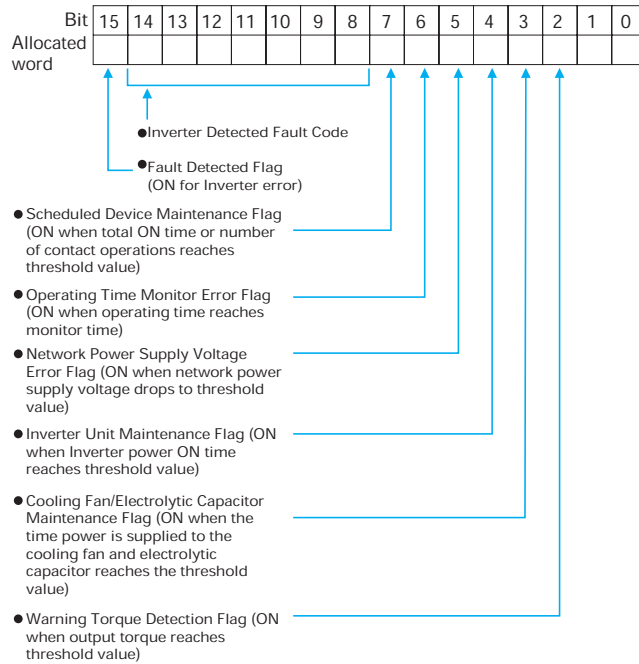


■New Data Allocations in the PLC

The 3G3MV-PDRT2/3G3RV-PDRT2 DeviceNet Communications Unit/Card can be allocated a word in I/O memory in the PLC's CPU Unit for the following data. This is in addition to the basic data, such as the frequency reference input, for which allocation was previously possible. This enables easy monitoring of the statuses of the Inverter and peripheral devices from the PLC.

●Unit Status

The following status is transferred to the PLC as Smart Slave status.



●Multi-function Input Monitor

The ON/OFF status of Inverter multi-function inputs is transferred to the PLC. If the multi-function inputs are not used as multi-function inputs, they can be used as general-purpose inputs for sensors and other devices.

■Standard Mode Is

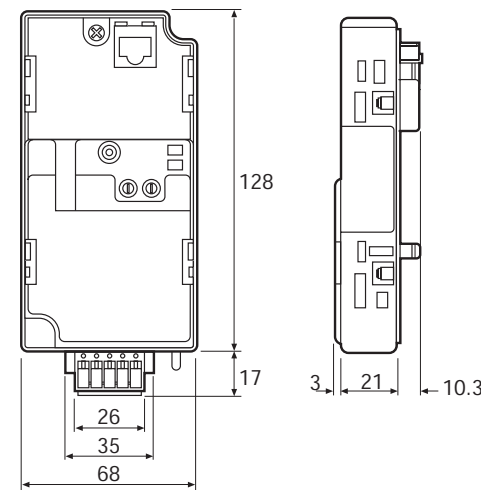
Models	Applicable Inverter
3G3MV-PDRT2	3G3MV Inverters
3G3RV-PDRT2	3G3RV or 3G3FV Inverters

■Specifications

Item	Specifications
Type of communications	<ul style="list-style-type: none"> ● Remote I/O communications (I/O is automatically exchanged between PLC and Inverter without special programming in the PLC.) ● Explicit message communications (Special instructions are used in the PLC to read and write internal Inverter parameters when required.)
Remote I/O communications	<ul style="list-style-type: none"> • PLC to Inverter: Frequency reference, forward/reverse/stop commands, multi-function outputs, etc. • Inverter to PLC: Forward/reverse status, output current values, multi-function input status, Unit status, etc.
Smart Slave Functions	Warning torque detection function, current trace function, operating time monitor function, total ON time monitor function, contact operations monitor function, Power ON time monitor function, average power monitor function, automatic baud rate detection, network power supply voltage monitoring
Hardware Specifications	Communications power supply: 11 to 25 VDC Internal circuits: Power supplied from Inverter. Ambient operating temperature: Same as Inverter. (3G3MV: -10 to 50°C) (3G3RV: -10 to 45°C)

■Dimensions (Unit: mm)

3G3MV-PDRT2



Note: The 3G3RV-PDRT2 is built into the Inverter and thus does not affect external dimensions.

