

ECFA Meeting

ing the field in the region of the target and focal points. A central shielding core with helical baffles is placed in a 450 mm diameter vacuum chamber to separate the particles coming from the target according to their charge sign. The total weight of the lens is 86 tons and its maximum excitation current is 900 A.

For negative pions with an energy of about 30 MeV, from a 670 MeV proton flux of 10^{12} per second striking a copper target, the following beam parameters were obtained — total intensity: 10^7 s⁻¹; flux 10^5 cm⁻²s⁻¹, stopping intensity: 5×10^4 g⁻¹s⁻¹ in water. For a positive pion beam these parameters are about four times higher. The dose rate in the Bragg peak for a negative pion beam is about 3 rad/min.

It is intended to use the beam for radiobiological and clinical research and also for physics experiments in which it is important to have a high pion stopping intensity.

Conferences

Two meetings which may interest some of our readers:

16-21 June, 'Experimental Status and Theoretical Approaches in Physics at the High Energy Accelerators', The Institute of Particle Physics, International Summer School 1975, to be held at McGill University Montreal, information from — Secretary IPP, Department of Physics, McGill University, P.O. Box 6070 Station A, Montreal, Quebec, Canada H3C3 G1.

1-10 October, 'High Energy Radiation Dosimetry and Protection', to be held at Ettore Majorana International Centre for Scientific Culture, Erice, Sicily, information from — A. Rindi, Lawrence Berkeley Laboratory, University of California, Berkeley, California 94720 USA.

On 27 January, a meeting of the European Committee for Future Accelerators was held at CERN under the Chairmanship of W. Paul. There were two major items for discussion. The first concerned the electron-positron storage ring proposals in Europe, plus the ideas on higher energy proton-proton storage rings at CERN. The second concerned the report of an ECFA Working Group on the internal and the external relations of the European high energy physics community.

The designs of the two proposed high energy electron-positron machines have been covered in CERN COURIER (January, page 12, and this issue, page 37). EPIC was described at the Meeting by the Director of the Rutherford Laboratory, G.H. Stafford, and PETRA by the Director of the DESY Laboratory, H. Schopper. In a hard-hitting debate following the presentations, the scientists from the UK and from the Federal Republic of Germany displayed considerable skill in projecting the differences between the proposals — naturally, to their respective advantages.

In terms of their physics potential, they are largely the same machine. The problem is that, especially in the present economic and social climate, it is generally accepted that two such machines should not be built in Europe. EPIC is seen as essential to ensure the continued vitality of the Rutherford Laboratory and the future of particle physics in the UK, succeeding both the 5 GeV electron synchrotron, NINA, and the 7 GeV proton synchrotron, NIMROD, by 1980. PETRA is seen as vital for the future of the DESY Laboratory and a logical extension of the research on the 7 GeV electron synchrotron and the DORIS storage rings already under way. It is not easy for ECFA to play Solomon in this situation.

The message from ECFA is that there is a very strong physics case for building such a machine and this case has now been greatly reinforced by the discovery and investigation of the fascinating new particles on the SPEAR storage ring at Stanford (see December 1974 issue, page 415 and this issue, page 42).

Either EPIC or PETRA would keep Europe in the frontline of the field of electron colliding beam physics and complement the excellent facilities for proton physics built up at CERN. Both projects are seen as completely open to the full European high energy physics community.

Already Italian physicists, who now do not anticipate having a similar machine (Super ADONE) in Italy in the near future, have made known their intention of continuing to do research with electron-positron colliding beams if facilities become available in Europe well beyond the energy range of ADONE at Frascati. Other countries have also been invited to express their interest in EPIC and/or PETRA.

The report on future proton storage rings by K. Johnsen, was concerned with ideas for much longer term development. Following the Autumn Study (see October 1974, page 334) more detailed sets of parameters have been strung together for storage rings to hold protons up to an energy of 400 GeV and where the CERN 400 GeV proton synchrotron could be used as an injector. Rings built of conventional magnets or of superconducting magnets have been treated and their possible locations in relation to the SPS examined. The ideas are however a long way from being in the form of a proposal like EPIC or PETRA.

