108			50		
				24	
1400V - 21 84				21	
1500V 23 18 72		1500V	23	18	72

DC21B

L/R = 1ms

<sup>1)</sup> Suitable at overvoltage category I to III, pollution degree (standard-industry): Uimp = 8kV.

<sup>2)</sup> Suitable at overvoltage category I to III, pollution degree (min. IP55): Uimp = 8kV.



### Temperature - ZFV32x2

In Australia, operating temperature can create onerous conditions for switchgear to operate in. Often overlooked but of extreme importance is the thermal stresses placed on switchgear due to cyclic loading, i.e. thermal current with varying loads over a 24 hour period.

Switchgear should be de-rated according to the "Fluid Environment" it is subjected to. The definition of "Fluid Environment" is the area immediately surrounding the switchgear. This environment is subject to change as equipment and installations vary but the derating in each case must be considered to ensure a reliable network design.

## **Ratings**

#### Switch LS32 ..., 2 contacts in series + 2 parallel, open

