



Series 852Plus

Transformer Winding Temperature Indicator

Standard Features

- 3 Wire PT100 Input
- 0-1 to 0-10A CT Input (selectable)
- System Condition Monitoring & Alarm
- Fan and Pump controller monitoring
 - Auto Cooling System Exercising
- Universal Power Supply
 - 1, 2, or 3 Gradients

Optional Features

- Low Range Power Supply (22-80V)
 - High Input CT Option
- Additional Output Relay

Ancillary Equipment

- Standard or Custom PT100 Designs
- Standard or Custom Thermowells
 - Conversion Mounting Brackets
- CT's for Fan and Pump Monitoring



**Transformer Winding Temperature
Protection from
Ashridge Engineering**

**National Grid Approval
(Category 'A' Unrestricted as WTI)**



Series 852Plus

The 852Plus WTI is an intelligent microprocessor controlled digital indicator with inputs for CT, PT100 temperature probe, fan and pump feedback plus remote cooling system activation control.

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 or ASCII) 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

The 852Plus employs sophisticated algorithms taking feedback from either a volt free contact or preferably CT inputs to monitor fans or pumps.

In its preferred mode the 852Plus 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 output warning of cooling system (partial or full).

A further standard function of the 852Plus 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 output warning of any cooler malfunction during the 'Autocool' exercise period.

A further enhancement is the 'Step' mode this has been included where a sudden large step change in the CT current can cause the oil to overheat before the temperature rises sufficiently to switch on the pump at the normal preset temperature, ie CPH stations at switch-on and rail applications.



144 x 144 DIN Panel Mounted Version
144mm (W) x 144mm (H) x 220mm (D)
Cutout: 138mm x 138mm + 0.5/-0.00

Installation:

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

The wide range switched mode power supply allow the 852Plus 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 852Plus 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.

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



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

Accessories:

Ashridge Engineering provides;

Platinum Resistance Thermometers:

- Standard PT100
- Custom PT100
- Magnetic PT100

Stainless Steel Thermowells:

- Standard Thermowell
- Custom Thermowell

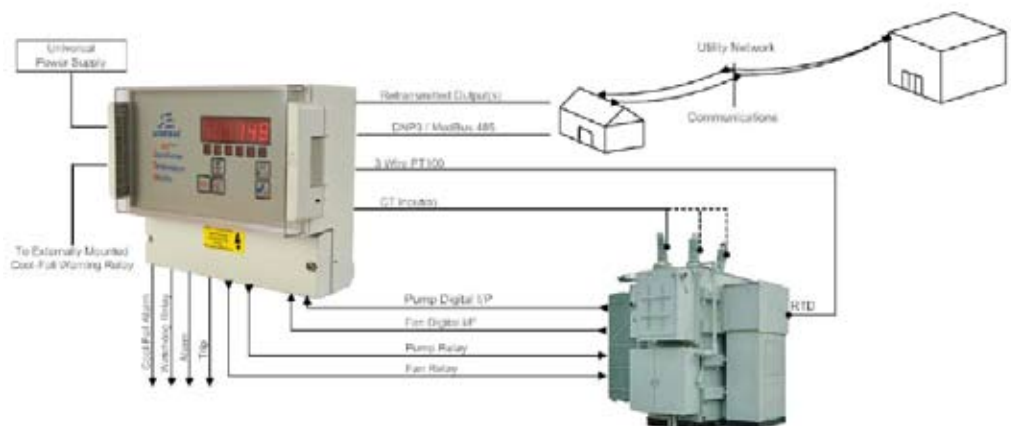
External CT's:

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

Conversion Mounting Plates:

- Mounts directly onto C105 mounting holes

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



General Arrangement

Series 852Plus Transformer WTI

SPECIFICATION

3 wire Pt100 input: +/- 1°C @ 20°C, Pt100 input to Analogue output: +/- 2°C @ 20°C

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

CT input: 0-5A, user selectable 1-10A, 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 and cool fail plus 4 off user adjustable for Pump, Fan, Alarm and Trip all 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, 85-265 Volts ac, 80-260 Volts dc, power consumptions less than 6VA.

Optional Low Voltage Power Supply 22-80V

Weight: 1.2 Kg

ENVIRONMENTAL:

Operating temperature range: -20 to 70°C .

Wall mounted enclosure to IP65

Panel mounted enclosure to IP55

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

NGTS (UK National Grid Technical Specification) 2.13, Issue 3 for EMC and Environmental, NGTS 3.3.8 Issue 1 for EMC and Environmental

EMC:

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

IEC255-5, EN55022, EN50081-2, EN55011, EN6100-4-2, EN 6100-4-3, EN6100-4-4, EN6100-4-5, EN6100-4-6, EN6100-4-11, EN6100-4-12, EN61004-16, EN60255-22-1

(National Grid Company plc Approval – Category 'A' status – permitting unrestricted use as WTI and 'Over-temperature Protection Device').

ORDERING CODES

Wall Mounted Versions:

852Plus-W-V32 (Standard WTI)

852Plus-W-Q22a (Quad Booster)

Panel Mounted Versions:

852Plus-P-V32 (Standard WTI)

AGENT



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