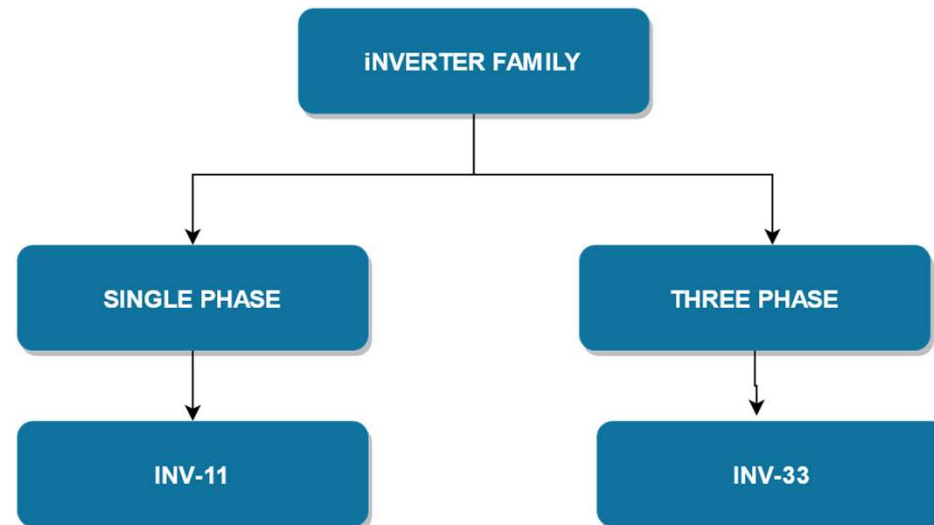


# PESS INVERTER FAMILY

Special Features  
Block and SLD Diagrams  
Technical Specifications

# INVERTER FAMILY



# INVERTER Products



< 50 kVA

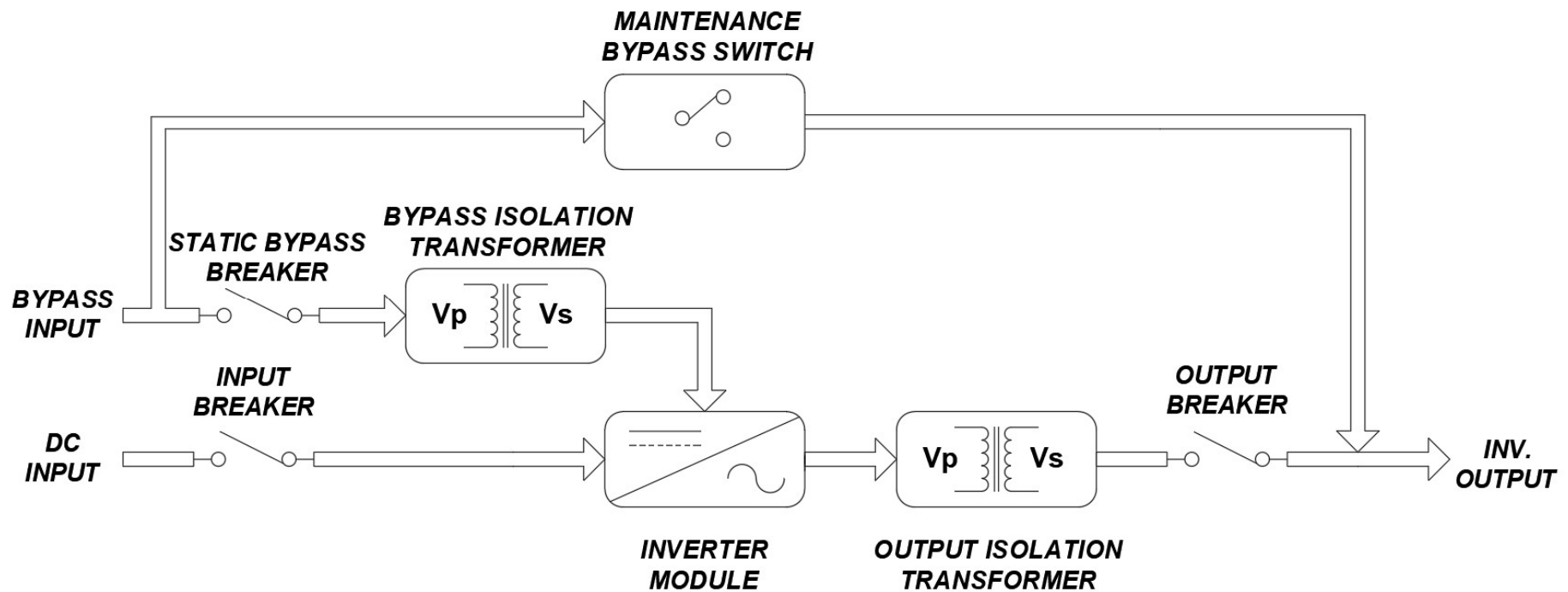


> 50 kVA

# Special Features

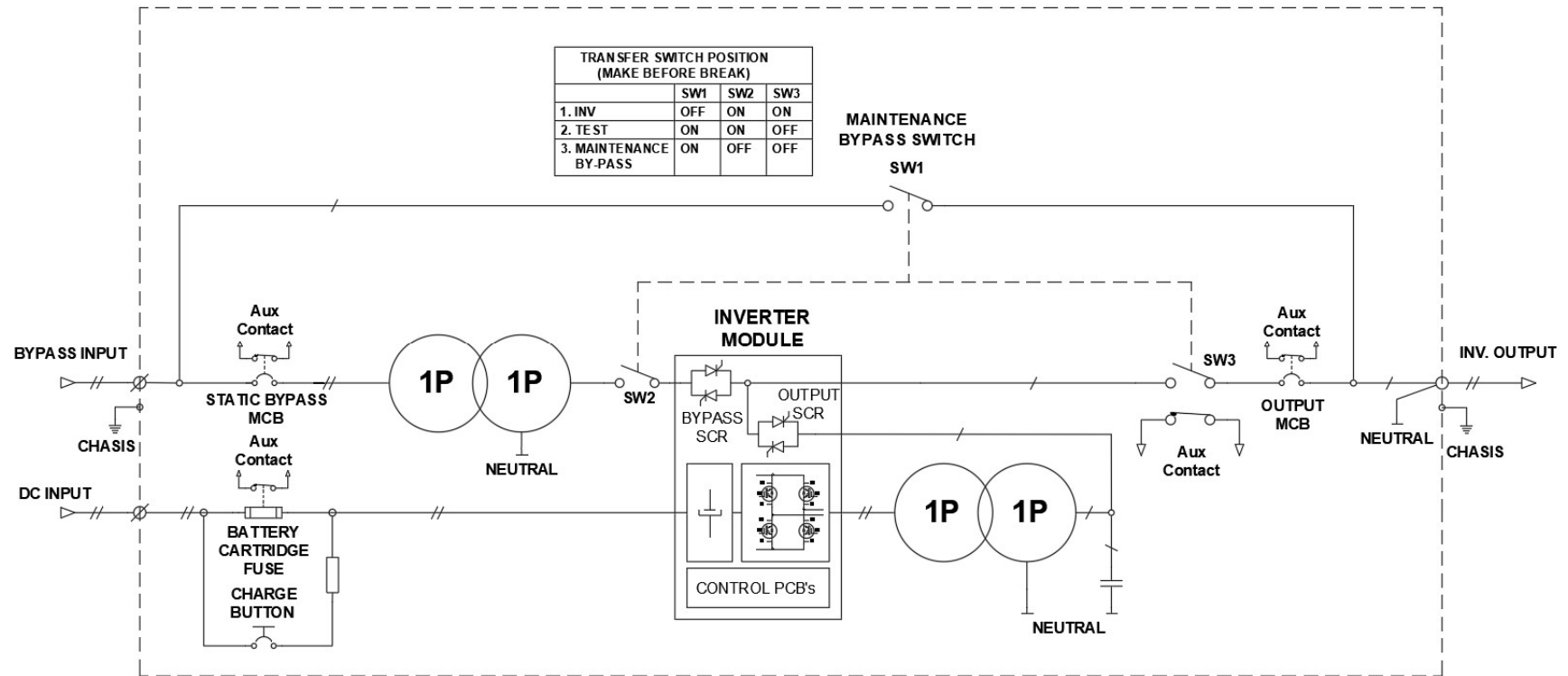
- ❖ High efficiency power conversation with new generation IGBT and SCR modules.
- ❖ User friendly HMI (Human Machine Interface) front panel with indicator LEDs
- ❖ Automation and alarm relay output
- ❖ RS232 communication and special PC control software
- ❖ PC software calibration
- ❖ Event history
- ❖ Bypass input isolation and regulation

