

### Delivery release of VAMP 52 feeder/motor protection relay

Vamp 50 series is developed to cover the specific requirements of basic protection for OEM, utility and industrial applications. Thanks to its cost-effective and flexible design, the Vamp 50 series is an excellent alternative for low and mid range protection applications.

Vamp 50 and Vamp 51 overcurrent and earth fault protection relays were the first released products available.

Vamp 52 feeder/motor protection relay is the latest addition to the VAMP 50 series.

#### Description

Vamp 52 is a multifunction relay suitable for feeder protection of medium voltage networks with grounded, low-resistance grounded, isolated or compensated neutral point or for motor protection of asynchronous induction-type motors.

There are two protection modes available in VAMP 52; "feeder mode" or "motor mode", which both have all the required functions to be applied for each protection application.

The relay can be also applied as a backup relay to a transformer differential relay or as residual voltage protection.

The relay provides circuit-breaker control, additional primary switching devices (earthing switches, disconnectors switches etc) can also be controlled from the relay. Programmable logic functionality is also implemented in the relay. The integrated programmable logic allows to create user defined functions, e.g. interlocking for the switchgear or load shedding

#### Application

In feeder mode Vamp 52 support the following protection functions:

- Short circuit protection (50/51)
- Earth fault protection (50N/51N)
- Directional earth fault protection (67N)
- Intermittent earth fault protection (67NT)
- Residual voltage protection (59N)
- Thermal protection for feeder and cables (49)
- Over- and undervoltage protection (59, 27), single phase
- Programmable stages, which are freely assignable to any analogue measurement
- Auto-reclosing (79)
- Inrush and cold load detection (68)

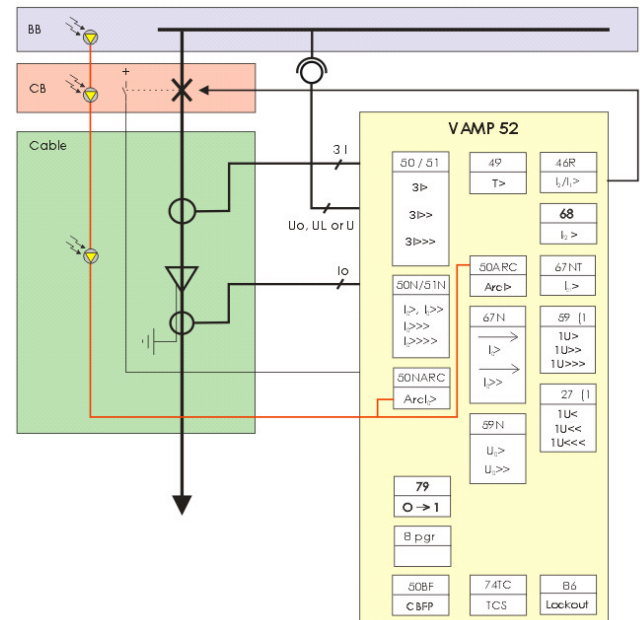


Figure 1. Vamp 52 application example in feeder mode where integrated arc protection is required.

In motor mode Vamp 52 support the following protection functions:

- Short circuit protection (50/51)
- Earth fault protection (50N/51N)
- Directional earth fault protection (67N)
- Residual voltage protection (59N)
- Thermal protection for the motor (49)
- Undercurrent protection (37)
- Start time supervision (48)
- Frequent start protection (66)
- Phase sequence/reversal protection (47)
- Over- and undervoltage protection (59, 27), single phase
- Programmable stages, which are freely assignable to any analogue measurement

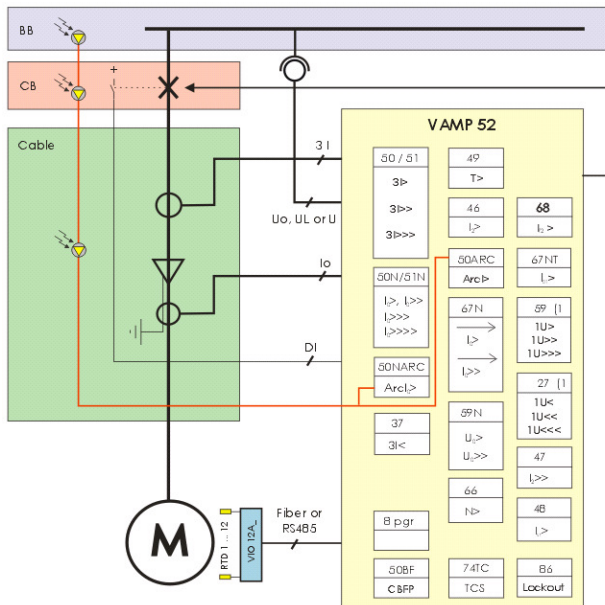


Figure 2. Vamp 52 application example in motor mode where integrated arc protection is required.

