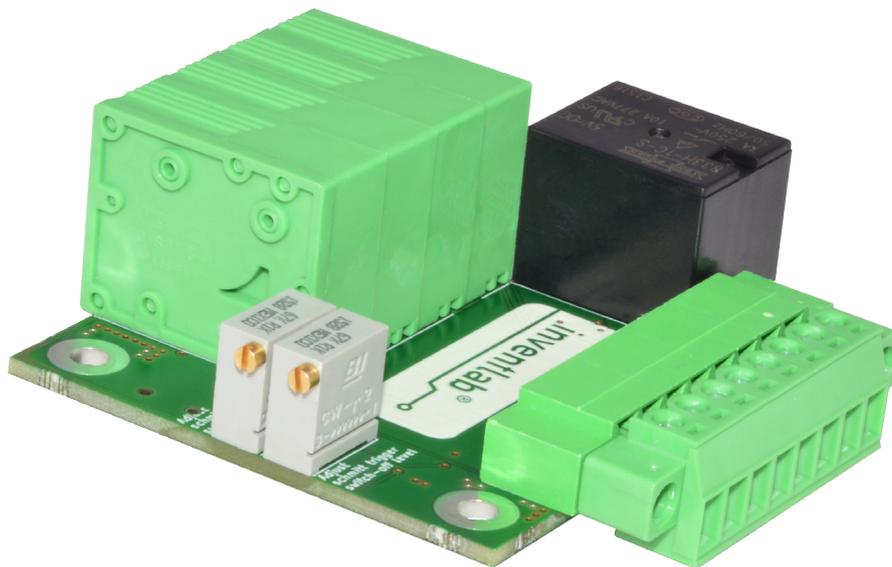


ist - inventlab schmitt trigger module

Datasheet

*Observe safety instructions on page 2*



## Features of ist

- ▶ Schmitt trigger module with adjustable switch on and off threshold
- ▶ Wide input voltage range: 7V to 40V DC or 5V to 28V AC
- ▶ Proper state down to 0V
- ▶ Relais output
- ▶ PFET output to switch loads up to 80A
- ▶ Schmitt trigger output signals: Normal and inverted
- ▶ Switch to override schmitt trigger input: Output on/off
- ▶ -40°C to 85°C operating temperature

## Applications

- ▶ Industrial
- ▶ Security
- ▶ Defense
- ▶ Marine
- ▶ Vehicle
- ▶ Railway
- ▶ ...

## Safety instructions

The manufacturer declines any liability for damage to humans and machines. In particular, damage arising from the non-observance of the following safety regulations!

**All work on the device must be carried out only by qualified and trained personnel!**

Keep conductive parts away from the connectors, risk of short circuit!

If the device has visible defects or it indicates defects, disconnect it and return it to manufacturer for repair.