# INVERTER Block Diagram



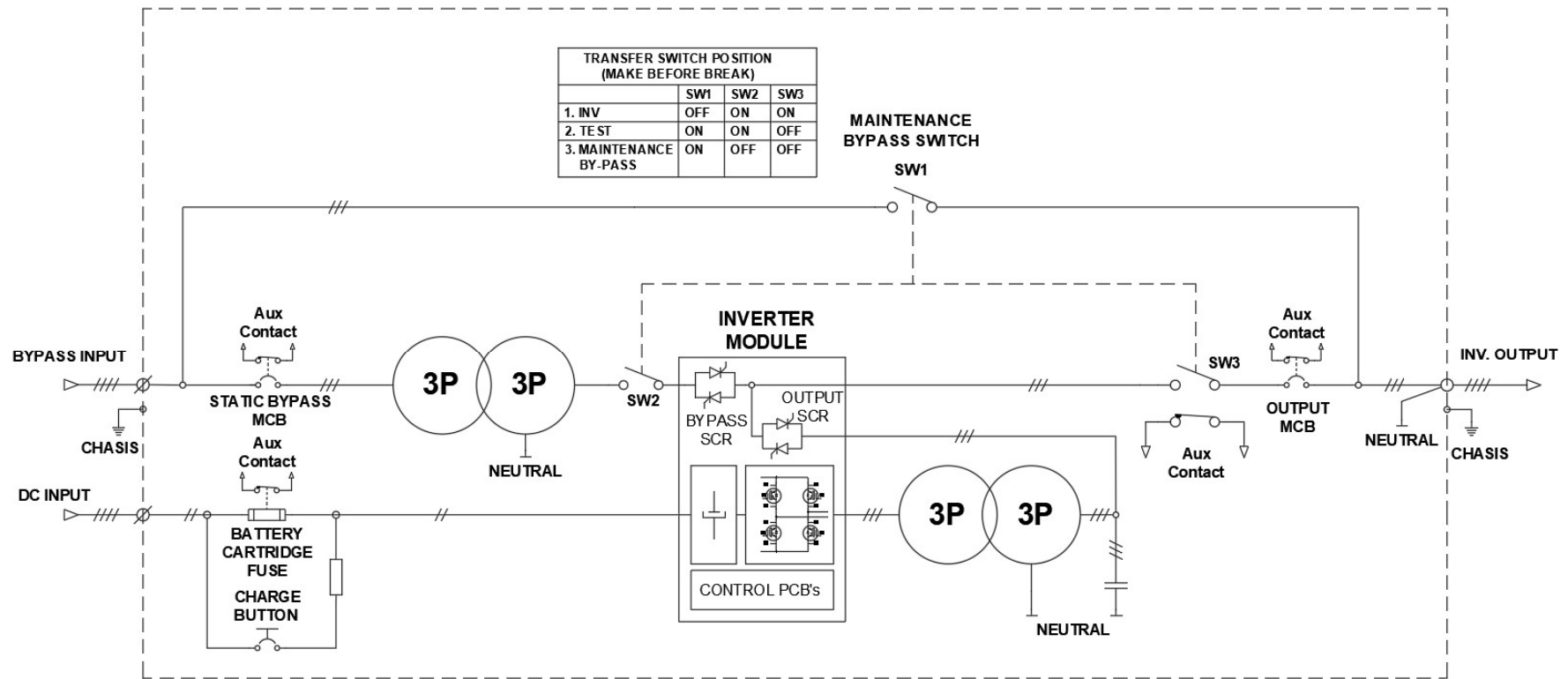
\* This drawing belongs to the general scheme. It may vary in special designs. PESS company reserves the right to make changes to the drawings.

# INV-11 Single Line Diagram



\* This drawing belongs to the general scheme. It may vary in special designs. PESS company reserves the right to make changes to the drawings.

# INV-33 Single Line Diagram



\* This drawing belongs to the general scheme. It may vary in special designs. PESS company reserves the right to make changes to the drawings.

# INV-11 Technical Specifications

<b>kVA Ratings</b>	<b>5 / 10 / 15 / 20 / 25 / 30</b>
<b>Input characteristics</b>	
<b>Rated input voltage</b>	110 / 125 / 144 / 220 / 360 VDC, 2-wire
<b>Input voltage range</b>	-15% ~ + 15%
<b>Battery type</b>	Lead Acid, Ni-Cad, Gel, AGM
<b>Bypass</b>	
<b>Bypass input voltage</b>	1 PH 110 / 120 / 220 / 230 / 240 VAC
<b>Bypass frequency range</b>	-5% ~ + 5%
<b>Bypass voltage range</b>	-10% ~ + 10%
<b>Maintenance bypass switch</b>	Make before break maintenance switch
<b>Static switch</b>	
<b>Frequency</b>	50Hz/60Hz
<b>Frequency synchronization</b>	± 5% Hz
<b>Overload capacity</b>	100% 10min, 110% 1min, 125% 10 sec, 150% 1sec, 300% 1 msec



