

Search query (7): [SP]: claims 1. a monitoring and protection device of power distribution transformers on the low voltage side (1), characterized in that it comprises: - a power module (2) that is connected to the secondary busbar of the transformer, which comprises a load-disconnector and it is controlled by a control module (4) - a fault detection module (3), next to said power module (2) comprising a diversity of overcurrent sensors and a diversity of voltage sensors, configured to communicate the measurements obtained by said overcurrent sensors and voltage sensors to respective current comparators and voltage comparators of a control module (4) - a control module (4) comprising a controller, a current comparator and two voltage comparators, said control module configured to control said power module (2), to receive said measurements from said fault detection module (3), to read and write a non-volatile memory of an information recording module (6), to communicate in a bidirectional way with a remote communication module (5) and to control a visual alert module (7) - a remote communication module (5), configured to communicate bidirectionally with said control module - an information recording module (6) which comprises a non-volatile memory configured to be read and written by said control module and - a visual alert module (7) that is controlled by said control module wherein said control module (4) comprises, also, a processor that executes an algorithm which allows to determine the presence of a fault and that delays the entrance of the charge during the reconnection wherein for determining the presence of a fault, said control module (4) executes the following tasks: to compare the voltage measured by said voltage sensors of each phase regarding a threshold or the current measured by said overcurrent sensors concerning the threshold value - to generate output voltages as a function of said comparison and - to control the load-disconnector according to said output voltages. 2. the protection device of claim 1, characterized in that said power module (2) comprises a contactor (a1). 3. the device of claim 2, characterized in that said contactor (a1) has a multi-voltage tripping coil. 4. the device of claim 1, characterized in that said fault detection module (3) comprises a plurality of overcurrent sensors and a plurality of voltage sensors, and in that said fault detection module (3) is configured to communicate the measurements obtained by each of the overcurrent sensors of the plurality and from each of said voltage sensors of the plurality to said control module (4). 5. the device of claim 1 or 4, characterized in that said overcurrent sensors are selected from the group that comprises bimetallic thermal fuses and current transformers. 6. the device of claim 1, characterized in that said remote communication module (5) comprises a radio frequency transceiver configured for the communication by a communication protocol that is selected from the group consisting of bluetooth, gprs, lora and communication by radio. 7. the device of claim 1, characterized in that said non-volatile memory from said information recording module (6) is an eeprom memory. 8. the device of claim 1, characterized in that the visual alert module (7) comprises indicator lights. 9. the device of claim 1, characterized in that the delay time of the charge during the reconnection is selected through two switches. 10. the device of claim 1, characterized in that said delay in the entrance of the charge during the reconnection is carried out in a time that is chosen randomly in the range between 0 s and 30 s.

Results: 4

1) Family number: 49059072 (CN201854090U)

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Title: INTELLIGENT TRANSFORMER

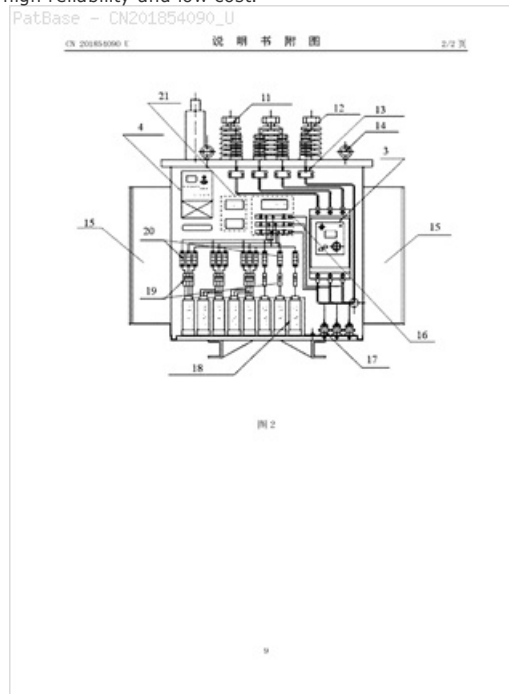
Abstract: The utility model relates to an intelligent transformer, which belongs to the field of a power grid transformer. The intelligent transformer comprises an oil-immersed transformer (1), a master station (2), a breaker (3) and an intelligent terminal controller (4). The master station (2) is respectively communicated with the breaker (3) and the intelligent terminal controller (4) through communication interfaces, wherein the intelligent terminal controller (4) is connected with a mutual inductor set (5), a temperature sensor (8), a pressure sensor (9), an electronic tapping switch (6), a reactive power compensation system (7) and a safety valve (10); the mutual inductor set (5) is used for detecting the three-phase four-line state of a power grid; the temperature sensor (8) is used for sensing the oil temperature of the transformer; the pressure sensor (9) is used for sensing the oil gas pressure of the transformer; the electronic tapping switch (6) and the reactive power compensation system (7) are used for regulating the efficiency of the power grid and stabilizing the voltage; and the safety valve (10) is used for emergency treatment. The master station (2) monitors and controls various operation indexes of the transformer through the breaker (3) and the intelligent terminal controller (4) according to detected information of the intelligent terminal controller (4), so that the power grid is safe and stable. The intelligent transformer has high performance, high reliability and low cost.