*DeviceNet is a registered trademark of the ODVA.

Note: Do not use this document to operate the Unit.

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Note: Specifications subject to change without notice.

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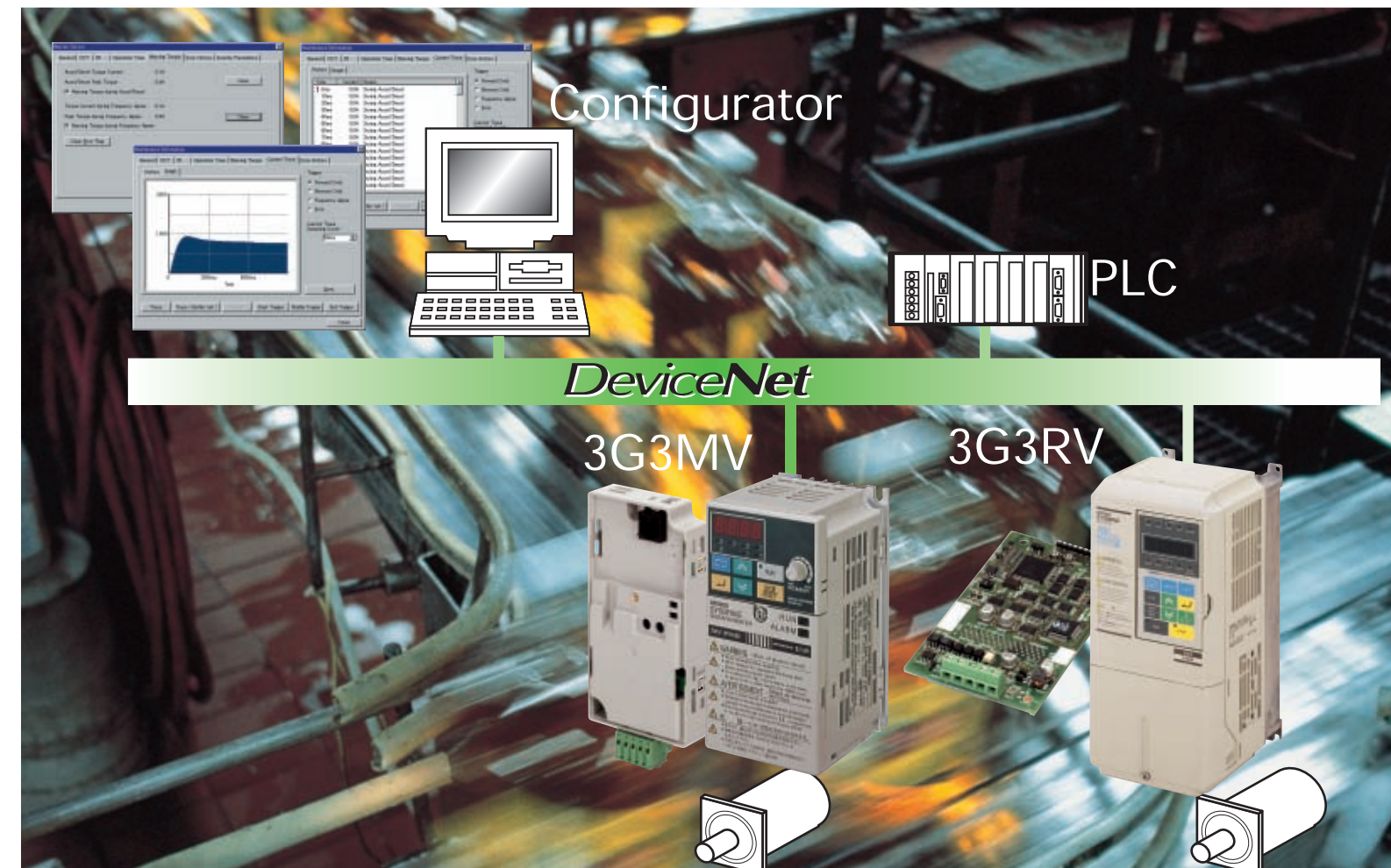
New!

