

GROUND-FAULT MONITORS

IFT-120



VT-120



DESCRIPTION

In most industrial environments, ground faults can cause important damage. Just one ground fault could force your production to slow down or even stop it all together. The solutions we bring you, the **IFT-120** and **VT-120**, allow for rapid and precise locating of the affected equipment.

Here are a few of the adverse effects that can be caused by ground faults:

- Loss of production
- Burnt motors
- Blown electrical and electronic equipment (computers, PLCs, relays, etc.)
- Fire hazards
- Electrocution hazards

Ground faults are often inevitable . However, the solutions provided by Controlab offer you a means of rapidly neutralizing the problem thus saving you from the often costly and dangerous consequences.

As soon as a piece of equipment, monitored by the **IFT-120** or **VT-120**, presents a ground-fault situation above the set detection level, the **IFT-120** or **VT-120** will light its LED and activate its contacts. The normally open (N/O) or normally closed (N/C) contacts can be used to signal an automation system (such as a PLC). Or it can be used for direct control of an alarm or even of the equipment it is monitoring (via the magnetic contactor). The monitors will remain in the alarm state (contacts and LED active) until a manual reset is performed. This permits the maintenance personnel to locate the problematic equipment even if the problem is of an intermittent nature. Also available is the optional **RL-Kit** which is a remote light indicator designed to be installed on the front of the control panel for an even easier and faster way of visualizing the faulty equipment.

The benefits of installing a Controlab ground-fault monitor:

- The ability to rapidly and precisely identify the source of a ground-fault, even if it is intermittent
- The protection of your production by minimizing the necessity of having to stop or slow down production
- Added protection against fire and other damage from short-circuits
- Added protection from shock hazards
- Added protection to your electrical and electronic control equipment

CONTACT YOUR LOCAL DISTRIBUTOR

FEATURES

High quality construction

- Two (2) year limited warranty
- UL and ULc recognized
- Potted in epoxy, these monitors are highly resistant to harsh environments such as dust, humidity, toxic vapors and vibrations.

Easy to install

- Factory calibrated, no adjustments required
- Thanks to their small size, the IFT-120 and VT-120 can fit in almost any control panel

Four (4) preset current detection levels

- (IFT-120 only - See Specifications)

Four (4) preset response times

- (IFT-120 only - See Specifications)

Technology based on the "Zero Sequence" principle

- The IFT-120 and VT-120 operate on the "Zero Sequence". This method uses a current transformer (C. T.) through which all three phase wires are passed. Under normal operating conditions, the sum of the currents flowing through the C.T. are equal to zero. When a ground-fault occurs, and the detection level and timing conditions are met, an alarm condition is generated. A current unbalance condition (such as a motor start up) will not trigger an alarm since the sum of the currents passing through the C.T. is still equal to zero.

Entirely factory calibrated

- Easy to install; ready to run

Visual alarm indicator

- Given the importance of a visual status indicator on the front of a control panel, an optional remote light kit (RL-Kit) can be connected to any of our ground-fault monitors. The condition of the indicators can be verified by connecting a push button to the appropriate terminals. When a fault is encountered, the monitors remain in the alarm state until a manual reset is performed, thus giving the indication of where a fault occurred even if it is intermittent.



IFT-120

- Supply 120 VAC
- One contact normally open (N/O)
- One contact normally closed (N/C)
- Green LED indicates proper 120 VAC supply
- Red LED indicates an alarm state
- Connectors for a RESET switch
- Four pre-calibrated current detection levels
- Four pre-calibrated response times
- Ready for optional remote LED indicator
- Possibility of installing a test switch for the indicator lights