Classifications:

International (IPC 8-9): H02H7/04 H02J13/00
H02J3/18 (Advanced/Invention)

CPC: Y02E40/30 Y02E40/74 Y04S10/22

European: Y02E40/30 Y02E40/74 Y02E60/72J Y04S10/20 Y04S10/22



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2) Family number: 73617448 (WO19145825A1)

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Title: MONITORING AND PROTECTION DEVICE OF POWER DISTRIBUTION TRANSFORMERS ON THE LOW VOLTAGE SIDE

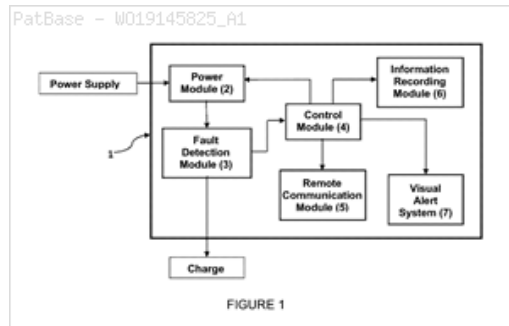
Abstract: The invention is related to a monitoring and protection device of power distribution transformers on the low voltage side. Said device monitors in a permanent manner the functioning of the transformer and provides a record of all the information in case of a fault. Additionally, the invention device provides the protection of the transformer in case of a fault, allowing a partial impact on the service and preventing peak currents that may reduce the useful life of the transformer. The device has a remote communication module that allows the transmission of the recorded data, a control module that may be activated remotely and a visual alert module that reduces the risk in the handling of the device.

Classifications:

International (IPC 8-9): H02H3/38 H02J3/38

H02P13/00 (Advanced/Invention)

CPC: H02J3/38 H02H7/04



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CO20180000647 A1	20190131	CO20180000647	20180124
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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

3) Family number: 60285800 (BRPI1106022A)

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Title: CENTRAL REMOTA PARA SUPERVISAO E PROTECAO DE TRANSFORMADORES DE DISTRIBUICAO CONVENCIONAIS
CENTRAL REMOTE FOR SUPERVISION AND PROTECTION OF CONVENTIONAL DISTRIBUTION TRANSFORMERS (Machine translation)

Abstract: Source: BRPI1106022A [PT] 1 RESUMO "CENTRAL REMOTA PARA SUPERVISAO E PROTECAO DE TRANSFORMADORES DE DISTRIBUICAO CONVENCIONAIS", descreve-se a presente patente de invencao como uma central remota para supervisao e protecao 5 de transformadores de distribuicao convencionais que, de acordo com as suas caracteristicas gerais, possui como principio basico propiciar a formacao de uma central remota (1) em estrutura propria e especifica do tipo eletromecanica instalada ao lado da baixa tensao de transformadores de distribuicao convencionais (B) do sistema de distribuicao de energia eletrica, interpondo-se entre o posto de 10 transformacao e os consumidores interligados ao mesmo, com vistas a possibilitar de forma extremamente pratica, segura e precisa uma completa otimizacao nos procedimentos de supervisao, controle e protecao de sistemas de energia eletrica em geral, aliado a excelente modularidade com relacao as suas funcionalidades que permite total flexibilidade de configuracao. **Machine translation:** 1 SUMMARY "CENTRAL REMOTE FOR SUPERVISION AND DISTRIBUTION TRANSFORMERS PROTECTION CONVENTION", describes the patent this as a remote central to supervision and protection 5 conventional distribution transformers, according to their general characteristics, has as basic principle encourage the formation of a remote station (1) in own structure and specify the electromechanical type installed on the side of low voltage conventional distribution transformers (B) of the electrical power distribution system, interposing itself between the 10 post transformation and consumers connected to it, in order to enable extremely practical, safe and needs a complete optimization in supervision procedures, control and protection of electric power systems in general, coupled with excellent modularity with relation to their functionality that allows full flexibility of configuration.

Classifications:

International (IPC 8-9): G01R13/06 H02H7/04 H02J13/00 (Advanced/Invention)

CPC: Y02B90/2653 Y02E60/725 Y02E60/7853 Y04S10/20 Y04S40/126