# INV-11 Technical Specifications

<b>Inverter output voltage</b>	<b>1 PH 110 / 120 / 220 / 230 / 240 VAC (5-30kVA)</b>	
<b>Output power factor</b>	0.8	
<b>Voltage stability</b>	Steady state	<± 1%
	Transient (20-100%)	<±10%
<b>Transient response time</b>	(20-150) ms	
<b>Inverter overload capacity</b>	100% 10min, 110% 1min, 125% 10 sec, 150% 1sec, 300% 1 msec	
<b>THDv</b>	100% linear load	3%
	100% non-linear load	8%
<b>Efficiency</b>	up to 90% (depends on power rating)	
<b>System</b>		
<b>Noise</b>	53~70dB	
<b>Ingress Protection</b>	IP20 up to IP54	
<b>Color</b>	RAL7035, other color is optional	
<b>Cable entry</b>	Bottom (top cable entry as option)	
<b>HMI software</b>	It can be download from webpage	
<b>Communication interface</b>	MODBUS RTU RS485 (SNMP, IEC61850, MODBUS TCP option)	
<b>Free contacts</b>	Programmable 8 dry contacts	

# INV-11 Battery

Inverter Model	5	10	15	20	25	30	kVA
Output Rated Power	4	8	12	16	20	24	kW
Min/Max Number of 12V Battery Blocks @ PF=1.0	12						QTY
Maximum Inverter Current (220 VAC)	18	36	54	72	90	110	A
Battery Charging Curve	Ripple free; IU (DIN 41773)						
Temperature compensation ready	Standard (temp. sensor optional)						
Battery Type	Maintenance free VRLA or NiCd						

# INV-33 Technical Specifications

<b>kVA Ratings</b>	<b>20 / 30 / 40 / 50 / 60 / 80 / 100 / 120 /160/ 200</b>
<b>Input characteristics</b>	
<b>Rated input voltage</b>	110 / 125 / 144 / 220 / 360 VDC, 2-wire
<b>Input voltage range</b>	-15% ~ + 15%
<b>Battery type</b>	Lead Acid, Ni-Cad, Gel, AGM
<b>Bypass</b>	
<b>Bypass input voltage</b>	1 PH 110 / 120 / 220 / 230 / 240 VAC
<b>Bypass frequency range</b>	-5% ~ + 5%
<b>Bypass voltage range</b>	-10% ~ + 10%
<b>Maintenance bypass switch</b>	Make before break maintenance switch
<b>Static switch</b>	
<b>Frequency</b>	50Hz/60Hz
<b>Frequency synchronization</b>	± 5% Hz
<b>Overload capacity</b>	100% 10min, 110% 1min, 125% 10 sec, 150% 1sec, 300% 1 msec

# INV-33 Technical Specifications

<b>Inverter output voltage</b>		<b>3 PH 380 / 400 / 415 VAC (20-200kVA)</b>
<b>Output power factor</b>		0.8
<b>Voltage stability</b>	Steady state	<± 1%
	Transient (20-100%)	<±10%
<b>Transient response time</b>		(20-150) ms
<b>Inverter overload capacity</b>		100% 10min, 110% 1min, 125% 10 sec, 150% 1sec, 300% 1 msec
<b>THDv</b>	100% linear load	3%
	100% non-linear load	8%
<b>Efficiency</b>		up to 90% (depends on power rating)
<b>System</b>		
<b>Noise</b>		53~70dB
<b>Ingress Protection</b>		IP20 up to IP54
<b>Color</b>		RAL7035, other color is optional
<b>Cable entry</b>		Bottom (top cable entry as option)
<b>HMI</b>		It can be download from webpage
<b>Communication interface</b>		MODBUS RTU RS485 (SNMP, IEC61850, MODBUS TCP option)
<b>Free contacts</b>		Programmable 8 dry contacts

# INV-33 Battery

Inverter Model	20	30	40	50	60	80	100	120	160	200	kW
Output Rated Power	16	24	32	40	48	64	80	96	128	160	kW
Min/Max Number of 12V Battery Blocks @ PF=1.0	30								32		QTY
Maximum Inverter Current (380 VAC)	24	36	50	60	73	97	121	146	194	243	A
Battery Charging Curve	Ripple free; IU (DIN 41773)										
Temperature compensation ready	Standard (temp. sensor optional)										
Battery Type	Maintenance free VRLA or NiCd										

# Quality Certificates



# Company Contact Informations

## COMPANY

PESS ENERJİ TEKNOLOJİLERİ LİMİTED ŞİRKETİ

PESS POWER ELECTRONIC SYSTEM SOLUTIONS  
LIMITED COMPANY

## INFO:

E-mail: [info@pess-energy.com](mailto:info@pess-energy.com)

## SALES, MARKETING, MANUFACTURING

PLANT AND R&D:

Kentkoop Mah. 1859 Cad. Hamlekent Sitesi No:39 B  
06370 Yenimahalle / ANKARA / TURKEY

## WEB:

[www.pess-energy.com](http://www.pess-energy.com)  
[www.pesspower.com](http://www.pesspower.com)