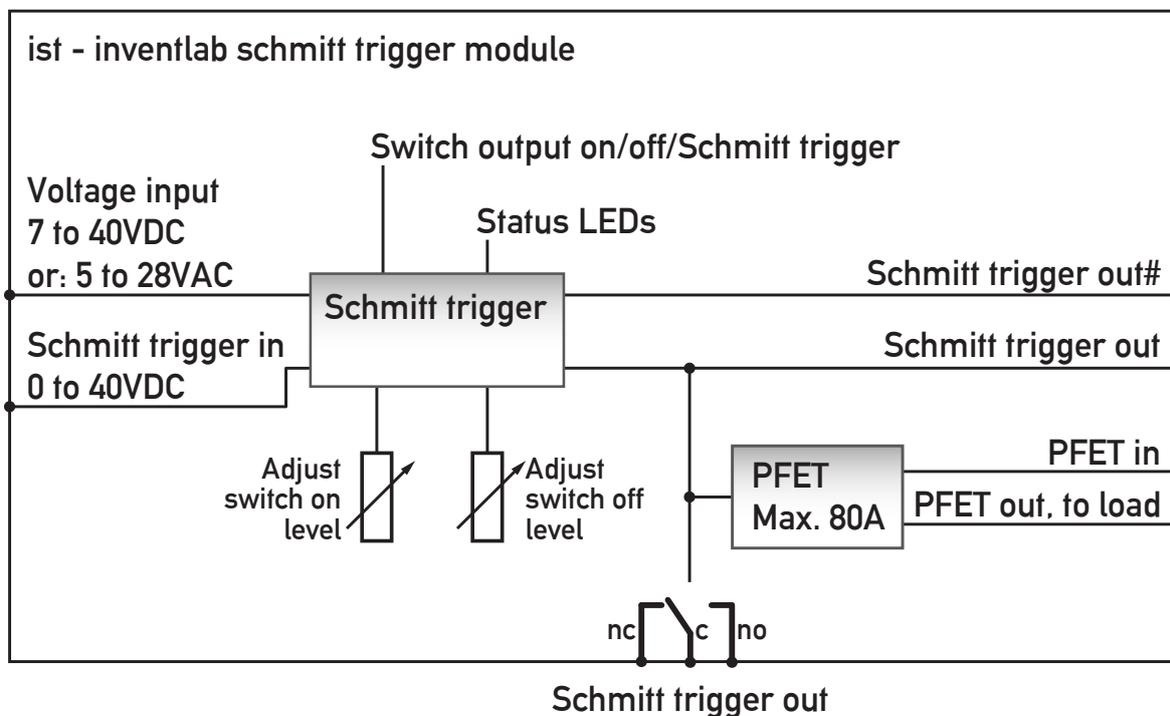
## Description

ist is an integration module to disconnect loads when the voltage source falls under the allowed range. It allows to built an undervoltage protection, for example in ultracapacitor UPS or buffer applications.

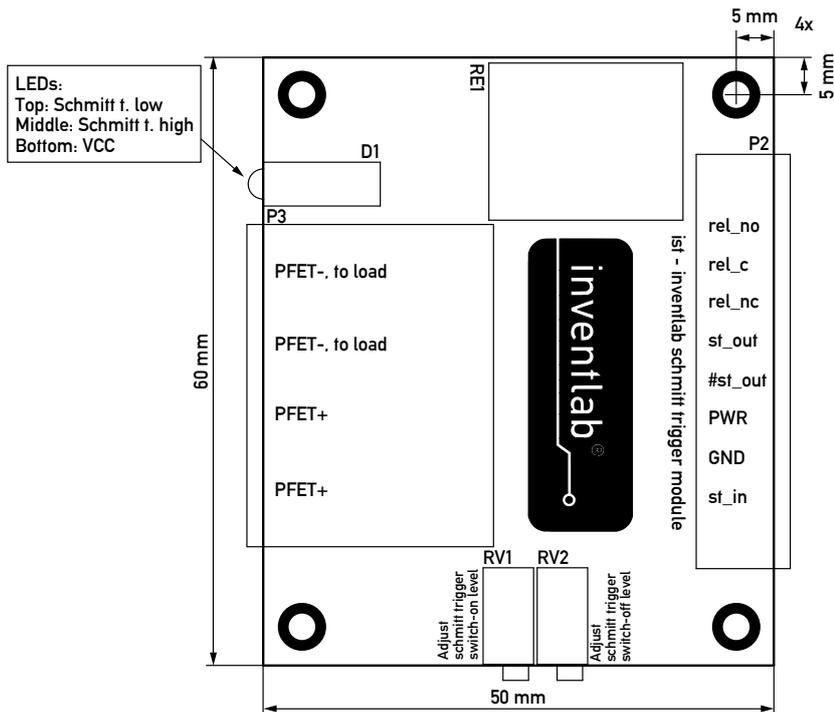
## Application informations

Contact inventlab LLC to get design support

## Block diagram



## Connectors, LEDs and dimensions



Pin	Description	Pin	Description
PFET-	Schmitt trigger PFET input, connect to voltage source (respect to GND!)	st_out	Schmitt trigger signal output, do not connect to any load
PFET+	Schmitt trigger PFET output, connect to load	#st_out	Schmitt trigger inverted signal output, do not connect to any load
rel_no	Schmitt trigger relais no output	PWR	Voltage input: 7V to 40V DC or 5V to 28V AC
rel_c	Schmitt trigger relais c output	GND	GND
rel_nc	Schmitt trigger relais nc output	st_in	Schmitt trigger input signal

