

# 852-216

DUAL DISPLAY TRANSFORMER WINDING  
TEMPERATURE INDICATOR  
2 WINDING ELECTRONIC WTI



### Standard Features

- › Protection, monitoring, control and alarm
- › Intelligent cooling system
- › Auto cool mode
- › Expired life
- › Data logging
- › 3 wire PT100 input
- › 1, 2 or 3 gradients
- › 2 Winding version
- › Wide range universal power supply

### Optional Features

- › PC set up and configuration software
- › High input CT's

### Benefits

- › Easy to install and retrofit
- › Easy to set up using keypad or setup software
- › Long life

Transformer Winding Temperature Protection  
from Ashridge Engineering

National Grid Approved  
(Category 'A' Unrestricted as WTI)

# 852-216



The 852-216 winding temperature indicator is a high integrity protection, control and monitoring system for power transformers. The intelligent cooling control system ensures optimal asset life and protection for the transformer.

The WTI continuously calculates the 2 winding temperatures (otherwise known as the hot spot temperatures) in the transformer and displays the hottest winding. This is achieved by measuring the top oil temperature with a precision PT100 probe and the winding current using a high isolation current transformer (CT) within the 852-216. These measurements are combined with Ashridge's algorithm based on the IEC354 standard to provide accurate winding temperatures.

### The 852-216 provides:

- Multiple relay outputs for control, alarm and trip functions
- Output provided for Internal system watchdog alarm
- Output(s) provided for cooling system abnormalities or failures
- Precision, RMS electronics
- High level Isolation
- SCADA outputs of Modbus RTU and DNP 3.0 available to connect to your SCADA system
- IEC61850 ready
- User configurable analogue outputs
- Long life and proven reliability
- Easy set up and install with special relay check mode (Ramp mode)

### Data and Event Logging

The 852-216 logs top oil and hot spot temperatures every 30 minutes, as well as peak temperatures, system entries and power cycling.

### Expired Life

The 852-216 provides an indication of the expired life (loss of life) of the transformer in days.

### Software

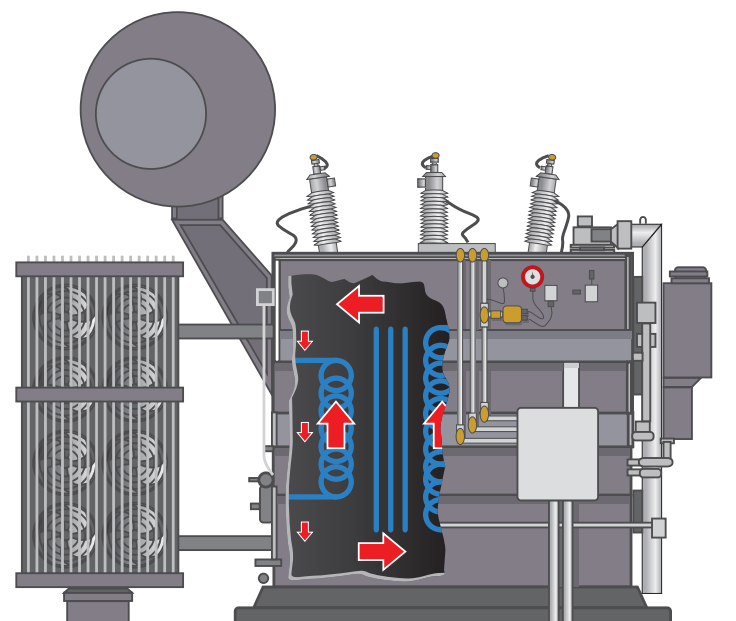
Ashridge's configuration software utility can be used to connect to any 852 Series WTI / OTI to read and edit parameter settings. The software also provides a "compare settings with template" facility, in addition to downloading the settings for incorporation into documentation or archiving.

### Cooling System Control

Ashridge have led the way in designing an innovative and intelligent cooling protection system for transformers. The 852-216 employs unique algorithms, developed by Ashridge, to monitor fans and pumps and warn of partial or full cooling system failures.

