



**Fig. 2** The DeltaLog device, shown fitted to a modified Lemo connector of a 3-junction profiling thermocouple, is battery driven and completely self contained

Matthey Metals have developed a small electronic device named DeltaLog which can form an integral part of their range of quartz sheathed multi-junction thermocouples. Housed within the end connector, the device monitors the time and temperature of thermocouple

usage and indicates when re-calibration is necessary.

The indicator consists of a small dot within a glass tube which moves along an adjacent scale at a rate determined by the temperature of usage. When the dot has reached full scale deflection, thermocouple re-calibration is recommended.

A DeltaLog device fitted to a modified Lemo connector of a 3-junction profiling thermocouple is shown in Figure 2. It is completely self contained, being driven by a battery inserted into the device immediately prior to despatch, giving an active life of approximately one year. Thermocouples returned to the Calibration Laboratory of Johnson Matthey Metals Limited are checked and re-calibrated while the DeltaLog indicator is re-set to zero and a new battery inserted in preparation for further use.

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### Acknowledgement

DeltaLog is a Trademark of Johnson Matthey, registration and patents have been applied for.

## The Published Platinum Metal Alloy Systems

**Phase Diagrams of Precious Metal Alloys**, COMPILED BY HE CHUNXIAO, MA GUANGCHEN, WANG WENNA, WANG YONGLI AND ZHAO HUAIZHI, The Metallurgical Industry Press, People's Republic of China, 1983, 301 pages, U.S. \$6.66

Knowledge is of only limited value to society unless it is accessible to all those who can understand and make use of it; indeed it was to make information on the fundamental properties and industrial applications of the platinum group metals more readily available that *Platinum Metals Review* was founded by Johnson Matthey in 1957. Since that time many studies of these metals have been made but, unfortunately, much of the established data still remains widely, and inconveniently, dispersed throughout the literature.

To overcome this difficulty in a particularly important area of materials science a group of colleagues under the guidance of Professor Tan Qinglin, Director of the Institute of Precious Metals, at Kunming in the People's Republic of China, has collected together the phase diagrams of all alloy systems containing the so-called precious metals published up to the end of 1975. Over 500 systems are presented in

this book, including 199 binary, 115 ternary and five quaternary systems that contain a platinum group metal.

In view of the rate of progress in this aspect of physical metallurgy none of the diagrams has been evaluated or reviewed; despite this the publication is a most useful addition to the literature on the platinum group metals. Although nominally in Chinese, English translations are given wherever this is required.

The contents pages list systems in alphabetical order according to the chemical symbols of the component elements. Interestingly, the compilation has enabled gaps in the knowledge to be identified; even among binary systems phase diagrams of rhodium, iridium, osmium and ruthenium are still rather scarce.

This important work may be obtained from the China National Publishing Industrial Trading Corporation, P.O. Box 614, Beijing, People's Republic of China. I.E.C.