'ECFA Working Group 3' was set up almost two years ago to examine the relationships between the constituent

parts of the high energy physics community and the relationship with the community as a whole.

The high energy physics community in Europe can be put into three boxes — the physics Departments in the Universities in all the Member States, the National Institutes and CERN. In the past twenty years the relationships between these component parts appear on the whole to have been very well managed. The success of the community, organizationally as well as scientifically, is often held up as a model. Nevertheless, it was judged right to take a hard look at the European scene, particularly since the general environment in which high energy physics is done is changing rapidly.

The Working Group made a series of recommendations at the end of its discussions and these were presented

at the ECFA Meeting by the Chairman of the Group, J.C. Gunn.

The first recommendations concerned the demographic problem of sustaining a vigorous community at a time when the total number of scientists involved is no longer growing. The Group stressed the need for national bodies and CERN to watch such things as the balance between temporary and permanent appointments in the field.

There were recommendations concerning the detailed problems confronted by visiting scientists working at CERN. While not suggesting any fundamental changes in the system, these recommendations aim to help smooth the mechanisms still further. In the subsequent discussion it was obvious that the scale of high energy physics experimentation is resulting in growing difficulties for scientists in

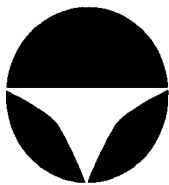
some regions which do not have the support of large National Institutes.

On the relationship between the National Institutes and CERN there is concern about the high centralization of research facilities at CERN. This was seen by some as providing a further argument for the development of an electron-positron colliding beam machine elsewhere. Finally, it was felt that more could be done to project high energy physics to the rest of the community and there were recommendations for action in the field of education, on student programmes at CERN and on visits to research Laboratories.

Professor Paul has become Chairman of the CERN Scientific Policy Committee and Professor G. Von Dardel was elected to succeed him as Chairman of ECFA.

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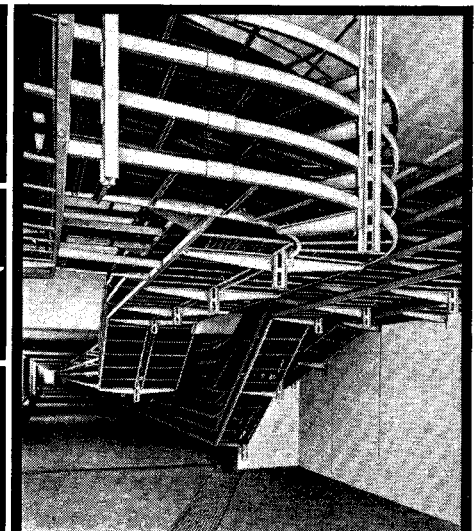
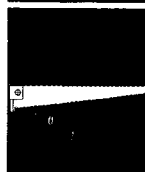
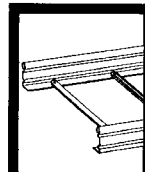
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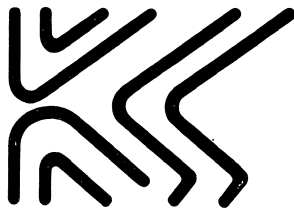


