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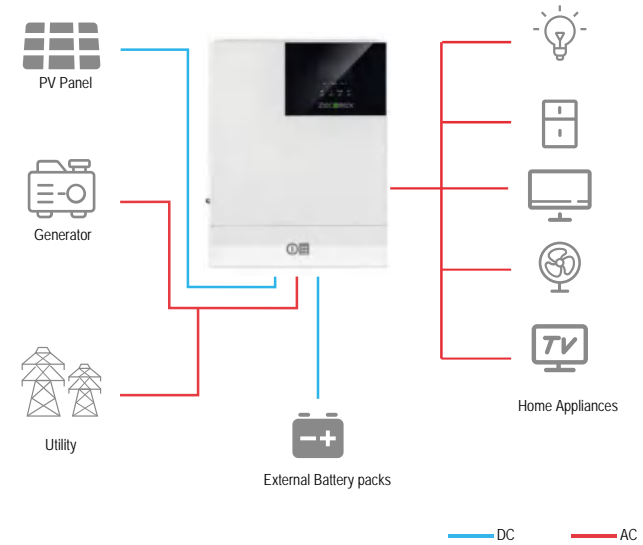
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# zeconex

EXPERTS IN PV ENERGY STORAGE  
MANAGEMENT AND CONTROL



- Household photovoltaic power supply system
- All-in-one solar charge inverter system