OMRON

DeviceNet Communications Unit and Card

3G3MV-PDRT2 (Unit for 3G3MV Inverters)
3G3RV-PDRT2 (Card for 3G3RV or 3G3FV Inverters)

This optional Communications Card and Unit enable connecting OMRON 3G3MV, 3G3RV, and 3G3FV Inverters to a DeviceNet network. They function as Smart Slaves to strengthen preventive maintenance for OMRON-based DeviceNet facilities.



Constant Inverter Evolution

PLUS

- Preventive maintenance functions
- Error monitoring
- Energy saving functions

- Remote I/O communications with PLCs (to provide frequency references, status monitoring, and more)
- Setting and monitoring all Inverter parameters from a PLC or Configurator

3G3MV-PDRT2 (3G3MV Communications Unit)
3G3RV-PDRT2 (3G3RV/FV Communications Card)

3G3MV-PDRT1-SINV1 (3G3MV Communications Unit)
3G3FV-PDRT1-SINV1 (3G3RV/FV Communications Card)

**Innovation
in the Solution Age**
OMRON INDUSTRIAL AUTOMATION

DeviceNet™
CONFORMANCE TESTED

OMRON Inverters continue to evolve.

OMRON Inverters have evolved from simple motor control devices to facilities information terminals, contributing to a more stable life cycle and higher productivity of facilities.

Do you face these problems with your inverters?

Detecting Potential Errors

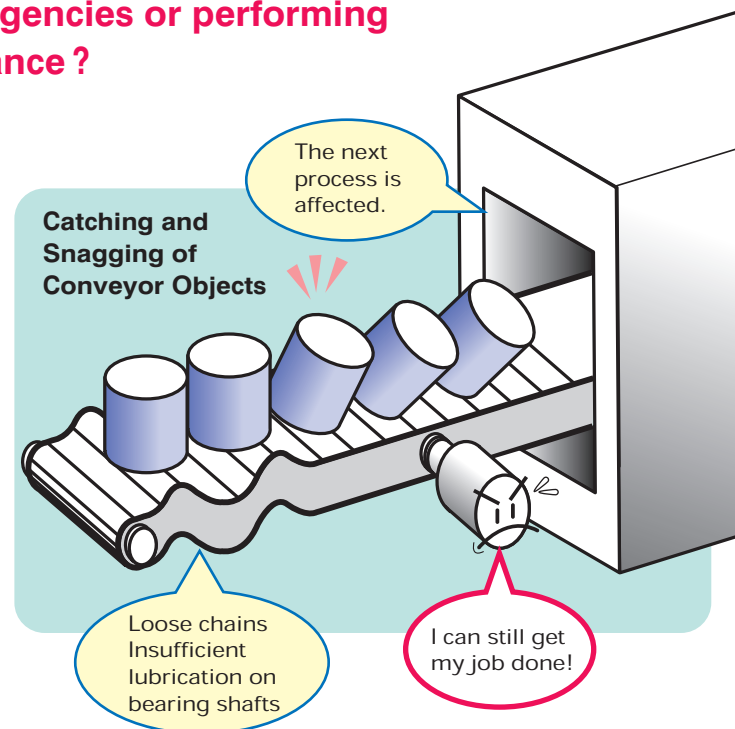
Would advanced status information help prevent stopping the line in emergencies or performing emergency line maintenance?

Example 1

Although a motor will continue operation even under the load caused by an aging mechanical system or conveyor objects falling over, an emergency stop on the line is inevitable, affecting the next process.

Example 2

The limited life of cooling fans, electrolytic capacitors, and other parts in Inverters can cause unexpected Inverter errors. Peripheral Inverter devices, such as motors and cylinders, also have a limited life, and emergency line stoppage can occur as these devices age.