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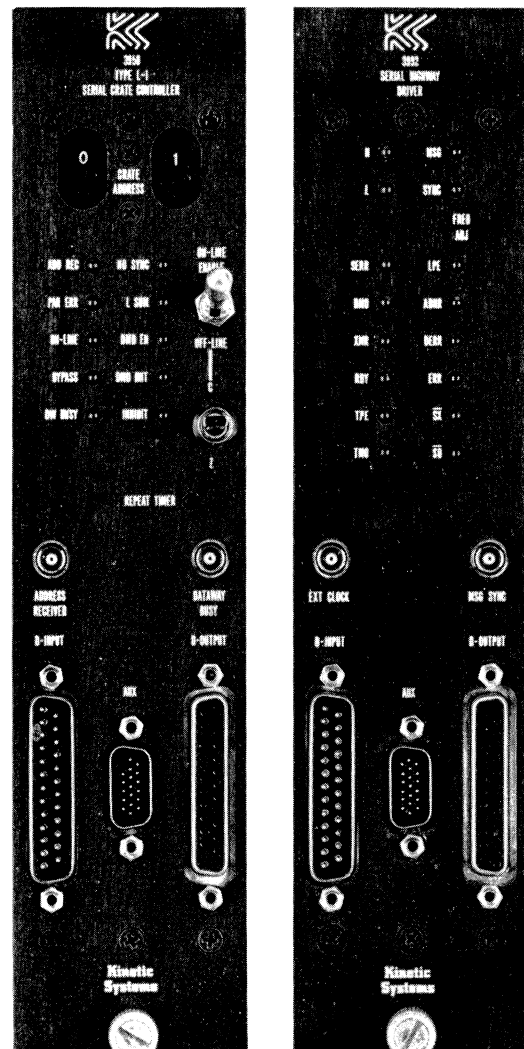
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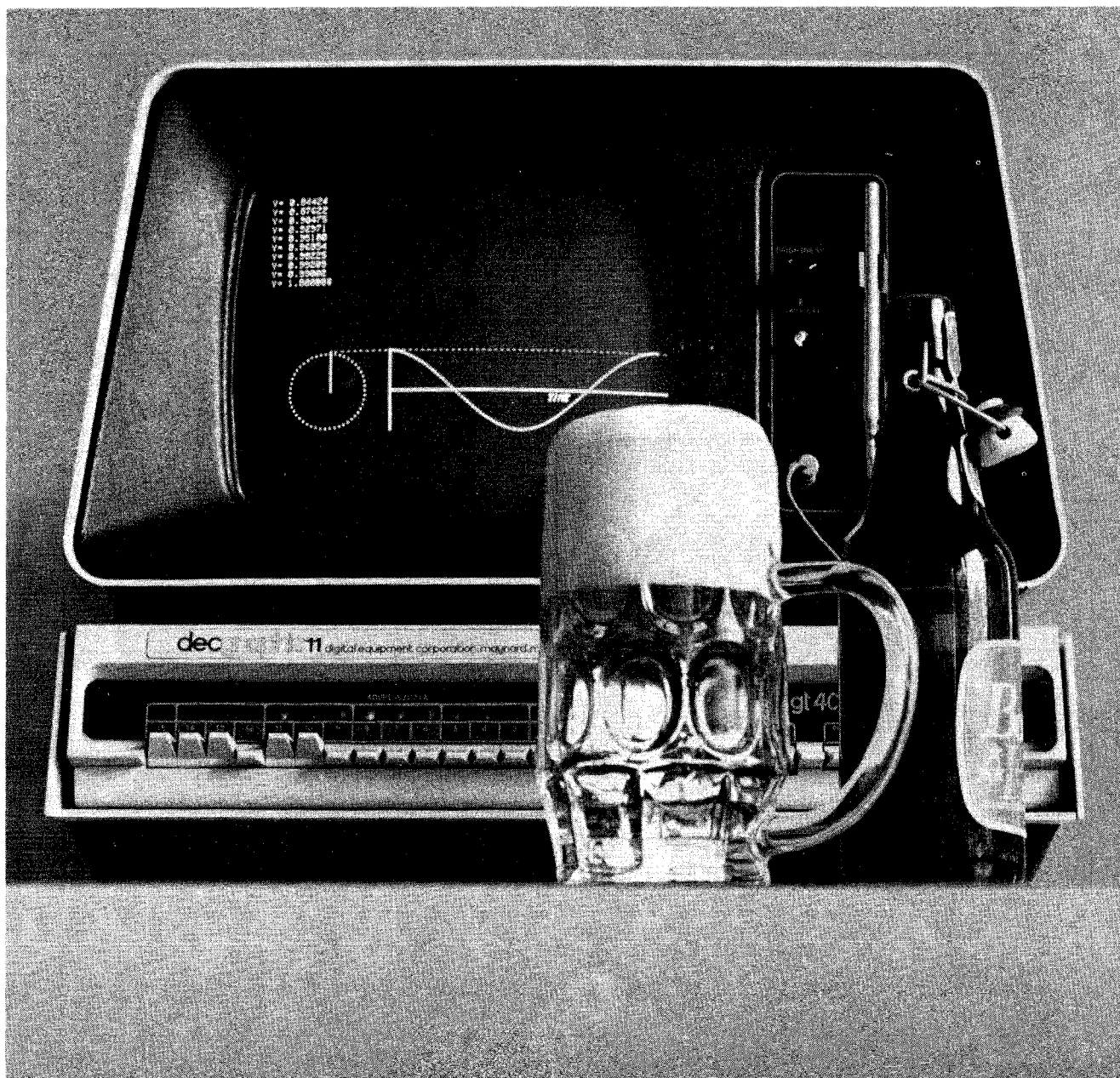
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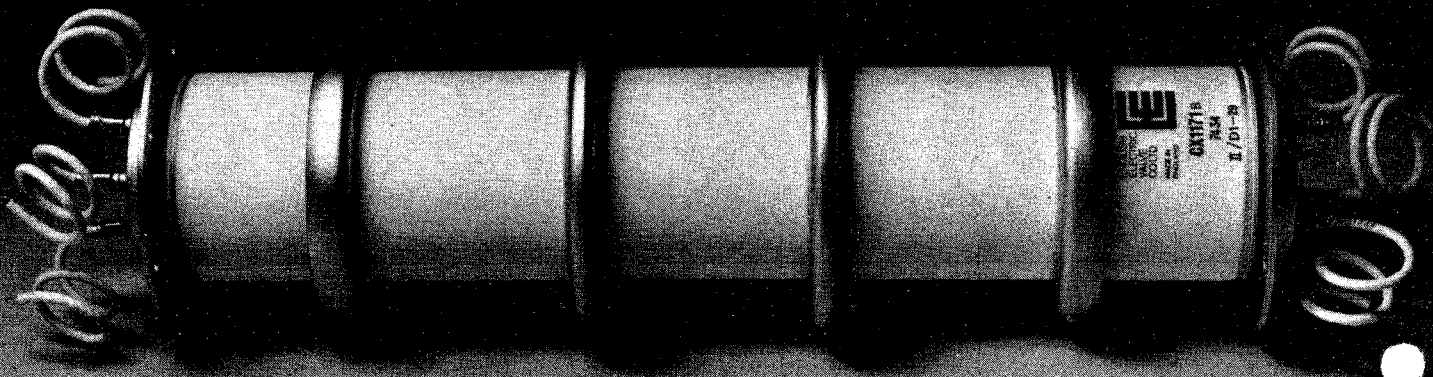