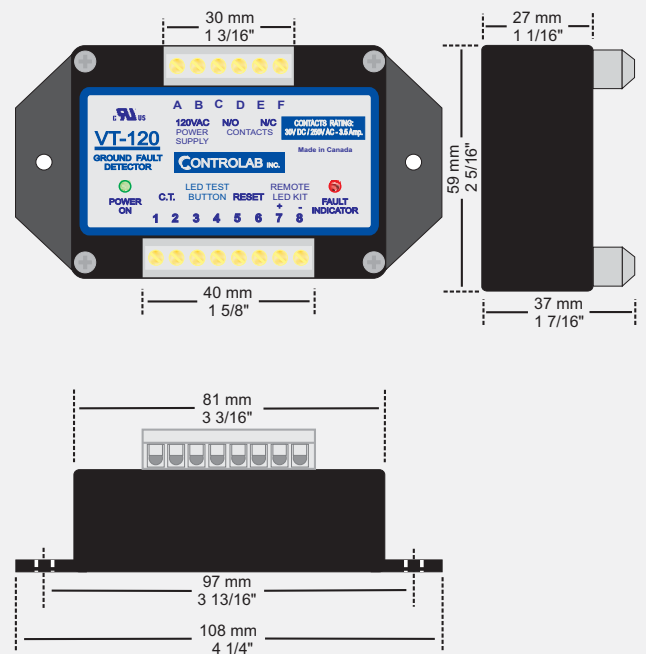
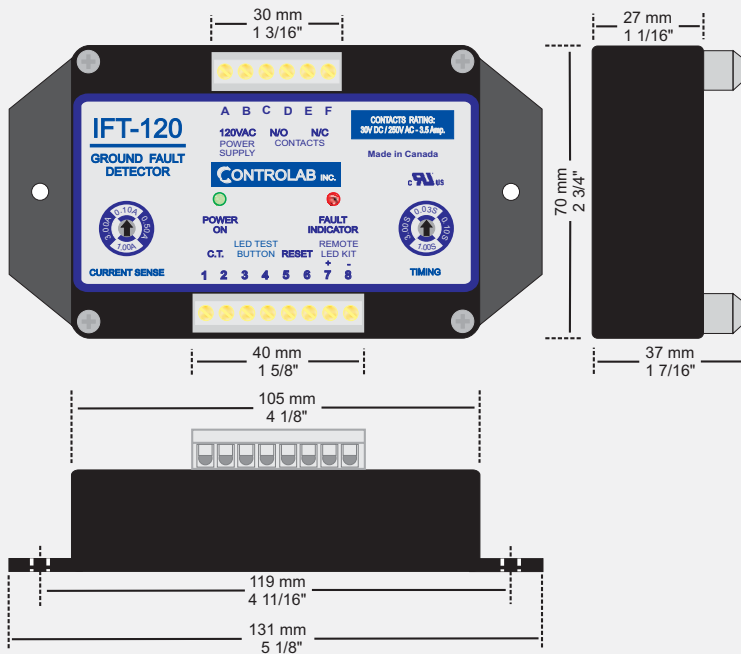


VT-120

- Supply 120 VAC
- One contact normally open (N/O)
- One contact normally closed (N/C)
- Green LED indicates proper 120 VAC supply
- Red LED indicates an alarm state
- Connectors for a RESET switch
- One pre-calibrated current detection level
- One pre-calibrated response time
- Ready for optional remote LED indicator
- Possibility of installing a test switch for the indicator lights

IFT-120

VT-120



SPECIFICATIONS

Power requirements

120VAC 3 mA stand-by / 15 mA alarm

Response time

IFT-120: Pre-calibrated: 30msec, 100msec, 1sec and 3sec

(Option: **other response times available on request**)

VT-120: Pre-calibrated: 100msec

Ground-fault current detection levels

IFT-120: Pre-calibrated: 100mA, 300mA, 1A and 3A

(Option: other current detection adjustments available on request)

VT-120: Pre-calibrated: 500mA

(Option: other current detection adjustments available on request)

Contact (N/O and N/C) ratings

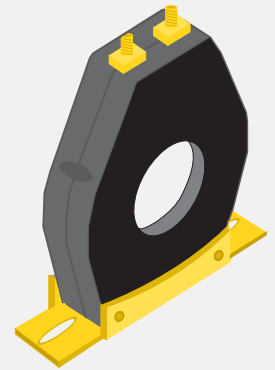
Reed: 30 VDC / 250VAC @ 3.5A

Current transformer (C.T.)

2.06in.(4.5cm) 500:5; or 4.25in 500:5 ----- 50-400 Hz ; 600V ins. Class 10KV. Bil

Grounded system

The **IFT-120** and the **VT-120** are designed to operate on a **GROUND**ED "Y" or **GROUND**ED "DELTA" system.

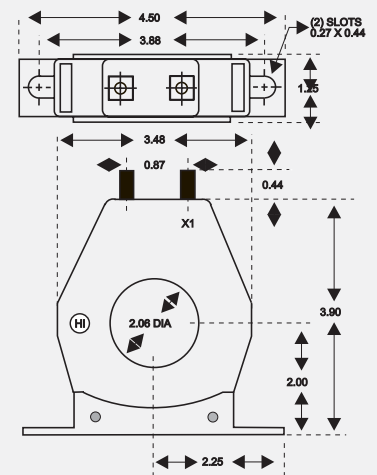


ORDERING INFORMATION

IFT-120/2	Ground-fault monitor supplied with a 2.06in. (4.5cm) C.T. Four (4) current detection levels and four (4) response times pre-adjusted
IFT-120/4	Ground-fault monitor supplied with a 4.25in. (10cm) C.T. Four (4) current detection levels and four (4) response times pre-adjusted
VT-120/2	Ground-fault monitor supplied with a 2.06in. (4.5cm) C.T. One current detection level and one fixed response time pre-adjusted
VT-120/4	Ground-fault monitor supplied with a 4.25in. (10cm) C.T. One current detection level and one fixed response time pre-adjusted
RL-Kit	Remote LED kit for the IFT-120 and VT-120

