

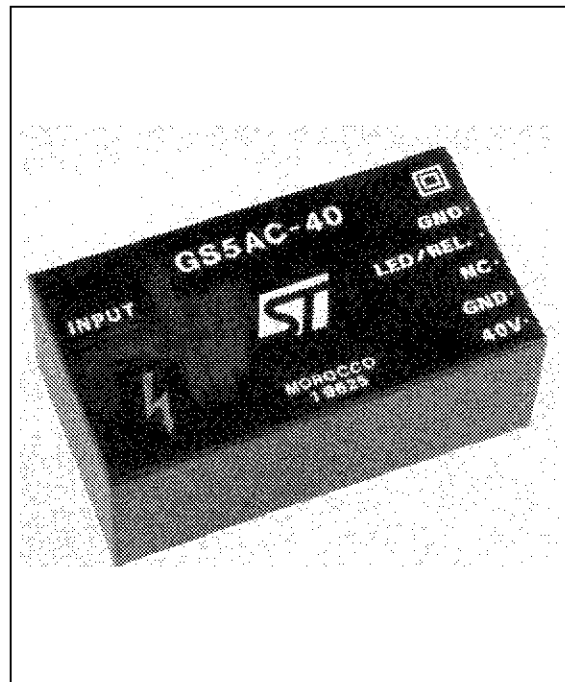
**ISDN AC-DC CONVERTER**

PRELIMINARY DATA

Type	V <sub>i</sub>	V <sub>o</sub>	I <sub>o</sub>
GS5AC-40	180 to 264 V	out 1: 40 V	110 mA
		out 2: 40 V	10 mA

**FEATURES**

- Large Input voltage range: 180 to 264 V<sub>RMS</sub>
- Input filter to meet EMI requirements
- Peak input overvoltage whitstanding
- Input fuse
- Input to output insulation
- 2 insulated outputs:
  - Vo1 = 35 to 42 V for "S" interface
  - Vo2 = 36 to 47 V for external relay and LED driver
- "S" interface output characteristics:
  - Peak output of 8 W for 150 ms
  - Typical output power: 4,5 W
  - Output filtering to meet ETSI requirements
  - Hold up time: 20 ms with 4,5 W output power
  - Continuous short circuit protection
  - Peak overvoltage withstand: 250 V for 10/700 μs
- Mechanical dimensions (LxWxH): 80x43x30 mm


**DESCRIPTION**

The GS5AC-40 converter has been designed for an ISDN-NTBA (Network Termination Basic Access) system with either 4B3T or 2B1Q standard trasmission.

The converter is able to deliver 40V/110 mA for "S" interface and is equipped also with a second, auxiliary 40V/10 mA output for relay and LED driving. The converter offers short-circuit protection on both outputs (short-circuit on 40V output doesn't affect relay/LED output and the input power never exceeds the limit of 15 W) and also provides to remove the auxiliary (relay & LED) output when the mains is missing, thus allowing the use of a second

"emergency" voltage source (relay contacts are released). 3000 V<sub>RMS</sub> insulation voltage for 60 seconds is provided between input and the outputs. Output 1 and Output 2 share the same common ground (pin 4 is internally connected with pin 6).

The design of the module has been conducted using, as reference standards, the following:

EN 60950, VDE0878 part 1 class B (EMC), EN55022 class B (EMC), CCITT 430, ETS 300 012 and ETS 300 047 (ISDN BASIC ACCESS, Safety and Protection); anyway, please note that no certification processes have been carried out on the module itself.

