



# **VL SERIES**

THREE-PHASE INVERTER





## PV STRING MONITORING

Real time PV string current sampling and monitoring, with string performance analysis and report abnormal condition capability.



#### PID RECOVERY

Improving panel efficiency over life time and prevents further degradation with auto detecation and adjustment.



# **AFCI FUNCTION**

Providing safe and reliable protection against arc, and accurate and fast response to ensure man and device safetv.



#### IP66 RATED

Reliable performance under extreme environment and temperature condition, extending product life with minimum effort.

### REFINED - POWERFUL - FLEXIBLE

The VL Series inverter range is aimed at three-phase domestic commercial installations, offering unrivalled performance and versatility for increased yield potential and longer generation windows. The three-phase VL Series inverter options range from 15kW to 37.5kW.













For more about the Fox ESS range of three-phase inverters, visit:

www.fox-ess.com



# TECHNICAL SPECIFICATIONS

Max. Input Voltage [V]	MODEL	VL15	VL20	VL25	VL30	VL37.5	
Max. Input Voltage [V]	INPUT(PV)						
Start-up injust Voltage [V]	Max. Input Voltage [V]	1100					
Rated Input Voltage [V]							
MPPT Operating Voltage Range (V)   400 ~ 330 ~ 800   100							
MPT Voltage Range [V] [Full Load]   320 ~ 800							
Max. John Current par MPPT [A] 40 Max. Short circuit Current [A] 50 Van. Short circuit Current [A] 50 Van. Short Circuit Current [A] 50 Variety Frackers 4 Variety MPP Trackers 2 Variety MPP Trackers 5 Variety MPP Trackers 5 Van. Ac Active Power [RW] 15 20 25 30 37.5 Van. Ac Active Power [RW] 16.5 22 27.5 33 37.5 Van. Ac Active Power [RW] 16.5 22 27.5 33 37.5 Van. Ac Active Power [RW] 16.5 22 27.5 33 37.5 Van. Ac Active Power [RW] 16.5 22 27.5 33 37.5 Van. Ac Active Power [RW] 16.5 22 27.5 33 37.5 Van. Ac Active Power [RW] 16.5 22 27.5 33 37.5 Van. Ac Grid Frequency [Hz] 50/60 Van. Ac Grid Frequency [Hz] 50/60 Van. Current Control [A] 43.4 57.8 72.2 86.7 98.5 Van. Cutrent Control [A] 43.4 57.8 72.2 86.7 98.5 Van. Cutrent Control [A] 43.4 57.8 72.2 86.7 98.5 Van. Cutrent Control [A] 98.5 72.8 73.5 75.5 Van. Cutrent Control [A] 98.5 72.8 73.5 75.5 75.5 Van. Cutrent Control [A] 98.5 72.2 86.7 98.5 Van. Cutrent Control [A] 98.5 72.8 73.5 75.5 75.5 Van. Cutrent [A] 98.5 72.5 75.5 75.5 75.5 Van. Cutrent [A] 98.5 72.2 86.7 98.5 Van. Cutrent [A] 98.5 72.5 75.5 75.5 75.5 75.5 75.5 75.5 75							
Max. Short-circuit Current [A] 50 No. of MPP Trackers 4 Strings per MPP Trackers  OUTPUTAC)  OUTPUTAC)  Nominal Output Power [kW] 15 20 25 30 37.5 Nominal Output Apparent Power [kW] 15 20 25 30 37.5 Nominal Output Apparent Power [kW] 16.5 22 27.5 33 37.5 Nax. AC Active Power [kW] 16.5 22 27.5 33 37.5 Nominal Output Voltage [V] 50/60  AKE Grid Frequency Range [Hz] 50/60  AC Grid Frequency Range [Hz] 50/60  AC Grid Frequency Range [Hz] 50/60  AC Grid Frequency Range [Hz] 63 8 72.2 86.7 98.5  Nominal AC Byther Factor 63 8 8 72.2 8 8.7 98.5  Nax. Output Current [A] 43.4 57.8 72.2 86.7 98.5  Nax. Output Current [A] 63 8 77.6  Max. Output Fower Factor 7  Nax. Output Fower Factor 8 8 8 72.2 8 8.7 98.5  Description (B) 98.1  PORTICION 10 98.1  Etripicacy [V] 98.1  AC Sort-circuit Protection 7 YES  AC Overcurrent Protection 7 YES  AC Overcurrent Protection 9 YES  AC Overcurrent Protection 9 YES  AC Overcurrent Monitoring YES							
No. of MPP Trackers							
Strings per MPP Tracker	No. of MPP Trackers						
Nominal Output Power [kW]	Strings per MPP Tracker						
Nominal Output Power [kW]							
Nominal Output Apparent Power [kW]		15	20	25	30	37.5	
Max. AC Active Power [kW]         16.5         22         27.5         33         37.5           Max. AC Apparent Power [kVA]         16.5         22         27.5         33         37.5           Max. AC Apparent Power [kVA]         16.5         22         27.5         33         37.5           Nominal Output Voltage [V]         50/60         45° 557 /55° 65         45° 557 /55° 65         45° 557 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 507 /55° 65         45° 50° 75° 65         45° 50° 75° 65         45° 50° 75° 65         45° 50° 75° 75° 75° 75° 75° 75° 75° 75° 75° 75		15	20		30	37.5	
Max. AC Apparent Power [kVA]         16.5         22         27.5         33         37.5           Nominal AC Grid Frequency (Itz)         50/60 <td>Max. AC Active Power [kW]</td> <td>16.5</td> <td>22</td> <td>27.5</td> <td>33</td> <td>37.5</td>	Max. AC Active Power [kW]	16.5	22	27.5	33	37.5	