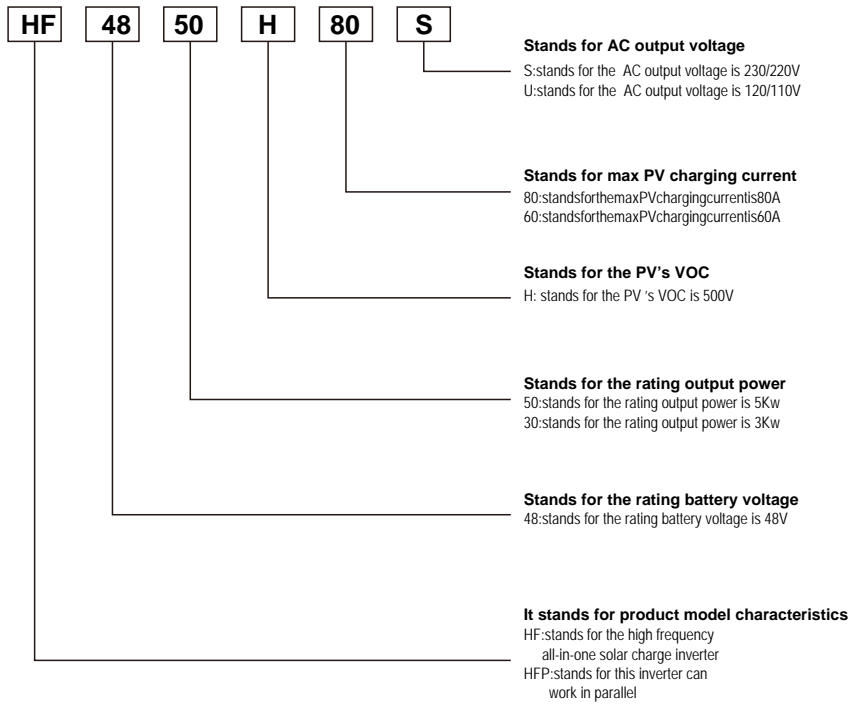




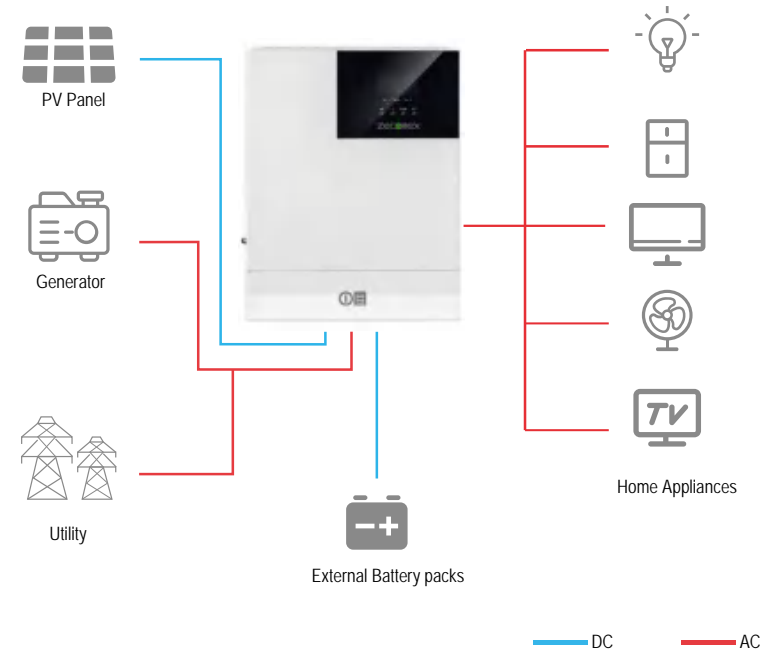
## RELEVANT CERTIFICATION



## NAMING CONVENTION



## PRODUCT SCHEMATIC



## APPLICATION SCENARIOS



# Single-phase ESS hybrid inverter - 5KW

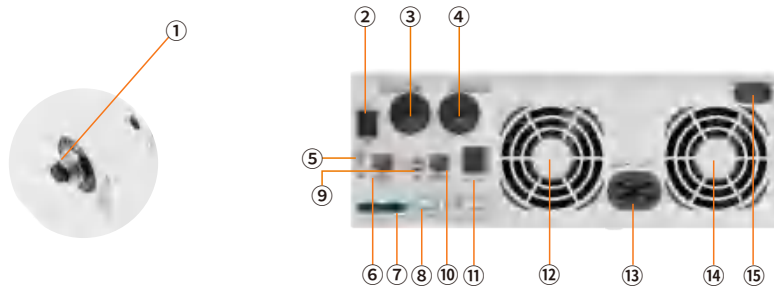
HFP4850S80-H (PV: 500V; AC: 220/230V)



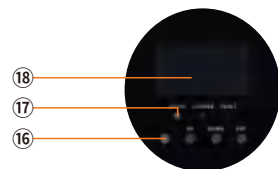
## Performance characteristics

- Load friendly: Stable sine wave AC output via SPWM modulation
- Supports a wide range of battery technology: GEL, AGM, Flooded, LFP, and program.
- Dual LFP battery activation method: PV&mains
- Uninterrupted power supply: simultaneous connection to utility grid/generator and PV .
- Intelligent programming: the priority of the output from different energy sources can be set.
- High energy efficiency: up to 99.9% MPPT capture efficiency.
- Instant viewing of operation: the LCD panel displays data and settings ,while you can also be viewed using the app and webpage.
- Power saving: power saving mode automatically reduces power consumption at zero-load.
- Efficient heat dissipation: via intelligent adjustable speed fans
- Multiple safety protection functions: short circuit protection, overload protection, reverse polarity protection, and so on.
- under-voltage and over-voltage protection and reverse polarity protection.
- Supports up to 6 devices of the same model connected in parallel (forming a single-phase,split-phase,three-phase electrical system)

## Product characteristics



- |   |                              |
|---|------------------------------|
| ① Overload Protector                                    | ⑩ RS485-1 Communication Port |
| ② ON/OFF Rocker Switch                                  | ⑪ Dry Contact Port           |
| ③ AC Input Port   | ⑫ Cooling Fan                |
| ④ AC Output Port  | ⑬ Battery Port               |
| ⑤ Grounding Screw Hole                                  | ⑭ Cooling Fan                |
| ⑥ RS485-2 Communication Port (For BMS)                  | ⑮ PV Port                    |
| ⑦ Current Sharing Port (only apply to parallel modules) | ⑯ Light Touch Button         |
| ⑧ Communication Port (only apply to parallel modules)   | ⑰ Indicator Light            |
| ⑨ USB Communication Port                                | ⑱ LCD Screen                 |



