Common Items – Scroll below to see specific calibrators

1. What is the difference between the international standards of IPTS68 and ITS90 for thermocouples and resistance temperature detectors?

IPTS68 means the International Practical Temperature Scale which was enacted in 1968. In the meantime, IPTS68 was revised to ITS90 in 1990, thermocouples and resistance temperature detectors were reflected to New JIS1995 and to New JIS1997 respectively.

2. Calibrator sources unit of thermocouple generating an electromotive force which is equivalent to 20℃, while the display is over 40℃. Why there is so much difference between them?
(Reference junction compensation per RJ sensor)

It is because that the room temperature is added to the setting temperature of 20 ℃ It is recommended to carry out the reference junction compensation by RJ sensor to solve this problem The use of cold junction compensator enables the reference junction to be 0℃. In the meantime, cold junction compensation involves measuring the temperature of reference junction, calculating the temperature difference (thermoelectric power difference) from 0℃, and then carrying out compensation based on the result. When the calibrator outputs the referenced 0℃, calibrator output setting and the display of device to be calibrated do not match. This is because the terminal temperature, connecting to thermocouple is added to electromotive force from 0℃. Therefore, the calibrator is required to output the referenced terminal temperature of device under calibration. That is, measure the terminal temperature of device for calibration by means of optional RJ sensor and generate the electromotive force by reference junction compensation. Some of the calibrators can be used by selecting the built-in RJ sensor, but the accuracy may not necessarily be guaranteed. For further details, please refer to instruction manual.

3. The resistance value being generated by calibrator is measured by digital multi meter. Why does DMM show a different resistance value?

It is assumed that the DMM measuring current does not coincide with the calibrator excitation current. Please set the DMM to fixed range to meet the generated resistance value unlike the setting it to auto range. Our calibrator receives the resistance measuring current which is given by the unit to be calibrated and ouptuts(2V max) between the output terminals which is proportional to set resistance value(R) of voltage V = RXI, generating "false resistance value" of R = V/I.

CA11E / CA12E Handy Calibrators

1. Can the automatic Power-off feature be turned off?

The default setting of the automatic power-off feature is on. It can be turned off by removing the rear cover of the main unit and sliding dip switch no. 4 to ON.

2. Can the standard measurement/source lead cables be used to connect a BNC cable?

The standard accessory lead cables for measurement and source are not usable to connect to a BNC cable. Instead, Yokogawa Model 369922 conversion adaptor must be used.

CA71 Handy Calibrator

1. How is the built-in reference junction compensation sensor turned on?

The built-in reference junction compensation sensor is set to on by dip switch "3 INT R" to ON position. The built-in sensor will then output the reference junction compensation signal. However, for improved accuracy it is necessary to use the optional RJ sensor, B9108WA.

2. If an external RJ sensor is not being used why does RJON still appear in the display?

RJON display without having the external reference junction compensation sensor in use means that the internal reference junction compensation feature has been set to on by its controlling dip switch.

3. Is it possible to set the function changeover between the current output and the voltage output in RS232C communication function?

If this feature is required, the CA150 Handy Calibrator enables the changeover and setting of function/range by means of serial communication.

4. When using the external reference junction compensation sensor there is still a large error between the generated temperature and the displayed temperature of the unit being calibrated. What could cause such a large error?

There are a number of possible causes. It may be that the equipment being calibrated uses a switching power supply. If that is so the switching noise of the equipment being calibrated is affecting the CA71 output. Grounding the equipment may lessen the noise.

CA150 Handy Calibrator

1. Is it possible to set the current output and voltage output by RS232C communication function? Is function setting also available?

It is possible to set current output, voltage output and functions using the RS232C communication feature.

2. What do you mean by CPM and CPH specified in the frequency range in the specifications sheet?

When in the MEASURE mode for pulse signal integration CPM is the count of the number of pulses per minute and CPH is the count of the number of pulses per hour.

3. When trying to use the RS232C communication we receive error code Err11.What needs to be done to avoid this?

Error code Err11 means that an incorrect command is being transmitted. Please note that all commands must be in capital letters.

4. The high limit for a sweep function can be set, but there is no setting for the low limit. Why is this?

Since the sweep function starts at 0V only the high limit can be set.

5. We buy either the AC adaptor or a NiMH (nickel hydride battery). If the battery is bought, does the AC adaptor also need to be bought?

The AC adaptor works without the NiMH battery, but it is needed to charge the battery.

6. What is the difference between the carrying case (93026) and the main body case (93027)?

The 93026 carrying case is large enough to hold the main body plus source/measurement lead cables, terminal adapter, 6 spare batteries, fuse, AC adaptor and instruction manual. The 93027 case is open faced to hold the main unit and includes a strap and a B9108XA style case for carrying some accessories.