### P3 cable entry plug, cable cross sections

Solid wire: 26-16 AWG / 0.13-1.5mm<sup>2</sup>

Stranded wire: 26-16 AWG / 0.13-1.5mm<sup>2</sup>

Torque: 3.0Lb.In / 0.34Nm

Wire stripe length: 6-7mm

### P2, cable cross sections

Conductor cross section solid min. 0.2 mm<sup>2</sup>

Conductor cross section solid max. 10 mm<sup>2</sup>

Conductor cross section flexible min. 0.2 mm<sup>2</sup>

Conductor cross section flexible max. 6 mm<sup>2</sup>

Conductor cross section flexible, with ferrule without plastic sleeve min. 0.25 mm<sup>2</sup>

Conductor cross section flexible, with ferrule without plastic sleeve max. 6 mm<sup>2</sup>

Conductor cross section flexible, with ferrule with plastic sleeve min. 0.25 mm<sup>2</sup>

Conductor cross section flexible, with ferrule with plastic sleeve max. 4 mm<sup>2</sup>

Conductor cross section AWG min. 24

Conductor cross section AWG max. 8

2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, min. 0.25 mm<sup>2</sup>

2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, max. 1.5 mm<sup>2</sup>

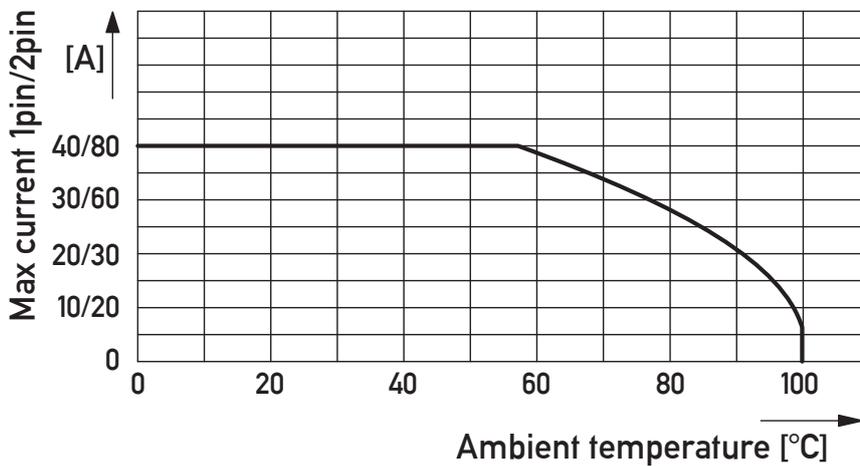
Wire Stripe length: 15mm

## Electrical Specifications / Absolute Maximum Ratings

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
$V_{VCC}$	DC Input voltage		0	7 - 40	40.3	VDC
$V_{VCC}$	AC Input voltage		0	5 - 28	28.3	VAC
$I_{Relais}$	Relais current				10	A
$V_{RELAIS}$	Relais voltage	Voltage respect to GND			48	V
$V_{STIN}$	Schmitt trigger input voltage		0	0 - 40	40.3	V
$V_{PFET}$	PFET voltage	Respect to GND	5		40	V
$I_{PFET}$	PFET current				80	A
$T_A$	Temperature range	Storage	-40	20	85	°C
$T_O$	Temperature range	Operating	-40	20	85	°C

### P3 current derating

#### Current derating (6mm<sup>2</sup> wire)



### Adjusting the schmitt trigger switch on and switch off level

Important: Due to the switching threshold need a hysteresis, take care and follow the following steps:

- ▶ Connect the schmitt trigger input signal voltage, at which, the schmitt trigger **should switch on**
- ▶ Adjust the „**Switch off level**“ (RV2) to this level (The Low-LED should switch off at this point)
- ▶ Connect the schmitt trigger input signal voltage, at which, the schmitt trigger **should switch off**
- ▶ Adjust the „**Switch on level**“ (RV1) to this level (The High-LED should switch on right after this voltage level)

## Manufacturer



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## Product website / Where to buy

<http://shop.inventlab.ch/en/12-integration-modules>

or for German:

<http://shop.inventlab.ch/de/12-integration-module>

## Your specific requirements

Please contact inventlab LLC if your project has special requirements. Our engineers look forward to hearing from you.

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