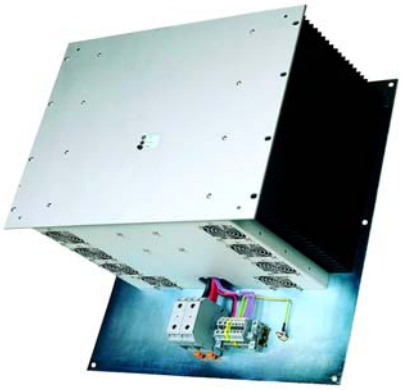
Series PCI + PIT

Series [VDC]	PCI5728 U_{IN} 20 – 32	PIT5738 U_{IN} 40 – 64	PIT5748 U_{IN} 50 – 80	PIT5658 U_{IN} 80 – 160	PIT5678 U_{IN} 160-320
Power	3000VA	3000VA	3000VA	3000VA	3000VA

Serie [VDC]	PCI5728 U_{IN} 20 – 32	PCI5738 U_{IN} 40 – 64	PCI5748 U_{IN} 50 – 80	PCI5758 U_{IN} 80 – 160	PCI5778 U_{IN} 160-320
Power	3000VA	3500VA	3500VA	3500VA	3500VA

19“- Subrack

Wall Mount W



Type designation example for:

- Inverter PIT5658, Input 80-160VDC, Power 3000VA
  19“-Subrack
  PIT5678
- Inverter PIT5658, Input 80-160VDC, Power 3000VA
  Wall mount
  PIT5678W

Series PIT 19“- Cabinet G10

Series [VDC]	PIT5678G10 U_{IN} 160-320
Power	5000VA
Series [VDC]	**PIT5778G10** U_{IN} 160-320
Power	8000VA
Series [VDC]	**PIT5878G10** U_{IN} 160-320
Power	10000VA

Technical data

Input

Voltage	s. tabulation on top
Input fuse	external required[1)]
Ripple allowed	5% rms
EMC- Surges	acc. EN 61000-4-5 gradient 3
EMC- Bursts	acc. EN 61000-4-4 gradient 3
Softstart	0,5s typ.
RFI	acc. EN 55011

Output

Voltage	230VAC single phase, sinusoidal (115VAC, 240VAC possible)
Voltage range	210 - 240VAC adjustable
Regulation	static ±2%
	dynamic ±5% / 2ms 0<->100% load step
Frequency	50 Hz ±0,1% crystal stabilized (60Hz, 400Hz on request)
Power	s. tabulation on top
Over load	100% for 1s
Inrush current limiting	NTC's optional
Distortion	< 5% at cosφ 1
Crest factor	3 permitted
Power factor	0,8 ind.to 0,9 cap. permitted
Over load-/ short circuit prot.	electronic
RFI	acc. EN 55011 class A

Indicators, Alarm

LED - Indicator	green = operation
External Alarm	potential free change over contact with 30VDC / 2A for alarm: output voltage <200VAC

Control elements

Inhibit	external, remote ON / OFF

General

Operating temperature	-10 °C to +45 °C
Storage temperature	-30 °C to +70 °C
Relative humidity	75%, without condensation
Cooling	unhindered natural convection
Mechanical protection	IP20
Efficiency	app. 85%
EMC	acc. EN 61000-6-4 / EN 61000-6-2
Isolation	Input / Output 3500VDC for 1 min. Input / Output / Case 2100VDC for 1 min.

Construction

19"-Subrack Series PIT

Dimensions	H = 6HE W = 19" D = appr. 460mm
Connection	Terminals at the rear side
Weight	appr. 50Kg

19"-Subrack Series PCI

Dimensions	H = 6HE W = 19" D = appr. 460mm
Connection	Terminals at the rear side
Weight	appr. 30Kg

Wall mount „W „Series PIT

Dimensions appr.	H = 600mm W = 500mm D = 310mm
Connection	Terminals
Weight	appr. 56Kg