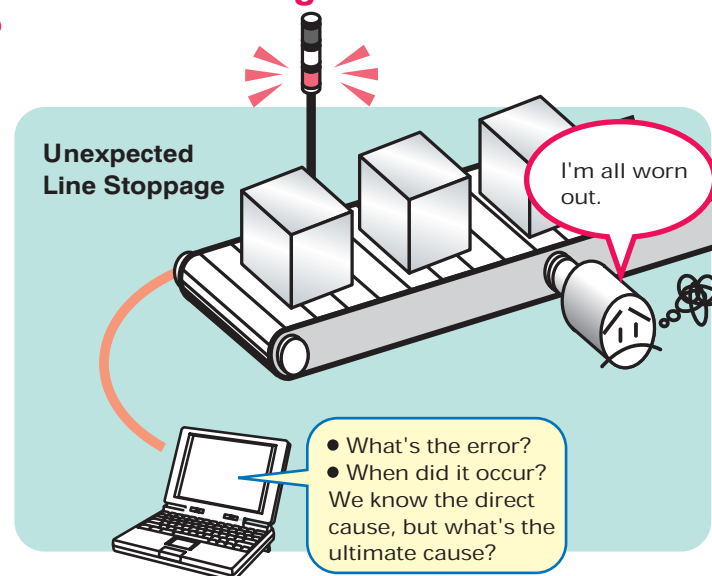
Productivity and Through-put Are Reduced

Troubleshooting Errors

Does post-error troubleshooting tell you no more than the direct cause of the problem even though both time and money are required?

Example 3

Troubleshooting errors after an emergency stop requires time to determine what the error actually was, when it occurred, and what the cause was. In the end, you find out that a separate system must be introduced and that much must be left to human experience and judgement.



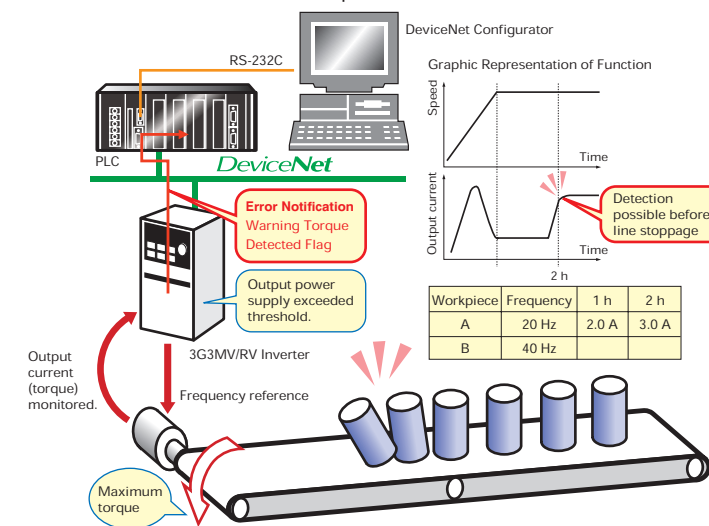
Productivity Is Reduced and Total Costs Increased.

Smart Slave Functions provide easy user maintenance through fault analysis and prediction functions developed through years of DeviceNet experience.

Warning Torque Detection Function

This function provides a warning when the threshold value set for the output current (torque) during steady-state operation or during acceleration and deceleration is exceeded.

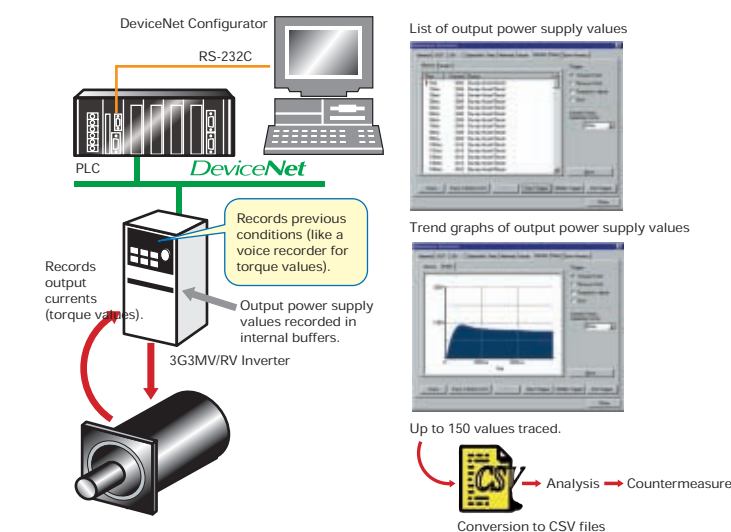
This enables equipment maintenance to be performed before an unexpected stoppage occurs because the increased load caused by mechanical wear (including loose belts and chains, and friction caused by conveyor objects) can be detected before the line stops.