### The cooling system control is highly accurate and reliable and incorporates:

- Autocool mode
  - Allows the system to be exercised at a specified time and day of week
  - Inhibits fans and pumps below a user defined temperature
- SCADA system interface for alarms and data
- Remote operation of fans and pumps
- Step mode - the initiation of pumps for a set period, where a sudden change in load is detected



# National Grid Approval

(CATEGORY 'A' UNRESTRICTED AS WTI)



Wall Mounted Version

## Installation:

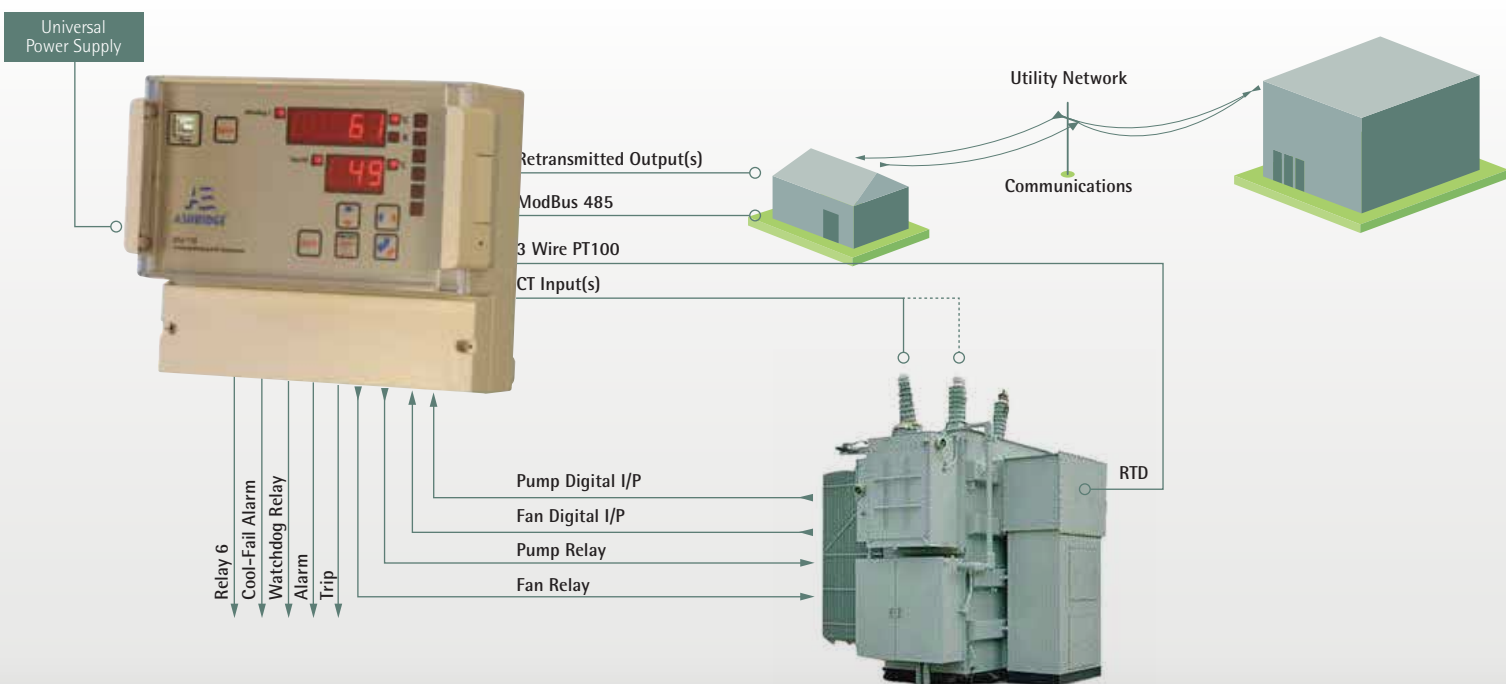
The 852-216 has been designed for easy installation of new and also retrofit systems. The wide range switch mode power supply allows the 852-216 to be connected to a variety of input voltages automatically. Direct CT input connection reduces cabling requirements.

## Setting Up:

The 852-216 is easily configured using the 5 key keypad on the front panel, with defined passwords for access to each section, maintaining security of settings. Non-volatile memory ensures that data is not lost in the event of power failure.