## Parameters

Model	ZECO-HFP4850H80-S	Adjustable
<b>Battery Input</b>		
Battery type	Sealed, Flood, GEL, LFP, Ternary	✓
Rated Battery Input Voltage	48V ( Minimum Startup Voltage 44V)	
Hybrid Charging Maximum Charging Current	80A	✓
Battery Voltage Range	40Vdc~60Vdc ± 0.6Vdc(Undervoltage Warning/Shutdown Voltage/Overvoltage Warning/Overvoltage Recovery...)	✓
<b>Solar Input</b>		
Maximum PV Open-circuit Voltage	500vdc	
PV Working Voltage Range	120-500Vdc	
MPPT Voltage Range	120-450Vdc	
Maximum PV Input Current	22A	
Maximum PV Input Power	5500W	
Maximum PV Charging Current	80A	✓
<b>AC Input (generator/grid)</b>		
Mains Maximum Charging Current	60A	✓
Rated Input Voltage	220/230Vac	
Input Voltage Range	UPS Mains Mode: (170Vac~280Vac)±2% APL Generator Mode: (90Vac~280Vac)±2%	✓
Frequency	50Hz/ 60Hz (Automatic Detection)	
Mains Charging Efficiency	>95%	
Switch Time (bypass and inverter)	10ms(Typical Value)	
Maximum Bypass Overload Current	40A	
<b>AC Output</b>		
Output Voltage Waveform	Pure Sine Wave	
Rated Output Voltage	230 (200/208/220/240Vac)	✓
Rated Output Power	5000 (4350/4500/4750/5000VA)	
Rated Output Power	5000 (4350/4500/4750/5000W)	
Peak Power	10000VA	
On-load Motor Capacity	4HP	
Output Frequency Range(Hz)	50Hz ± 0.3Hz/60Hz ± 0.3Hz	✓
Maximum Efficiency	>92%	
No-load Loss	Non Energy-saving Mode: ≤50W Energy-saving Mode: ≤25W (Manual Setup)	
<b>General</b>		
Number of parallel/split phases	1-6PCS	
Certificate	CE(IEC62109-1)/CETL(UL 1741 C22.2 NO.107.1)	
EMC Certification Level	EN61000, C2	
Working Temperature Range	-15°C ~ 55°C	
Storage Temperature Range	-25°C ~ 60°C	
Humidity Range	5% to 95%(Conformal Coating Protection)	
Dimensions	426mm*322mm*124mm	
Weight	10.5 KG	

# IP65 Single-phase ESS hybrid inverter-5.5KW

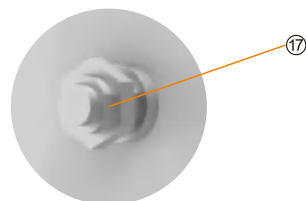
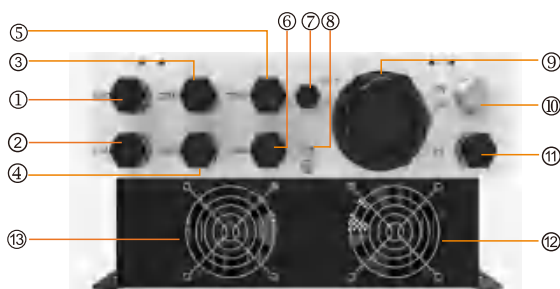
HES48V-H High Voltage Series(Max.Voc: 500V; Rated input voltage: 220/230V)



## Performance characteristics

- .It has the function of segmented charging and discharging.
- .Backflow prevention and grid connection function.
- .Insulation resistance and leakage current detection function.
- .Working without battery under special conditions.
- .Lithium battery activation function, which can be triggered by mains or PV.
- .Power saving mode, reduce no-load loss.
- .Four charging modes: PV Only, Mains Priority, PV Priority and PV&Mains hybrid charging.
- .Two output modes: mains bypass and inverter output, with UPS function.
- .360° all-round protection.
- .Allow lead-acid battery and lithium battery access.
- .ON/OFF switch controls the inverter AC output
- .Grid-connected mode can be set.
- .Adopting full-digital double closed loop control, combined with advanced SPWM technology and pure sine wave output.
- .Advanced MPPT technology with efficiency of 99.9%. LCD screen and three LED indicator lights can clearly indicate the status and data.
- .Intelligent and variable-speed fan, efficiently dissipate heat and extend system life.
- .Multiple safety protection functions: short circuit protection, overload protection, reverse polarity protection and soon.