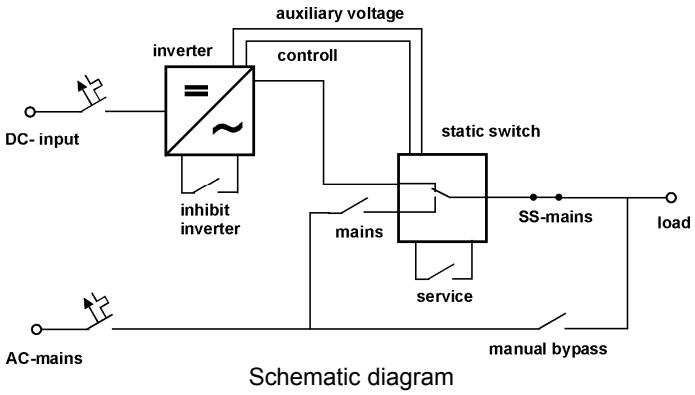
Wall mount „W“ Series PCI

Dimensions appr.	H = 600mm W = 500mm D = 310mm
Connection	Terminals
Weight	appr. 36Kg

19“-Cabinet G10

Dimensions appr..	W = 600mm D = 600mm H = 1150mm RAL 7035
Cable inlett	from bottom
Connections	Terminal inside
Cooling	forced cooling by fans

Example: Inverter PIT5778-SS-MSG10 with MCB`s



Schematic diagram

General Description

PIT- Series

Figure 1 shows the connection of a switchmode inverter and a transformer.

Figure 1

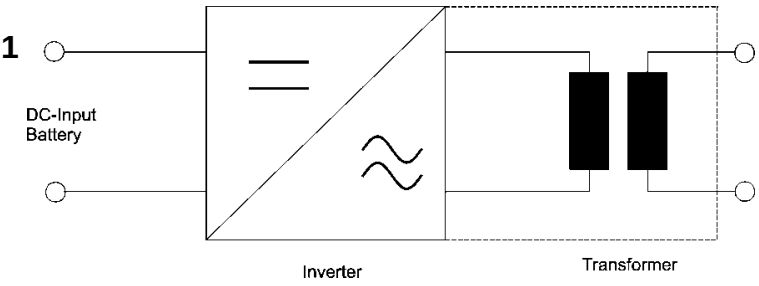


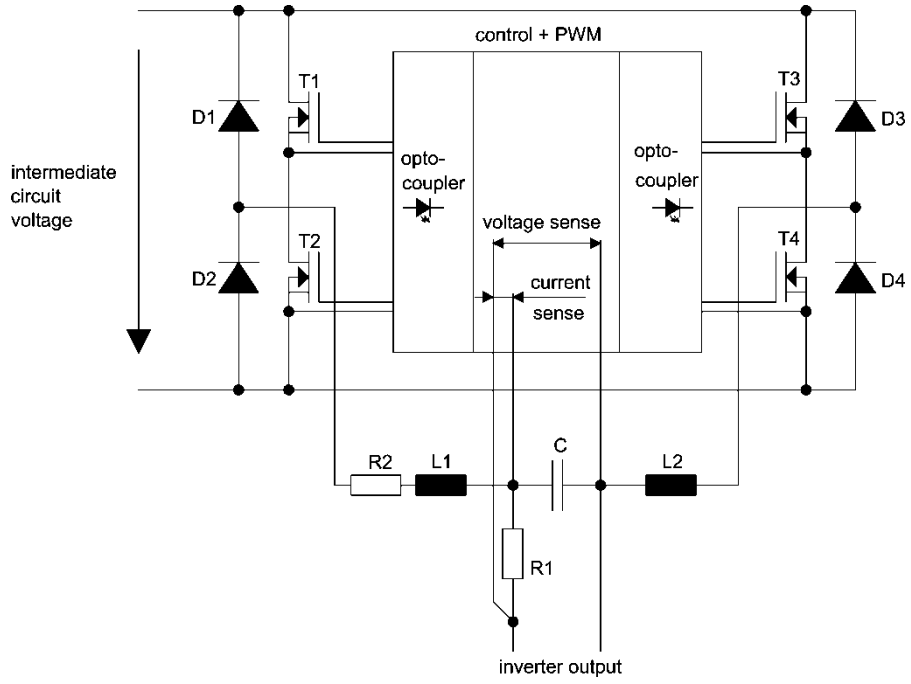
Figure 2 shows the circuit of the inverter:

The intermediate circuit voltage (DC-input voltage) is transformed by the power transistor T1-T4 with the parallel inverse diodes D1-D4 in a pulse - width square-wave voltage. The choke with the windings L1 and L2 integrates this voltage, and at the capacitor C there is a sinusoidal output voltage.