Alternatively, Ashridge's PC set up and configuration software utility can be used to connect to any 852 Series WTI / OTI to read and edit parameter settings. The software also provides a "compare settings with template" facility, in addition to downloading the settings for incorporation into documentation or archiving.

An easy to use, on site, dynamic teach mode facility ensures the fan and pump feedbacks are accurately calibrated.



## Series 852-216 Transformer WTI

### SPECIFICATION

3 wire PT100 input:	+/- 1°C @ 20°C, PT100 input to Analogue output: +/- 2°C @ 20°C, displayed range 0-200°C
Analogue output:	0-10, 0-20 and 4-20mA (user selectable). Maximum loop resistance 800Ω.
CT input:	0.25-10A user selectable. Higher currents by special requests. Overload capability: 75A for 3 seconds. Hot Spot Gradient Algorithm Conforms to IEC 354
Relay outputs:	Watchdog and Cool Fail plus 5 off user adjustable for Pump, Fan, Alarm, Trip and Relay 6 each with N/O or N/C volt free contacts (user selectable by links).
Relay rating:	Contact life (>10. <sup>5</sup> operations): 5A Non inductive (Breaking: 100Vdc/0.4A, for inductive de-rate using L/R=7msecs, i.e. approx 0.2A@125Vdc).
Power supply:	Universal input, 44-265 Volts ac, 45-260 Vac and Vdc, power consumptions less than 6Va.
Memory:	Non-volatile flash
Weight:	1.2Kg - wall mount
Dimensions:	241mm (W) x 185mm (H) x 105mm (D) - wall mount

### EMC:

Meets the intent of Directive 89/336 and LVD 73/23/ECC

EN61000-4-5, NGTS 3.24.4 (7.7-11), EN61000-4-11, EN61000-4-4, EN61000-4-12, EN61000-4-2, EN61000-4-3, EN61000-4-6, EN61000-4-16, IEC 60255-22-7, EN 55022, NGTS 3.24.4 (7.65-7.69), EN61000-4-10, IEC 60255-5 (6.3 & 6.4), IEC 60255-5 (7.2),

### APPROVALS:

Firmware version t and hardware Mod b or above meets the intent of the following: NGTS WTI specification 3.3.09, Issue 1 and NGTS 3.24.15 for EMC and Environmental.

### ENVIRONMENT:

Operating temperature range: -20 to 70°C and 0-95% RH Non condensing

Wall mounted enclosure to IP65.

Seismic to EN60255-21-3 (class 2).

Shock and vibration to IEC 68-2-6, 68-2-27, 68-2-29.

### ORDERING CODES:

852-216-USB	2 winding version with dual display (winding and top oil) complete with isolated USB socket and software for configuration.
852-216	2 winding version with dual display (winding and top oil)

### ATMOSPHERIC:

EN60068-2-2, EN60068-2-1, EN68-2-56, EN68-2-1, NGTS 3.24.15 (8.26-8.28)

### ACCESSORIES:

 Ashridge Engineering provides:

#### Weather and Solar Shields

#### Platinum Resistance Thermometers:

- › Standard PT100
- › Custom PT100
- › Magnetic PT100

#### Stainless Steel Thermowells:

- › Standard Thermowell
- › Custom Thermowell

#### Cooling System Monitoring CT's:

- › Size A (10 Amps)
- › Size B (30 Amps)
- › Size C (60 Amps)
- › Custom CT with or without mounting feet

#### Conversion Mounting Plates:

- › Mounts directly onto C105 mounting holes

Please refer to the 852 Selection Guide document on our website for more information on the whole range of Ashridge WTI's at [www.ash-eng.co.uk/products](http://www.ash-eng.co.uk/products)

### DISTRIBUTOR



BS EN 61000-6-3  
BS EN 61000-6-1

852-0214

Subject to change without notification

### Ashridge Engineering Ltd.

Unit 1a, 58 North Road Industrial Estate,  
Okehampton, Devon, EX20 1BQ, United Kingdom

t: +44 (0) 1837 53381

f: +44 (0) 1837 55022

e: [sales@ash-eng.co.uk](mailto:sales@ash-eng.co.uk)

[www.ash-eng.co.uk](http://www.ash-eng.co.uk)



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