ac Current Transducer v6 ACT141

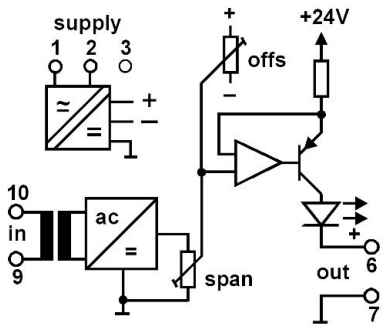
DESCRIPTION

The ACT141 is a 4-wire active current transducer, designed for AC-current inputs from current transformer or direct load current. Input spans from 0.5A up to 10A can be manufactured. Offset over entire range is also available (example input 4 - 5Aac, output 0 - 10Vdc). Final calibration is trimmed using the front accessible 'offs' and 'span' 15-turn trim adjustments. Through the use of an internal current transformer input/output isolation up to 2kV is achieved. The output signal level is indicated by a green LED. on the front giving a clear indication of module function, presence of signal and output loop closed (for current outputs only). RF and power transients protection is also standard as with all APCS modules. Various power supply choices are available varying from 415Vac down to 8Vdc, all provide power isolation.

General Specifications

Size:	52 W x 70 H x 110 D (mm).
Mounting:	DIN-Rail, gear plate.
Termination:	Screw terminals on front.
Protection class:	IP40.
Weight:	0.300 kg.
Housing material:	ABS.
Calibration accuracy:	0.2% of span.
Combined linearity and drift error:	0.2% of span.
Accuracy as per AS1384-1973:	Class 0.2.
Front 'OFFS' adjust:	±20% typical.
Front 'SPAN' adjust:	±20% typical.
Response time:	500ms (typical).
Ambient temperature operating range:	-10...+60°C.
Temperature effect:	0.02% per °C.
Input range:	0.5 up to 10Aac. (40 - 60 Hz sine).
Input impedance:	0.008Ω at 5A.
Input/output isolation:	2kVrms.
Overload continuous:	150% of rated input.
short term (2 sec):	20 times rated input.
Output loop drive:	1mA into 18kΩ. 10mA into 1.8kΩ. 20mA into 0 - 900Ω.
Output load change effect:	less than 0.2% up to max. load.
Output ripple:	less than 0.2%.
Power requirements:	3W.
Power supply isolation:	2kVrms.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

Block Diagram



For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

TYPE NO. DESIGNATION

ACT141 - X XX X X X

Power Supply:

1 = 90-280Vac 50/60Hz (65-280Vdc)
*) 3 = 16-48Vac 50/60Hz (10-60Vdc)
*) 6 = 8 - 60Vdc
*) 9 = Other (Specify)

Input (AC-Current only):

*) 01 = 0 - 0.5A(0.01VA).
*) 03 = 0 - 2A (0.05VA).
04 = Link select 0 - 1A (0.01VA) or 0 - 5A (0.2VA), specify when ordering (5A default).
*) 05 = 0 - 10A (0.4 VA).
06 = Use with APCS external current transformer, specify one of the following and required scaling; SCT007(50A), SCT012(100A), SCT008(200A), SCT009(600A). All external current transformers must be ordered separately.
*) 09 = Other (Specify).

Output:

2 = Voltage range up to 10V (100kΩ min). Offset available with less with less than 21% span (e.g. 1-5Vdc)
4 = Current Output up to 20mA (900Ω max). Offset available with less with less than 21% span (e.g. 4-20mA)
*) 9 = Other (Specify).

Action:

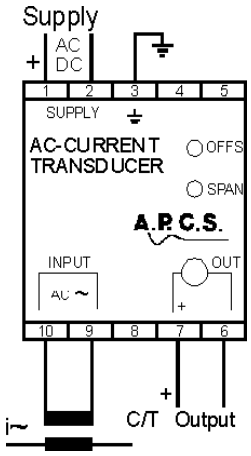
1 = Direct.
2 = Reverse.

Options:

0 = None.
*) 2 = Customised response time (Specify).
*) 3 = Output ramp.
*) 9 = Other (Specify).
*) A = SPL0489 (200% SPAN +/-50% Offset)

*) = Price Extra.

Connection Diagram



The example shown uses an external current transformer; in many cases this is not necessary as the ACT141 can directly accept up to 10A.

Link Selectable Input 04

When ordered with input 04 the input range can be changed to 1 or 5 amps. To change ranges:

1) Disconnect power to unit.
2) Unclip housing lid and withdraw unit from housing.
3) Set the coding plug to 1 or 5 as required.
4) Reassemble unit and connect power.
5) Adjust “span” and “offs” pots to recalibrate.
6) Change the label information to the new input value.

Section Of Internal Circuit Board

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