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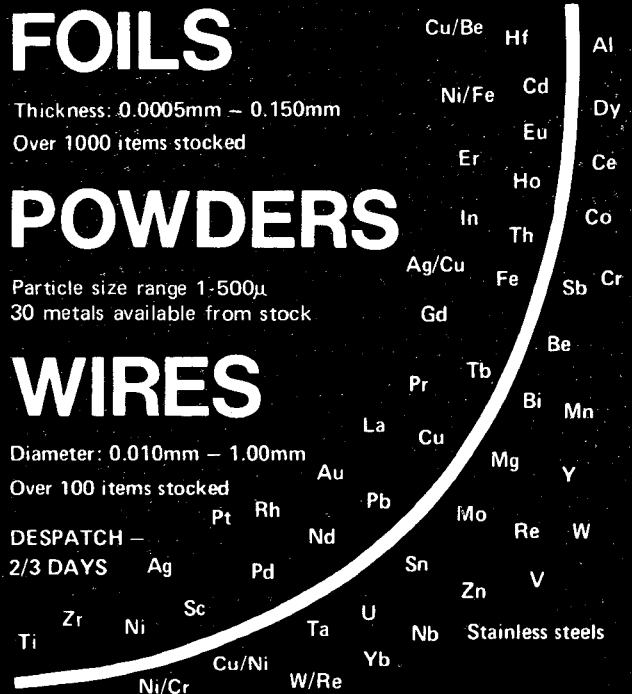
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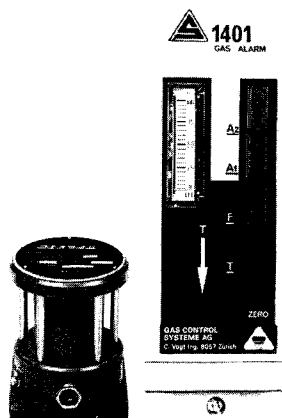
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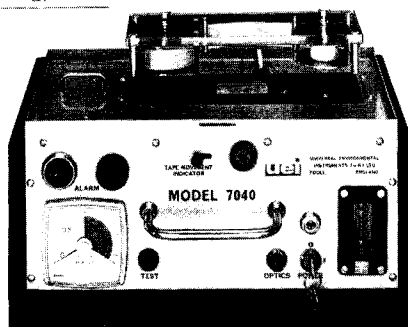