Nominal Output Voltage [V]         220, 3W+N+PE or 3W+PE           Nominal AC Grid Frequency [Hz]         50/60           Max. Output Current [A]         43.4         57.8         72.2         86.7         98.5           Output Power Factor         0.8 leading to 0.8 lagging         17.0         17.0         18.0         19.5		16.5	22	27.5	33	37.5	
Nominal AC Grid Frequency [Hz]         50/60           AC Grid Frequency Range [Hz]         45 ° 55 / 55 ° 65           Max. Output Current [A]         43.4         57.8         72.2         86.7         98.5           Output Power Factor         0.8 leading to 0.8 lagging         THO [KS]         STATE TOWNS T							
AC Grid Frequency Range [Hz]		·					
Max. Output Current (A)         43.4         57.8         72.2         86.7         98.5           Output Power Factor         0.8 leading to 0.8 laaging to 0.8 laaging to 1.8 laaging to	. , ,	·					
Output Power Factor         0.8 leading to 0.8 lagging           ThD [%]         <3 at Nominal Output Power		43.4	57.8	·	86.7	98.5	
THDI [%]         <3 at Nominal Output Power           EFFICIENCY           European Efficiency [%]         97.6           Max. Efficiency [%]         98.1           PROTECTION           DC Switch         YES           DC Reverse Polarity Protection         YES           AC Short-circuit Protection         YES           AC Overcurrent Protection         YES           AC Overcurrent Monitoring         YES           Residual Current Monitoring         YES           Vey String Current Monitoring         YES           Vey String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         G0           Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [*C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)				0.8 leading to 0.8 lagging	ξ		
EFFICIENCY           European Efficiency [%]         97.6           Max. Efficiency [%]         98.1           PROTECTION         ****           DC Switch         YES           DC Reverse Polarity Protection         YES           AC Short-circuit Protection         YES           AC Short-circuit Protection         YES           Insulation Monitoring         YES           Insulation Monitoring         YES           Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         CS           GENERAL DATA         CS           Dimensions (W*H**D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smrt air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range ["C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         1P66	•						
European Efficiency [%]         97.6           Max. Efficiency [%]         98.1           PROTECTION           DC Switch         YES           DC Reverse Polarity Protection         YES           AC Short-circuit Protection         YES           AC Overcurrent Protection         YES           AC Overcurrent Protection         YES           Insulation Monitoring         YES           Residual Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PD Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         CS           GENERAL DATA         YES           Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [*C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         [P66           Communication         R5485/USB/Wi-Fi+LAN/46							
Max. Efficiency [%]         98.1           PROTECTION           DC Switch         YES           DC Reverse Polarity Protection         YES           AC Short-circuit Protection         YES           AC Overcurrent Protection         YES           Insulation Monitoring         YES           Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         TE           Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [*C]         -30 ~ 60           Humidity [%]         0 ~ 2100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G				97.6			
PROTECTION           DC Switch         YES           DC Reverse Polarity Protection         YES           AC Short-circuit Protection         YES           AC Overcurrent Protection         YES           Insulation Monitoring         YES           Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [*C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G							
DC Switch         YES           DC Reverse Polarity Protection         YES           AC Short-circuit Protection         YES           AC Overcurrent Protection         YES           Insulation Monitoring         YES           Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         YES           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Allitude [m]         4000           Operating Temperature Range [*C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G							
