



Series 852-216

Transformer Winding Temperature Indicator



Electronic WTI

High Quality

Reliable

Versatile

Easy To Use

Retrofit Options

**Transformer Winding Temperature
Protection from
Ashridge Engineering**



Series 852-216

The 852-216 WTI is an intelligent microprocessor controlled digital indicator with inputs for Two winding CT's and one PT100 temperature probe for Top Oil. Also includes fan and pump feedback, plus remote cooling system activation control.

The series 852-216 offers dual display continuously indicating Hot Spot and Top Oil

The unit is user configurable via the integral keypad with manufacturer defined passwords for data security. All stored data is non-volatile flash with exception of the time/date which uses a 'Supercap' to maintain the time/date.

With six volt free relay contacts to provide alarm, trip, fan, pump, cooler failure warning and internal system watchdog functions.

SCADA ready outputs of MODBUS (RTU) and two off analogue outputs, which are user configurable.

High voltage isolation between inputs and outputs provides the high levels of integrity required for this demanding application.

IEC354; The algorithm designed by Ashridge Engineering fully meets these requirements for natural and forced gradients.

Cooling System Control + Monitoring

The 852-216 employs sophisticated algorithms taking feedback from either a volt free contact or directly monitoring the fan and pump running currents.

In its preferred mode the 852-216 monitors the fan and/or pump running currents using external CT's thus always ensuring the correct hot spot gradient is used.

This ensures the hot spot temperature and therefore the alarm and trip values truly represent the conditions within the transformer, whilst simultaneously providing early warning of cooling system malfunction (partial or full).

A further standard function of the 852-216 is the 'Autocool' mode this allows the cooling system to be exercised at periodical intervals selectable between 1 to 30 days. The key feature of this function is the early warning of any cooler malfunction during the 'Autocool' exercise period.

Railside and CHP applications:

Transformers used for Railside applications or CHP (Combined Heat and Power Stations) can become 'stressed' due to step changes in current, causing the oil to overheat within the transformer core before the normal switching operation of the cooling system occurs.

Our 'Step' mode provides a user adjustable solution, by immediately operating the cooling system for a timed period, thereby reducing the stress impact on the transformer.





Dimensions:

Wall Mounted Version
241mm (W) x 185mm (H) x 105mm (D)

Standard Features

- 3 Wire PT100 Input
- Two Winding CT inputs, (0-10A)
- System Condition Monitoring & Alarm
- Fan and Pump controller monitoring
- Auto Cooling System Exercising
- Wide Range Power Supply (42-265V)
- One, Two or Three Gradients
- 6 User Selectable Relays

Ancillary Equipment

- Standard or Custom PT100 Designs
- Standard or Custom Thermowells
- CT's for Fan and Pump Monitoring
- Remote monitoring via GPRS or SMS
- Remote Alarms via GPRS or SMS

Installation:

The series 852-216 has been designed for ease of installation and setting up.

The wide range switched mode power supply allow the 852-216 to be connected to a wide range of input voltages without the need for link changes.

Direct CT input connection reduces cabling requirements. The PT100 input and the analogue outputs require screened cable to ensure high EMC immunity.

Setting Up:

The series 852-216 is easily configured using the 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.

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

Accessories:

Ashridge Engineering provides;

Platinum Resistance Thermometers:

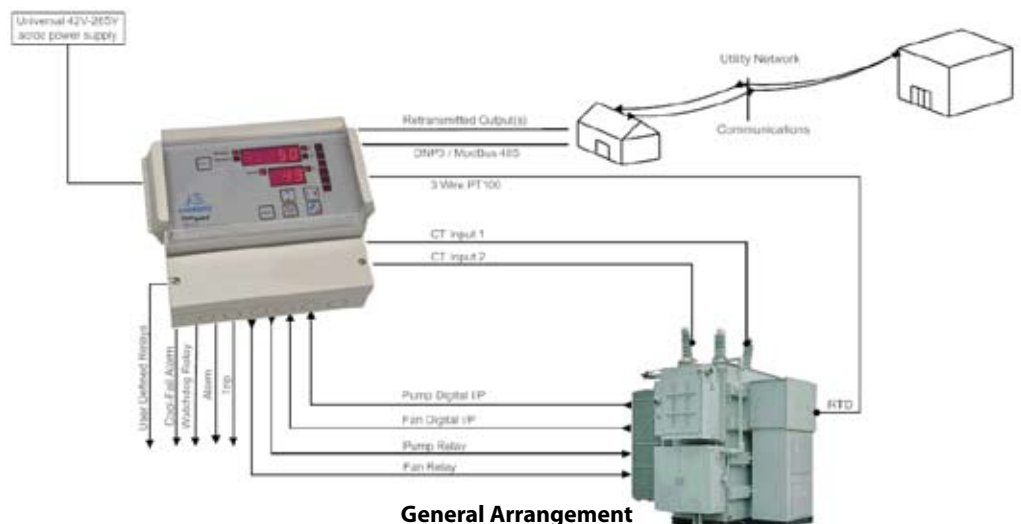
- Standard PT100
- Custom PT100
- Magnetic PT100

Stainless Steel Thermowells:

- Standard Thermowell
- Custom Thermowell

External CT's:

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



General Arrangement

Series 852-216 Transformer WTI

SPECIFICATION

3 wire PT100 input:
+/- 1°C @ 20°C
PT100 inputs to Analogue outputs:
+/- 2°C @ 20°C

2 Analogue outputs:
0-10, 0-20 & 4-20mA (user selectable).
Maximum loop resistance 800Ω

RS485 output: Modbus(RTU) or DNP3 on

Winding CT inputs: 2 user selectable 0-10A,
higher currents by special request (CT=0.03VA,
1:1000, Overload 75A for 3 secs)

Hot Spot Gradient Algorithm Conforms to
IEC 354

Relay outputs: Watchdog, Alarm, Trip and a
further 4 relays for Fan, Pump and Cool-Fail
etc. Each with N/O or N/C volt free contacts
(user selectable by links).
Relay rating: Contact life (for 1.2 x 10⁵
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, 42-265 Volts
ac/dc, power consumptions less than 6VA.

Weight: 1.55 Kg

ENVIRONMENTAL:

Operating temperature range: -20 to 70°C .
Wall mounted enclosure to IP65
Seismic to IEC 255-21-3 (class 2)
Damp heat to IEC 68-2-30

ENVIRONMENTAL APPROVALS:
EN60068-2-2, IEC225-21-1, IEC255-21-2 &
IEC 68-2-56

EMC:
Meets the intent of Directive 89/336 and LVD
73/23/ECC
IEC255-5, EN55022, EN50081-2, EN55011,
EN61000-4-2, EN 61000-4-3, EN61000-4-4,
EN61000-4-5, EN61000-4-6, EN61000-4-11,
EN61000-4-12, EN61004-16, EN60255-22-1

ORDERING CODES

Wall Mounted Version:
852-216

ALTERNATIVE PRODUCTS

Single Windings Models:

852Plus:
National Grid Approval,
(Category 'A' for Unrestricted SuperGrid substations as WTI)

Wall Mounted Versions:
852Plus-W-V32 (Standard WTI)
852Plus-W-Q22a (Quad Booster)

852-112, 113 or 116:

1 CT Winding Input
1 PT100 Input
2-6 Output Relays

Triple Windings Models:

852-338:

3 CT Winding inputs
3 PT100 Input
8 Output Relays

AGENT



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