Current Trace Function

This function traces the waveform of the current output to the motor and records it as samples. The output current (torque) is recorded in a maximum of 150 registers according to the sampling period (10 ms, 2 ms, ... 100 s). The trigger can be specified as the forward/reverse command, frequency agreement, error occurrence, or a manual button operation. By selecting the proper trigger, the output current (torque) can be traced under the desired conditions, such as prior to error occurrence. The trace data can also be saved in CSV format for conversion to graphs and analysis using Excel or other software.

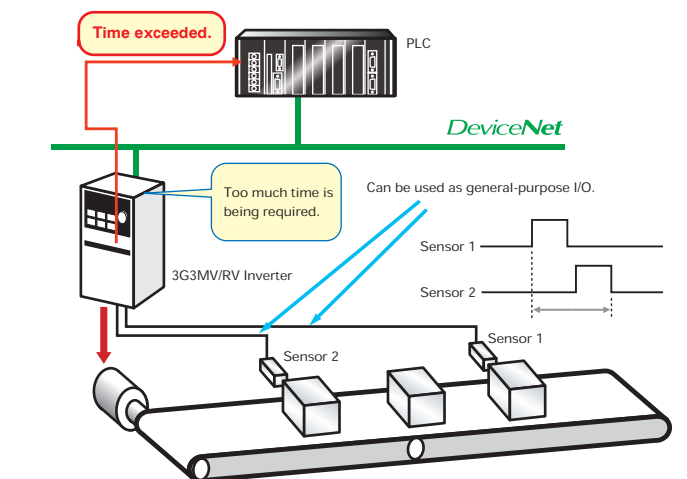
In other words, the cause of the stoppage can be analyzed and countermeasures taken without connecting additional measurement or monitoring devices.



Operating Time Monitor Function and General-purpose I/O Import Function

When the Inverter's multi-function I/O is not directly used by the Inverter, it is possible to connect sensors or other devices and read the status of this I/O through DeviceNet. Also, the time required from the time a general-purpose I/O or the forward/reverse command turns ON until a general-purpose input turns ON can be monitored and an alarm can be output if the monitor time is exceeded.

In other words, the number of general-purpose I/O can be reduced to eliminate the need to connect an excessive number of I/O terminals by using the Inverter to monitor general-purpose I/O.



Remote I/O Communications Lighten the Network Communications Load for Multiple Inverters

If a CS/CJ DeviceNet Unit is used as a Master on the PLC, changes in Inverter Unit status or a multi-function input (see note 1) can trigger sending data to the PLC (see note 2). Using this method, a system can be built in which the communications load on the DeviceNet network is not affected to any meaningful degree.

Note 1: Refer to the next page for Unit status and multi-function input monitoring.
2: A COS (Change of State) connection.

Other Functions

- Cumulative ON Time Monitor Function**
 This function totals the ON time of Inverter general-purpose I/O. (Example: Operating time can be monitored by totaling the ON time of the RUN output contact. Replacement periods for external I/O devices can also be monitored.)
- Contact Operations Monitor Function**
 This function counts the number of ON/OFF operations of Inverter general-purpose I/O. (Example: Replacement periods for external I/O devices can be monitored.)
- Power ON Monitor Function**
 This function totals the time that the power supply to the Inverter is turned ON. (Example: Replacement periods for cooling fans and internal electrolytic capacitors can be monitored.)
- Average Power Monitor Function**
 This function monitors the power supplied by the Inverter each hour and averages it to enable estimating consumed power. (Example: Achievements of power saving measures can be monitored.)