## Product characteristics



① AC Input Port	⑩ On/off switch
② AC Input Port	⑪ pv port
③ Communication Port 1	⑫ Cooling fan
④ Communication Port 2	⑬
⑤ Communication Port 3	⑭ Light Touch Button
⑥ Communication Port 4	⑮ Indicator Light
⑦ Vent Valve	⑯ LCD Screen
⑧ Grounding Screw Hole	⑰ Overload Protector
⑨ Battery Input Port	

## Parameters

Model	ZECO-HES4855H100-S	Adjustable
<b>Battery Input Parameters</b>		
Battery Type	Lead-acid Battery or Lithium Battery	✓
Rated Battery Input Voltage	48V ( Minimum Startup Voltage 44V)	
Hybrid Charging Maximum Charging Current	100A	✓
Battery Voltage Range	40Vdc~60Vdc ± 0.6Vdc(Undervoltage Warning/Shutdown Voltage/Overvoltage Warning/Overvoltage Recovery...)	✓
<b>Solar Input Parameters</b>		
Maximum PV Open-circuit Voltage	500Vdc	
PV Working Voltage Range	120-500Vdc	
MPPT Voltage Range	120-450Vdc	
Maximum PV Input Current	22A	
Maximum PV Input Power	6000W	
Maximum PV Charging Current	100A	✓
<b>Mains Input Parameters</b>		
Mains Maximum Charging Current	60A	✓
Rated Input Voltage	220/230Vac	
Input Voltage Range	UPS Mains Mode : (170Vac~280Vac)±2% APL Generator Mode: (90Vac~280Vac) ±2%	✓
Frequency	50Hz/ 60Hz (Automatic Detection)	
Mains Charging Efficiency	>95%	
Switch Time (bypass and inverter)	10ms(Typical Value)	
Maximum Bypass Overload Current	40A	
<b>AC Output Parameter</b>		
Output Voltage Waveform	Pure Sine Wave	
Rated Output Voltage	230 (200/208/220/240Vac)	✓
Rated Output Power	5500 (4780/4970/5260/5500VA)	
Rated Output Power	5500 (4780/4970/5260/5500W)	
Peak Power	11000VA	
On-load Motor Capacity	4HP	
Output Frequency Range(Hz)	50Hz±0.3Hz/60Hz±0.3Hz	✓
Maximum Efficiency	>90%	
No-load Loss	Non Energy-saving Mode: ≤100W Energy-saving Mode: ≤50W (Manual Setup)	
<b>Basic Parameters</b>		
Certificate	CE(IEC 62109-1)	
EMC Certification Level	EN61000	
Working Temperature Range	-25°C ~ 55°C,>45°C Derating	
Storage Temperature Range	-25°C ~ 60°C	
Humidity Range	0% to 100%	
Waterproof Grade	IP65	
Dimensions	556mm*345mm*182mm	
Weight	20 KG	

# Single-phase ESS hybrid inverter

## -5 KW & 8KW & 10KW

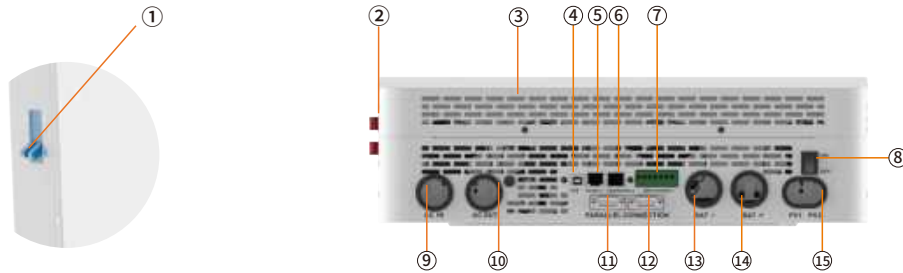
SF48V-H High Voltage Series(Max.Voc: 500V; Rated input voltage: 120/240V)

### Performance characteristics

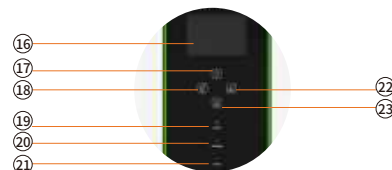


- Dual MPPT with up to 99.9% efficiency
- Up to 22A PV input current perfect for high power modules
- Outputs high quality pure sine wave AC power
- 8-10kW load power to meet the needs of most households
- Industrial design with a modern aesthetic look
- Easy to install and simple to use
- 360 degrees of security from hardware to software
- EU and North American safety approvals
- Solar Charger Controller up to 200A charging current
- Support for Li-ion battery BMS communication
- Exclusive Li-ion battery BMS dual activation
- Time-slot function to save cost with peak-valley tariff