Options

- Response time can be adjusted for your specific requirements: (IFT-120 only)
- Ground-fault current level can be adjusted for your specific requirements: (IFT-120)



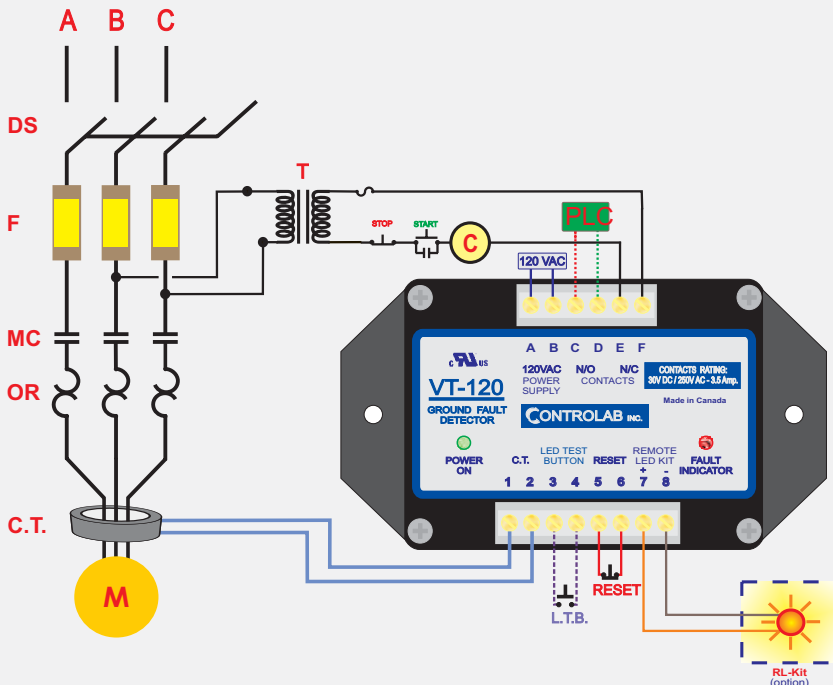
SELECTION CHART

GROUND-FAULT MONITORS IFT-120 AND VT-120

	IFT-120	VT-120
120V AC supply	Yes	Yes
Adjustable response time	Yes	No
Adjustable current detection levels	Yes	No
Fault indicator (red led) on the monitor	Yes	Yes
120V AC power good indicator (green led) on the monitor	Yes	Yes
Possibility of adding a remote fault indicator (RL-Kit)	Yes	Yes
One normally open contact (N/O). Rated at: 250V AC / 30V DC - 3.5 Amp.	Yes	Yes
One normally closed contact (N/C). Rated at: 250V AC / 30V DC - 3.5 Amp.	Yes	Yes
Compatible with 2.06 inch (4.5 cm) C.T.	Yes	Yes
Compatible with 4.25 inch (10 cm) C.T.	Yes	Yes
Other current detection levels on request	Option	Option
Other response times on request	Option	No
Certification UL and ULC	Yes	Yes
2 year limited warranty	Yes	Yes

INSTALLATION INSTRUCTIONS FOR IFT-120 & VT-120

- 1- Pass the three phase wires (and neutral wire, if used) through the center of the current transformer (C.T.).
- 2- Connect the C.T. output to terminals 1 and 2 of the IFT-120 or VT-120 (use shielded wires).
- 3- For the operation and resetting of the monitors, connect a normally closed push button between terminals 5 and 6.
- 4- Connect 120VAC supply line to terminals A and B on the monitors.
- 5- To transmit information to a PLC or other Automation system, you can connect a signal line to terminals C and D for a normally open (N/O) contact or between E and F for a normally closed (N/C) contact. (see schematic below for example)
- 6- To stop the monitored equipment, connect the magnetic contactor in series with the normally closed (N/C) contact at terminals E and F. (see schematic below)
- 7- To connect the optional remote LED (RL-Kit), connect the orange lead to terminal 7 (+) and the brown lead to terminal 8 (-).
- 8- To verify the operation of the fault indicator on the monitor and/or the RL-Kit, connect a normally open (N/O) pushbutton between terminals 3 and 4 (L.T.B in schematic below)
- 9- To verify the proper operation of the whole system (including the C.T.), we suggest you pass a charge through the C.T. of .5A greater than the set detection level (eg: if the detection level is set at 3A, then you should pass a charge of 3.5A). For example: a simple way of testing the 500mA setting is to pass a wire using a 120V-100W light bulb as a load (gives about 800mA).
 Note: During this test, do not pass the return wire through the C.T. as the the current will balance and no reading will be possible.



- DS: Disconnect Switch
- F: Fuses
- MC: Magnetic Contactor
- C: Contactor Coil
- T: Transformer (control)
- OR: Overload Relay
- M: Motor
- C.T.: Current Transformer
- RL-Kit: Remote Led kit
- C.T.B.: Circuit Test Button
- L.T.B.: Led Test Button
- RESET: Reset