## GS5AC-40

### ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

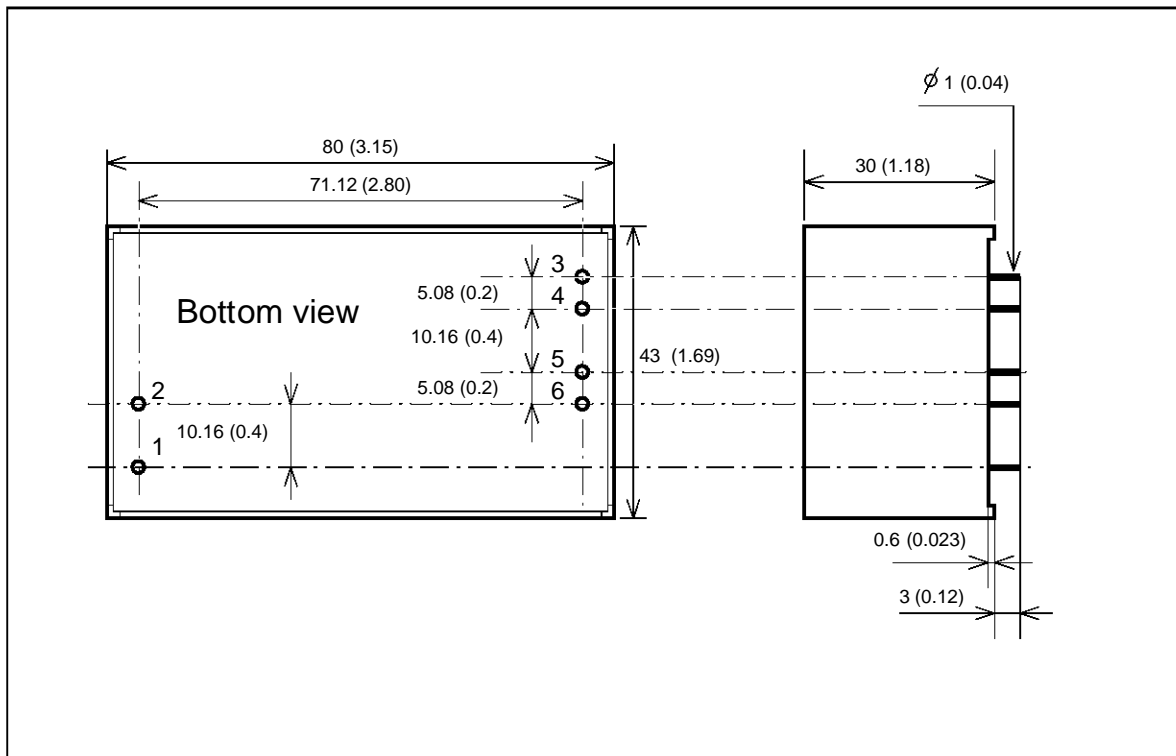
Std. Conditions:

$V_{in} = 180$  to  $264$   $V_{RMS}$

$P_{o1} = 0$  to  $4.5$   $W$     $I_{o2} = 0$  to  $10$   $mA$     $V_{o2} = 36$  to  $47$   $V$

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_i$	Input Voltage		180		264	$V_{RMS}$
$f_i$	Input Frequency	$V_i = 230$ $V_{RMS}$	43		56	Hz
$P_i$	Input Power	Standard Conditions		7		W
$P_i$	Input Power	Abnormal Conditions			15	W
$V_{ist}$	Start up Input Voltage	Output parameters as per Standard Conditions	100		150	$V_{RMS}$
$V_{o1}$	Output Voltage 1	Standard Conditions	36	38	42	V
$V_{o2}$	Output Voltage 2	Standard Conditions	36	38	47	V
$V_{o2}$	Output Voltage 2	Emergency Conditions	0		1	V
$V_{or1}$	Output Ripple Voltage 1	Standard Conditions BW: 0 - 20 MHz			100	m $V_{RMS}$
$I_{o1}$	Output Current 1	Standard Conditions	0		110	mA
$I_{oo1}$	Output Overcurrent	$t = 150$ ms, $V_{o1} = 35.5$ to $42$ V at Switch-On	180		250	mA
$I_{o1sc}$	Output 1 short circuit current		10	50	80	mA
$I_{o2}$	Output current 2	Standard Conditions	0		10	mA
$V_{o1pf}$	Power Fail $V_{o1}$ threshold	$V_{o2}$ fails below 1 V	35.5		36.5	V
$V_{ipf}$	Power Fail $V_i$ threshold	Output parameters as per Standard Conditions		150	180	$V_{RMS}$
$V_{ipk}$	Input Transient Overvoltage	$t = 10/700$ $\mu\text{s}$	2.5			kV
$V_{o1pk}$	Out 1 Transient Overvoltage	$t = 10/700$ $\mu\text{s}$	250			V
$V_{is}$	Insulation Voltage	Input to outputs, $t=60$ s	3000			$V_{RMS}$
$V_{is}$	Insulation Voltage (pulse)	Input to outputs, $t = 10/700$ $\mu\text{s}$ (pulse)	4			kV
$t_h$	Hold-up time	$V_{in} = 180$ $V_{RMS}$ Loads as per Std. Conditions	20			ms
MTBF	Mean Time Before Failure	Ground Fixed, MIL-HDBK-217E	1			Mhours
$T_{op}$	Operating Ambient Temperature Range		-5		+70	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature Range		- 40		+85	$^{\circ}\text{C}$