### Product characteristics



- |                        |                      |            |
|------------------------|----------------------|------------|
| ① Overload Protector   | ⑨ AC IN              | ⑰ UP       |
| ② ON/OFF Rocker Switch | ⑩ AC OUT             | ⑱ SET      |
| ③ Cooling fan          | ⑪ PARALLEL           | ⑲ AC / INV |
| ④ USB                  | ⑫ CONNECTION         | ⑳ CHARGE   |
| ⑤ RS485-1              | ⑬ BAT -              | ㉑ FAULT    |
| ⑥ CAN RS485-2          | ⑭ BAT +              | ㉒ ENTER    |
| ⑦ DRY CONNECT          | ⑮ PV1 PV2            | ㉓ DOWN     |
| ⑧ ON / OFF             | ⑯ LED Display Screen |            |



### Parameters

MODEL	ZECO-HYP4850H100-U	ZECO-SF4880H200-U	ZECO-SF48100H200-U	CANBE SET
<b>INVERTER OUT PUT</b>				
Rated Output Power	5,000W	8,000W	10,000W	
Max. Peak Power	10000VA	16,000VA	16,000VA	
Rated Output Voltage	120Vac (L1/L2/N/PE split phase)	120/240Vac (L1/L2/N/PE split phase)		Y
Load Capacity of Motors	4HP	5HP	6HP	
Rated AC Frequency	50/60Hz			Y
Waveform	Pure Sine Wave			
Switch Time	10ms (typical)			
Parallel capacity	1-6 units (single/three phase)			
<b>BATTERY</b>				
Battery Type	Li-ion / Lead-Acid / User Defined			Y
Rated Battery Voltage	48Vdc			
Voltage Range	40-60Vdc			Y
Max. MPPT Charging Current	100A	200A		Y
Max. Mains/Generator Charging Current	40A	100A	120A	Y
Max. Hybrid Charging Current	100A	180A	200A	Y
<b>PV INPUT</b>				
Num. of MPP Trackers	1	2		
Max. PV array power	5500W	11,000W		
Max. input current	22/22A			
Max. Voltage of Open Circuit	500Vdc			
MPPT Voltage Range	125-425Vdc			
<b>MAINS/GENERATOR INPUT</b>				
Input Voltage Range	90-140Vac			
Frequency Range	50/60Hz			
Bypass Overload Current	63A			
<b>EFFICIENCY</b>				
MPPT Tracking Efficiency	99.9%			
Max. Battery Inverter Efficiency	92%			
<b>GENERAL</b>				
Dimensions	446.9*350*133mm (2*1.4*0.4ft)	620*435*130mm (2*1.4*0.4ft)		
Weight	13kg (28.6lb)	20kg (44lb)	21kg (46.3lb)	
Protection Degree	IP20, IndoorOnly			
Operating Temperature Range	-15~55 °C, >45 °C derated (5~131 °F, >113 °F derated)			
Noise	<60dB			
Cooling Method	InternalFan			
Warranty	2Years			
<b>COMMUNICATION</b>				
Embedded Interfaces	RS485/CAN/USB/Drycontact			Y
External Modules (Optional)	Wi-Fi/GPRS			Y
<b>CERTIFICATION</b>				
Safety	IEC62109-1, IEC62109-2, UL1741			
EMC	EN61000-6-1, EN61000-6-3, FCC15classB			
RoHS	Yes			

# Three phase ESS hybrid inverter - IP65 -8.8KW & 11KW & 13.2KW

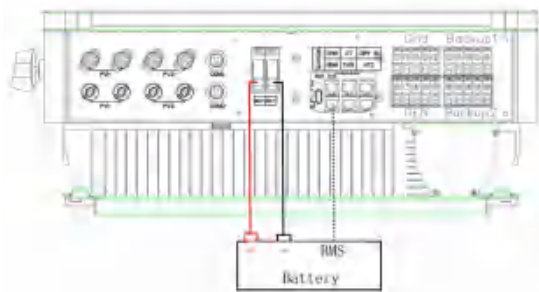
KH3 High Voltage Series(Max.Voc: 1000V; Rated input voltage: 360~440V)



