Ac Active VAR Transducer v4 ART191

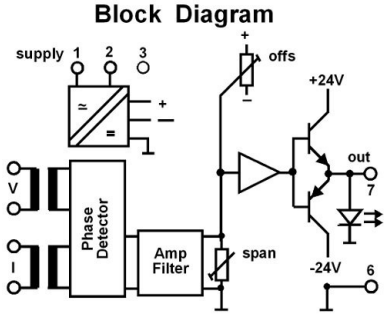
DESCRIPTION

The ART191 converts the instantaneous VAR input in a single phase or 3 phase (3 or 4 wire) balanced load system into a standard DC output signal that is proportional to the measured value. The DC signal is suitable for driving measurement and/or control equipment either at the measurement point or at a remote location. Input Voltages of 63.5 to 415V and input currents of 0.5 to 10A can be connected directly to the transducer terminals, or inputs can be connected via external current and voltage transformers. Internal transformers provide galvanic isolation between, input voltage, input current and power supply circuits. The output signal can be uni-directional, bi-directional or offset. The output signal level is indicated by a green LED on the front that gives a clear indication of module function. Final calibration is trimmed using the front accessible 'offs' and 'span' 15-turn trim adjustments. Various power supply choices are available ranging from 415Vac down to 12Vdc. These transducers are Australian designed and manufactured and offer a vast range of input to output combinations. The design is fully solid state - for long term stability. These transducers have been designed to class 0.2 AS1384-1973 and comply with BS6253 and IEC688.

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:	0.400 kg.
Housing material:	ABS.
Calibration accuracy:	0.2% of span.
Front 'OFFS' adjust:	±25% typical.
Front 'SPAN' adjust:	±25% typical.
Combined linearity/drift error:	0.2% of span.
Accuracy as AS1384-1973:	Class 0.2.
Response time:	<500ms.
Ambient temperature:	0...+60°C (operating).
Temperature effect:	0.02% per °C.
Input range:	Current: 0.5 up to 10Aac (40 - 60Hz). Voltage: 63.5 to 415Vac (40 - 60Hz).
Input burden:	Current: <0.3VA; Voltage: 1mA.
Input/output isolation:	2kV rms.
Auxiliary supply isolation:	2kV.
Overload continuous:	150% of rated input (current & voltage).
Overload short term (2 sec):	20 times rated input current, 1.9 times rated input voltage.
Output loop drive:	Max 20mA drive for voltage output. Max 20V drive for current output.
Output load change effect:	less than 0.2% up to max. load.
Output ripple:	less than 0.2%.
Power requirements:	3W.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

Block Diagram



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

A.P.C.S.

ART191 - X X X X XX X

TYPE NO. DESIGNATION

Power Supply:

1 = 90-280Vac 50/60Hz (65-280Vdc).
*) 3 = 16-48Vac 50/60Hz (10-60Vdc)
*) 9 = Other specify.
*) 4 = 415V, 50/60Hz ±10%.
*) 6 = 8 - 60Vdc.

System Configurations *1:

1 = Single Phase.
2 = 3 Phase, 3 Wire, balanced load.
3 = 3 Phase, 4 Wire, balanced load.

Input Current (Specify external CT):

1 = 0 - 0.5A (0.02VA).
2 = 0 - 1A (0.03VA).
3 = 0 - 2A (0.1VA).
4 = 0 - 5A (0.3VA).
5 = 0 - 10A (0.6VA).
^) 6 = External APCS CT
*) 9 = Other (Specify).

^) Also specify Type: [SCT007(50A), SCT012(100A), SCT008(200A), SCT009(600A)] . All external CTs must be ordered separately.

Input Voltage (Specify external PT):

1 = 63.5V.
2 = 110V.
3 = 240V.
4 = 415V.
*) 9 = Other (Specify).

Output:

UNIPOLAR	BIPOLAR
01 = 4 - 20mA (1kΩ max).	12 = -20...+20mA (1kΩ max).
02 = 0 - 20mA (1kΩ max).	13 = -10...+10mA (2kΩ max).
03 = 0 - 10mA (2kΩ max).	14 = -1...+1mA (20kΩ max).
04 = 0 - 1mA (20kΩ max).	15 = -10...+10V (500Ω min).
05 = 0 - 10V (500Ω min).	16 = -5...+5V (250Ω min).
06 = 0 - 5V (250Ω min).	
07 = 1 - 5V (250Ω min).	
*) 09 = Other (Specify).	*) 19 = Other (Specify).

Options:

0 = None.

*) = Price Extra,..#) = Non stock item, ^) = Extra order detail for external CT.

Ordering Information:

In addition to above, specify the system frequency and CAL (50Hz, 250kVAR). The CAL can be either be calculated from the nominal V & I or rounded off and designated at a particular VARs.

For single phase

Nominal Voltage x nominal Current x PT ratio x CT ratio. Using inputs; 240V, 5A, 1000/5 CT, no PT CAL can be: 240 x 5 x 1000/5 = 240kVAR or CAL can be designated as 250kVAR.

For 3 Phase

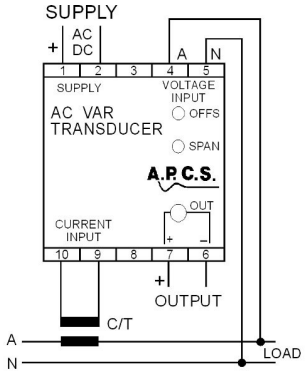
Nominal Voltage (phase to phase) x Current x PT ratio x CT ratio. Using inputs; 11kV/110V phase-phase, 100/5 CT CAL can be; $\sqrt{3}$ x 110V x 5A x 11k/110 x 100/5 = 1.905M VAR or CAL can be designated as 2M VAR.

*1 For other system configurations (3 Phase, 3 or 4 wire, unbalanced load) refer to ART391.

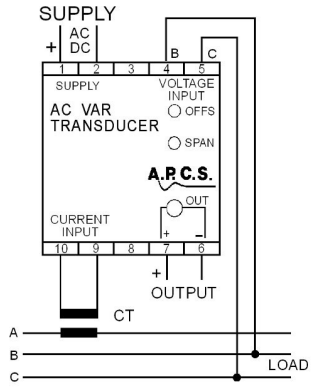
Connections

PT = Potential Transformer
CT = Current Transformer
CAL = Input for full scale.

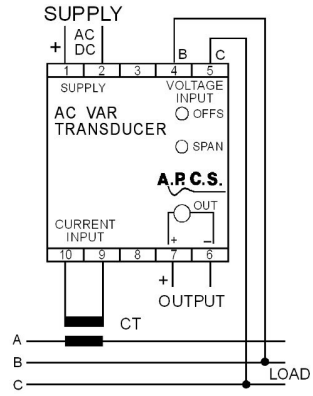
Single Phase VAR



3-Phase 3-Wire Balanced Load VAR



3-Phase 4-Wire Balanced Load VAR



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