The power transistors are controlled by the opto-coupler, making sure, that not both transistors of one branch are switched on at the same time by the control pulses. The output voltage is connected via sense leads to the control circuit and controls, after a comparison with a reference, the control pulses for the power transistors. The voltage drop of the output current at shunt R1 is also supplied to the control circuit and serves for current limiting.

Alternating voltage at the output of the inverter is transformed by means of a transformer to the requested output voltage with galvanic isolation.

Figure 2



General Description

PCI- Series

Figure 1 shows the connection of a DC/DC converter with a switch-mode inverter.

The DC/DC converter transforms the normally low battery voltage to the high intermediate circuit voltage at the input of the inverter and provides the required electrical isolation between the AC-output and the battery. The inter-mediate circuit voltage must be higher than the value peak of the output voltage of the inverter and is thus fixed to approximately 400V at a requested output voltage of 220 / 240V.

Figure 1

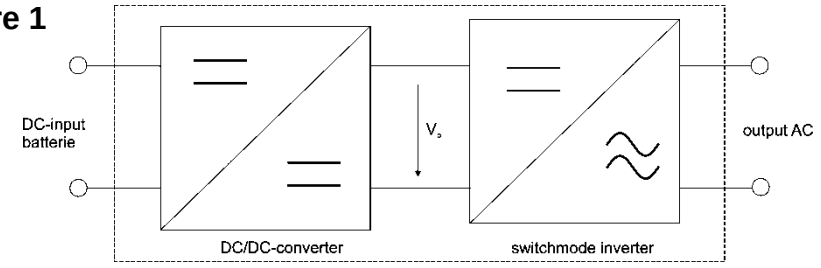
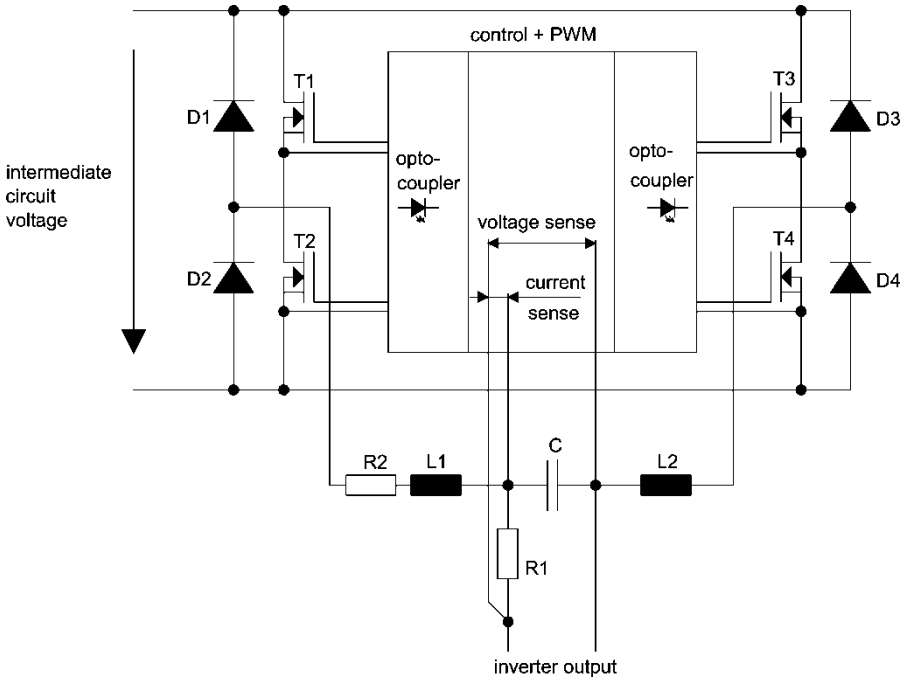


Figure 2 shows the circuit of the inverter:

The intermediate circuit voltage (DC-input voltage) is transformed by the power transistors T1-T4 with the parallel inverse diodes D1-D4 in a pulse-width square-wave voltage. The choke with the windings LI and LII integrates this voltage, and at the capacitor C there is a sinusoidal output voltage. The power transistors are controlled by opto-coupler, making sure, that not both transistors of one branch are switched on at the same time by the control pulses. The output voltage is connected via sense leads to the control circuit and controls after a comparison with a reference the control pulses for the power transistors. The voltage drop of the output current at shunt R1 is also supplied to the control circuit and serves for current limiting.