AC Short-circuit Protection         YES           AC Overcurrent Protection         YES           Insulation Monitoring         YES           Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         C5           Weight (kg)         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [*C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G	DC Switch	YES					
AC Short-circuit Protection         YES           AC Overcurrent Protection         YES           Insulation Monitoring         YES           Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         C5           Weight (kg)         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [*C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G							
Insulation Monitoring YES Residual Current Monitoring YES PV String Current Monitoring YES Surge Protection DC Type II / AC Type II PID Recovery YES AFCI Optional Grid monitoring YES Night SVG YES Night SVG YES Anti-Corrosion C5  GENERAL DATA Dimensions (W*H*D) [mm] 640*430*243 Weight [kg] 50 Cooling Method Smart air cooling / FAN Max. Operating Altitude [m] 4000 Operating Temperature Range [°C] -30 ~ 60 Humidity [%] 0 ~ 100 (No Condensation) Ingress Protection RS485/USB/Wi-Fi+LAN/4G	AC Short-circuit Protection						
Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         S           Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [°C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G	AC Overcurrent Protection						
Residual Current Monitoring         YES           PV String Current Monitoring         YES           Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         S           Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [°C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G	Insulation Monitoring						
Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         C5           Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [°C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G	Residual Current Monitoring						
Surge Protection         DC Type II / AC Type II           PID Recovery         YES           AFCI         Optional           Grid monitoring         YES           Night SVG         YES           Anti-Corrosion         C5           GENERAL DATA         C5           Dimensions (W*H*D) [mm]         640*430*243           Weight [kg]         50           Cooling Method         Smart air cooling / FAN           Max. Operating Altitude [m]         4000           Operating Temperature Range [°C]         -30 ~ 60           Humidity [%]         0 ~ 100 (No Condensation)           Ingress Protection         IP66           Communication         RS485/USB/Wi-Fi+LAN/4G	PV String Current Monitoring						
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AFCI Optional Grid monitoring YES Night SVG YES Anti-Corrosion C5  GENERAL DATA Dimensions (W*H*D) [mm] 640*430*243 Weight [kg] 50 Cooling Method Smart air cooling / FAN Max. Operating Altitude [m] 4000 Operating Temperature Range [°C] -30 ~ 60 Humidity [%] 0 ~ 100 (No Condensation) Ingress Protection RS485/USB/Wi-Fi+LAN/4G	PID Recovery						
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Night SVG YES Anti-Corrosion C5  GENERAL DATA  Dimensions (W*H*D) [mm] 640*430*243  Weight [kg] 50  Cooling Method Smart air cooling / FAN  Max. Operating Altitude [m] 4000  Operating Temperature Range [°C] -30 ~ 60  Humidity [%] 0 ~ 100 (No Condensation)  Ingress Protection IP66  Communication RS485/USB/Wi-Fi+LAN/4G							
Anti-Corrosion C5  GENERAL DATA  Dimensions (W*H*D) [mm] 640*430*243  Weight [kg] 50  Cooling Method Smart air cooling / FAN  Max. Operating Altitude [m] 4000  Operating Temperature Range [°C] -30 ~ 60  Humidity [%] 0 ~ 100 (No Condensation)  Ingress Protection IP66  Communication RS485/USB/Wi-Fi+LAN/4G	<u>-</u>						
GENERAL DATADimensions (W*H*D) [mm]640*430*243Weight [kg]50Cooling MethodSmart air cooling / FANMax. Operating Altitude [m]4000Operating Temperature Range [°C]-30 ~ 60Humidity [%]0 ~ 100 (No Condensation)Ingress ProtectionIP66CommunicationRS485/USB/Wi-Fi+LAN/4G	Anti-Corrosion						
Dimensions (W*H*D) [mm] 640*430*243  Weight [kg] 50  Cooling Method Smart air cooling / FAN  Max. Operating Altitude [m] 4000  Operating Temperature Range [°C] -30 ~ 60  Humidity [%] 0 ~ 100 (No Condensation)  Ingress Protection IP66  Communication RS485/USB/Wi-Fi+LAN/4G	GENERAL DATA						
Weight [kg]50Cooling MethodSmart air cooling / FANMax. Operating Altitude [m]4000Operating Temperature Range [°C]-30 ~ 60Humidity [%]0 ~ 100 (No Condensation)Ingress ProtectionIP66CommunicationRS485/USB/Wi-Fi+LAN/4G				640*430*243			
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Communication RS485/USB/Wi-Fi+LAN/4G				·	'/		
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	Display		LED, Wi-Fi+APP				