Figure 1. Connection diagram and mechanical data

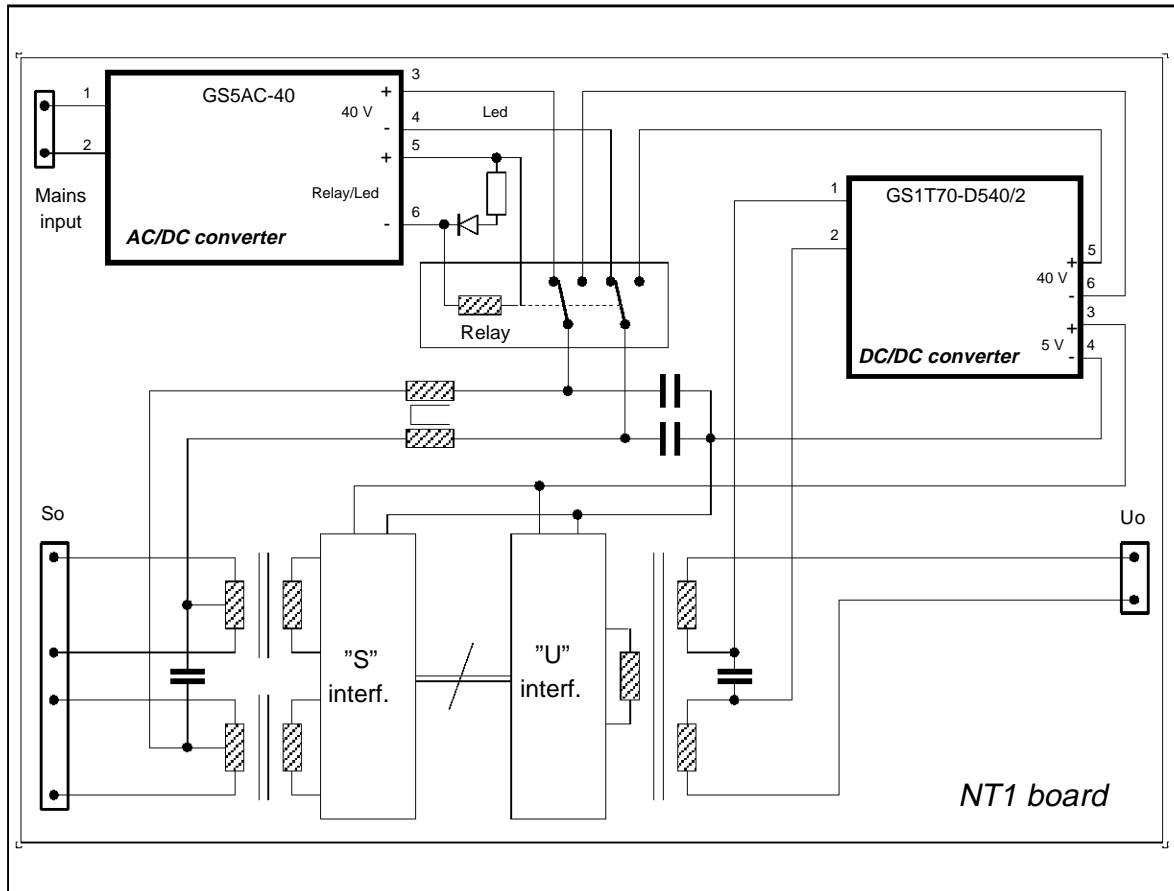


## PIN DESCRIPTION

Pin	Function	Description
1	AC Input	Mains input
2	AC Input	Mains input
3	+Vo1	+ 40 V Output for "S" interface
4 & 6	- Vo1 & -Vo2	Output Common Ground
5	+ Vo2	+ External Relay & LED driver

**GS5AC-40**

**Figure 2.** Typical application example



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