

ICCS – Intelligent Control and Command Systems



Solid State Relay

ICCS Solid State Relays can be used to switch lamps or resistive loads. In terms of size and pin arrangement, the Solid State Relays are compatible with conventional ISO mini relays. They are maintenance- and wear-free and have a low power consumption. The Solid State Relays are also short-circuit-proof, overload-proof and protected against overtemperature. Compared to a fuse, the Solid State Relays switch faster in the case of a short-circuit. However, they are not suitable to protect a supply path by themselves and must be pre-fused in advance with a suitable fuse. ICCS Solid State Relays provides feedback on the current flowing through the device. This feature allows a diagnostic through a main controller.

Advantages of ICCS Solid State Relays:

- Avoiding
 - Contact bounce
 - Moving parts
 - Mechanical wear on the switching contact
 - Switching noise
- Direct control by driver logic
- Low power consumption
- Wide operating voltage range
- High shock and vibration protection
- Generating no magnetic fields or electrical interference

Technical data

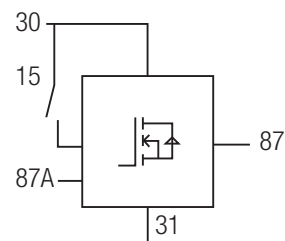
General information	
Housing	ISO Mini Relay
Connector	5 Pins DIN (4 pins for 4 A)
Dimensions	30 x 30 x 30 mm
Weight	~20 g (4 A), ~45 g (5 / 15 / 25 A)
Operating temperature	-40 °C to 80 °C
Storage temperature	-40 °C to 80 °C
Ingress protection	IP53
EMC	E1
Input voltage	9 to 32 V DC
Output current	4, 5, 15 or 25 A (see below)
Quiescent current	< 20 µA
Reverse polarity protection	Yes

Input details

Input	Positive	Negative
Turn-on threshold	3.9 V	0 V
Turn-off threshold	3.7 V	Operating voltage

Pin assignment

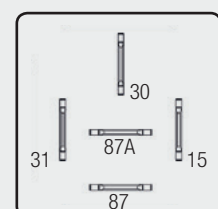
Pin	Description	Function
30	Vcc	9 to 32 V DC power supply
31	GND	Ground
15	Gate	MOSFET gate (positive or negative)
87	Output	MOSFET source
87A	Sense	MOSFET current sense



Front view



Bottom view



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Current sense reference values

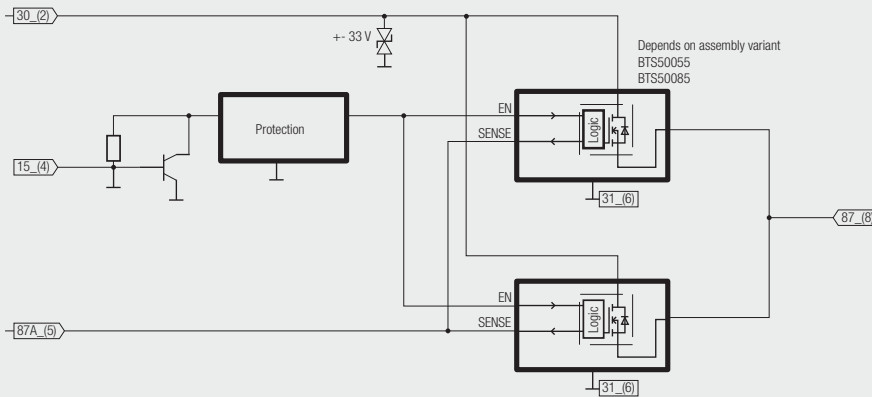
Current sense proportional to the load on pin 87 is available on 25 A, 15 A and 5 A variants on pin 87A.

Current sense output 25 A variant, measured at RT=20 °C		
Load current [A]	Supply voltage	
	8 V	12-32 V
1	0.08	0.1
5	0.4	0.7
10	0.9	1.5
15	1.8	2.3
20	2.8	3
25	3.5	3.8

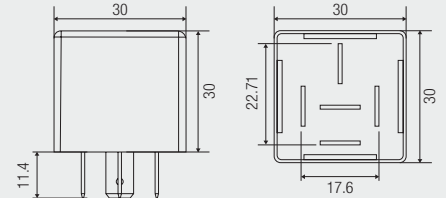
Current sense output 5 A variant, measured at RT=20 °C		
Load current [A]	Supply voltage	
	8 V	12-32 V
0.5	0.3	0.3
1	0.7	0.7
1.5	1	1.1
2	1.3	1.5
2.5	1.8	1.8
3	2.2	2.2
3.5	2.6	2.7
4	2.9	3
4.5	3.3	3.4
5	3.6	3.9

Current sense output 15 A variant, measured at RT=20 °C		
Load current [A]	Supply voltage	
	8 V	12-32 V
1	0.2	0.3
5	1.2	1.3
10	2.4	2.6
15	3.9	4.2

Block function diagram



Dimensions



Note: 4 A version without the middle pin

Order information

Available references	Part number
ICCS Solid State Relay – 4 A (no sense function)	ICS-100227
ICCS Solid State Relay – 5 A – positive input	ICS-103313
ICCS Solid State Relay – 5 A – negative input	ICS-103314
ICCS Solid State Relay – 15 A – positive input	ICS-103315
ICCS Solid State Relay – 15 A – negative input	ICS-103316
ICCS Solid State Relay – 25 A – positive input	ICS-103317
ICCS Solid State Relay – 25 A – negative input	ICS-103318

For more information visit us at www.we-online.com/ics or call +49 7940 9810-0.

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