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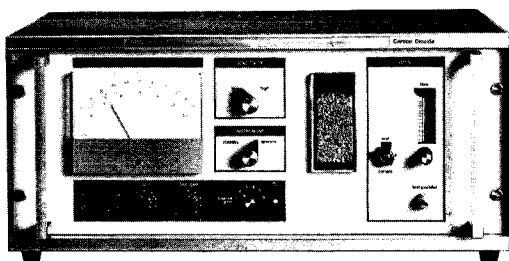
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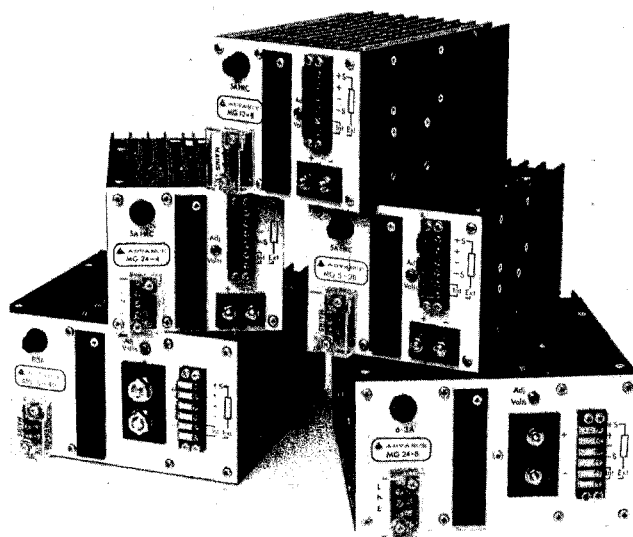
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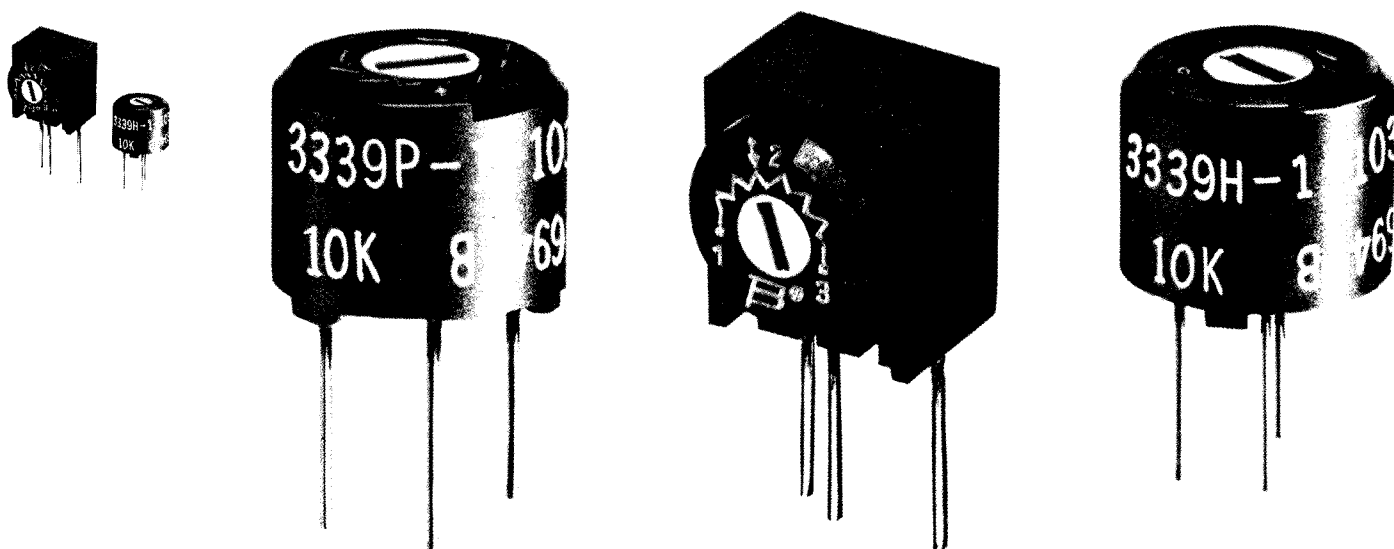
