

# Channel count and isolation

Other features only matter when these basic measurement requirements are met  
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A ScopeCorder is a powerful portable data acquisition recorder that combines features of a multi-channel digital oscilloscope and a high-performance oscillographic recorder. As such, it can capture and analyse both short-term transient events and long-term trends for periods up to 200 days.

Quite often discussions are held about the array of requirements that need to be met for a specific measurement application. It can be a tough job to identify the importance of these requirements. At a customer site, an experienced test engineer told us: "It only makes sense to discuss all other features and functions once the basic measurement needs are met."

We cannot agree more. But what are these basic measurement needs and why are they so important?

A lot of applications combine a large number of different signals with high power specifications. Taking this into account, a basic measurement setup should fulfil at least the following two main requirements:

- There should be sufficient channels with the appropriate signal conditioning
- Channels should be sufficiently isolated

With a ScopeCorder, Yokogawa offers a solution that more than satisfies these essential requirements.

## Flexible and swappable input modules

The ScopeCorder's modular design allows users to choose from a range of 19 types of input modules, with resolutions up to 16 bit, each with built-in signal conditioning, and install up to eight of these modules in the instrument at any time.

This setup allows measurements on up to 128 channels with a mixed selection of data-acquisition cards to measure parameters such as:

- Voltage and current
- Temperature, vibration/acceleration, strain and frequency
- Logic signals and CAN/LIN/SENT bus signals
- Sensor outputs (using scaling functions)



The flexibility of this modular platform enabled the ScopeCorder to be configured to perfectly suit the requirements of the test engineer's application. For his application it was necessary to measure eight high speed channels and six sensor- and logic data inputs simultaneously. As these measurements were time-synchronised, the customer was able to easily find relationships between different measurements.

## Isolated and shielded measurement channels

Channel isolation allows measurements to be carried out on floating signals or to measure at different points of a circuit, where the grounds of those points are at different potentials, without having to use any special differential probes.

The housing for the input modules includes both shielding for the single input channel and extra shielding for the housing of the input module. Using this double shielding

method, with the input channels inside the input modules, results in high noise rejection.

The test engineer's application included measurement signals from a frequency inverter, in combination with temperature and angular measurements. The high-efficiency inverter employs high voltages, large currents, and high switching speeds. To meet these specifications, a special input module incorporating Yokogawa's isoPRO™ core technology was used. Using internal high-speed optical fibre-based transmission, this module achieves high sample rates (up to 100 MS/s) and high resolution (12 bits), and provides the direct connectivity as well as the measurement performance needed for precise measurement of the fast switching signals.



**isoPRO™**

## Satisfy your other measurement requirements

To learn more about a ScopeCorder's many other features and how they can solve your measurement needs, please also read "[10 reasons to choose a ScopeCorder as your next measuring instrument](#)".

Product details and manuals can be found via [this link](#).