## Performance characteristics

- Compatible with lead-acid and lithium-ion batteries;
- Support diesel generator input source;
- IP65 protection, low noise < 35dB;
- Battery reverse connection protection, anti-power control function
- Input power source priority can be set by users;
- Support full power discharge, automatic management of battery charge and discharge;

## Product characteristics



Function	Label	Description
PV string 1 Input port	PV1+	PV string 1 positive input
	PV1-	PV string 1 negative input
	PV2+	PV string 2 positive input
	PV2-	PV string 2 negative input
Communication interface	COM1	GPRS port(optional)
	COM2	WiFi port(optional)
BAT Port	BAT+	Battery Positive input
	BAT-	Battery negative input
Signal line interface	UPDATE	Upgrading software Ports
	DRM	Function temporarily retained
	CT	Connect to CT (current transformer)
	DRY IO	Dry contact
	BMS	BMS communication to Battery
	CAN	CAN Communication
	NTC	NTC detection

Category	Terminal	Description
Grid	①	Grid line A phase
	②	Grid line B phase
	③	Grid line C phase
	④	Grid line null line
	⑤	Grid line ground electrode
GEN	⑥	A phase
	⑦	B phase
	⑧	C phase
	⑨	Null line
	⑩	Ground electrode

Category	Terminal	Description
Backup1	⑪	Backup1 line A phase
	⑫	Backup1 line B phase
	⑬	Backup1 line C phase
	⑭	Backup1 line null line
	⑮	Backup1 line ground electrode
Backup2	⑯	Backup2 line A phase
	⑰	Backup2 line B phase
	⑱	Backup2 line C phase
	⑲	Backup2 line Null line
	⑳	Backup2 line Ground electrode

## Parameters

Technical specification	ZECO-R8KH3	ZECO-R10KH3	ZECO-R12KH3
<b>Input (PV)</b>			
Max.power(kW)	10.4	13	15.6
Max. DC voltage(V)		1,000	
MPPT voltage range(V)		180~850	
Max.input current of single MPPT(A)		12.5	
MPPT tracker/strings	2/1	2/1	2/1
<b>AC output</b>			
Rated output power(kVA)	8.8	11	13.2
Max. output current(A)	12.7	15.9	19.1
Grid voltage/range(V)		400/360~440	
Frequency (Hz)		50 /60	
Power factor		0.8lagging-0.8leading	
THDi		<3%	
AC output topology		3W+N+PE	
<b>Battery</b>			
Battery voltage range(V)		125~600	
Max. charging voltage(V)		600	
Full battery voltage(V)	210	270	250
Max. charge/discharge current(A)	40	40	50
Battery type		lithium /Lead-acid	
Communication Interface		CAN/RS485	
<b>EPS output</b>			
Rated power(kVA)	8.8	11	13.2
Rated output voltage(V)		400	
Max. output current(A)	12.7	15.9	19.1
Rated frequency(Hz)		50 /60	
Automatic switching time(ms)		<20	
THDu		<2%	
Overload capacity		110%, 30S/120%, 10S/150%, 0.02S	
<b>General data</b>			
Battery charge / discharge efficiency	96.6%	96.7%	96.8%
DC Max. efficiency	97.9%	98.2%	98.2%
Europe efficienc	97.2%	97.5%	97.5%
MPPT efficiency	99.5%	99.5%	99.5%
Ingress protection		IP65	
Noise emission(dB)		<35	
Operation temperature		-25 C ~ 60 C	
Cooling		Natural	
Relative Humidity		0 ~95% (non-condensing)	
Altitude		2000m (>2000 Derating)	
Dimensions W*D*H(mm)		530*200*600	
Weight(kg)		29	
Isolation transformer		No	
Self-consumption(W)		<3	
<b>Display and communication</b>			
Display		LCD	
Interface:RS485/Wifi/4G/ CAN/DRM		Yes/ Opt/ Opt/ Yes/ Yes	
Safety standard		IEC/EN62109-1/-2, IEC/EN62477-1	
EMC		IEC/EN 61000-6-1, IEC/EN 61000-6-3	
On-grid		Europe: EN50549-1, Germany: VDE4105/0124, UK: G99, South Africa: NRS097-2-1:2017	