Figure 2



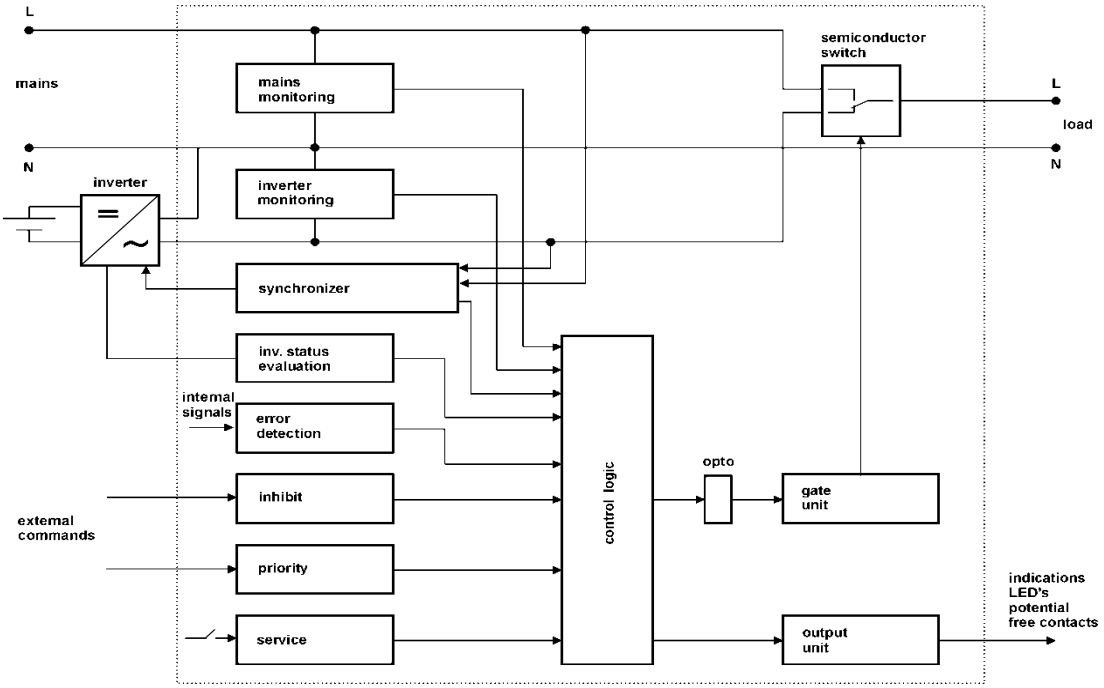
General Description

Static Switch

The static switch transfers the AC supply to the load from the inverter or mains. It synchronizes the inverter to the mains frequency when mains voltage is present.
To achieve logically correct operation, the static switch monitors and evaluates:

- under- and over voltage of the mains
- under- and over voltage of the inverter
- short circuit at the output
- present mode of operation
- faults

To adapt the static switch to different requirements, it is possible to externally select (via an contact) priority for mains- or inverter operation, and the static switch can be turned off via another contact to disconnect the load. LED's and potential-free contacts indicate the mode of operation.
When priority for mains operation is selected and the mains voltage is present, the load is supplied from the mains. When mains failure occurs, the static switch transfers the load to the inverter which now runs at its own frequency. Upon return of the mains, the inverter is automatically synchronized to the mains again and the output load is transferred back to the mains without an interruption. When the priority for inverter operation is selected the inverter normally supplies the load and synchronised to the mains. If the sensing circuit detects a failure of the inverter output it transfers the load to the mains.



General Description

Manual switch

Switch Position 0	output disconnected:
Switch Position 1 (no permanent position)	mains is connected to the load via the static switch SS
Switch Position 2 (normal operation)	inverter is activated and connected. The function "service mains" is inactive and the static switch SS goes into normal operation. The inverter is synchronised with the mains by the static switch If the inverter output goes out of the tolerance, then the load is automatically connected to the mains with nearly no interruption.
Switch Position 3 (no permanent position)	in this position the mains is connected to the load via the static switch and simultaneously the manual bypass MS is activated.
Switch Position 4 (manual bypass)	in this position mains is connected to the load via the manual bypass. All the mains potentials to the static switch SS are disconnected. The inverter is blocked by the internal inhibit input. The output voltage is zero and only the auxiliary voltage and the control circuitry of the static switch are activated (hot stand-by).