## User-friendliness in focus

User-friendliness has always been the term to describe the Vamp products. The Vamp 50 series is not an exception. A great deal of effort has gone into further improvement of user-friendliness/development of operational features.

As a result, Vamp 52 will offer the following advantages:

- Completely new HMI with large display and 10 LEDs to indicate the necessary information to the operator, 2 user-defined function buttons

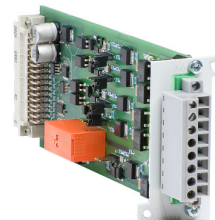
- Multilingual support on HMI and user configurable legend texts for the LEDs and function buttons.



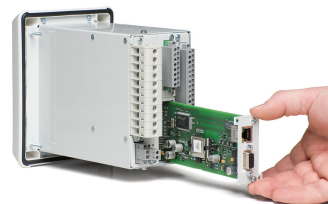
- USB port for local configuration.



- Flexible I/O option concept, including additional DI/DO and arc protection functionality. I/O options are self-adaptive and can be added later on at site.



- Flexible communication option concept, including interface to support RS 232, RS 485, Fiber optics, Ethernet and IEC 61850. Communication options are self-adaptive and can be added later on at site.



### **Flexible digital I/O configuration**

VAMP 50 series includes always minimum 2 digital inputs and 5 digital outputs. There is an optional I/O's, including the following variant:

- 4 digital inputs (DI) and 1 digital outputs (DO). DO is especially intended for TCS (trip circuit supervision) applications.

Required threshold voltage can be selected in the ordering code for the digital inputs. The supported threshold voltages (nominal) are:

- 24 VDC
- 110 VDC
- 220 VDC

### **Sensitive residual current (Io) input (option)**

It is possible to have 0.2 A and 1.0 A rated current inputs for earth fault current measurement. Since this is a hardware option, it must be specified in the order code. These inputs are more sensitive to low earth fault currents.

### **Arc fault protection (option)**

VAMP 50 series can be equipped with an arc fault protection card. If the arc protection option is selected the relays also measure light via arc sensor channels monitoring the whole switchgear. Should an arcing fault occur in the switchgear the arc protection system provides an extremely fast tripping of the circuit breaker. The fault will be prevented from spreading and quickly isolated, which may save human lives and valuable economical assets. Fault current criteria can be applied in combination to light information to improve arc protection selectivity.

### **Inbuilt IEC 61850 (option)**

VAMP 50 series can now be equipped with a new in-built IEC 61850 interface. The IEC 61850 solution is a 'native implementation', which means that the 61850 functionality is implemented with software to the CPU. - no additional processor or gateway module is needed.

The 61850 protocol can be used to read or write static or to receive events sent spontaneously from the relay. In addition, the interface allows peer-to-peer

communication between the relays - this is called Goose communication. The 61850 interface is configured with familiar, user-friendly Vampset software., which is also used to produce ICD files, which may be needed for the substation RTU configuration.

### **Inbuilt Ethernet (option)**

VAMP 50 series supports full Ethernet connectivity, with optional hardware. The Ethernet option interface is RJ-45 (10-Base T Port) and it has status led's to indicate availability and activity on the LAN network.

### **Availability**

This release is available for orders from 31<sup>st</sup> January 2010 onwards and for deliveries according to the normal delivery schedule.

### **User documentation**

The functionality introduced above is described in following user documentation

- User manual, VM50.EN004 (English)
- Application note AN61850.EN001, IEC61850 interface configuration for VAMP 50,51,52,257,259
- Brochure, VB50.EN002 (English)

The above documentation will be found at <http://www.vamp.fi> on 30<sup>th</sup> December 2009.

### **VAMPSET software required to support VAMP 50 series**

In order to get above mentioned features available on the VAMPSET software v. 2.2.15 or greater is required. The latest VAMPSET software is downloadable at [www.vamp.fi](http://www.vamp.fi)

In addition the compressed .zip archive contains:

- an example file of the VAMP 50 default configuration.
- required USB driver for Vampset