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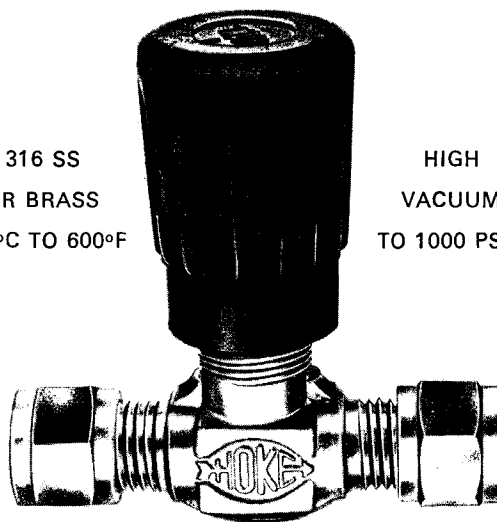
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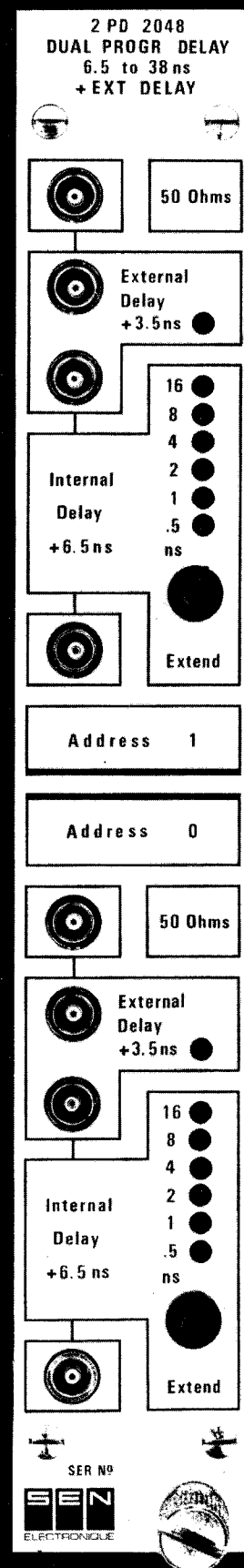
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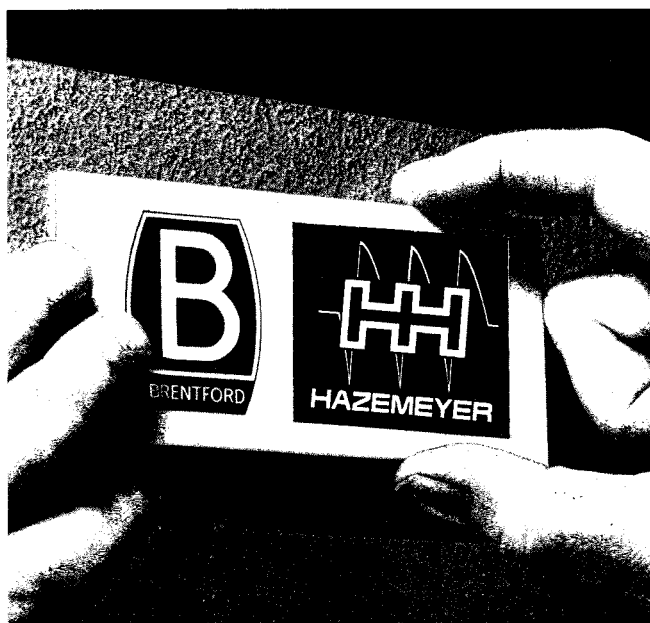
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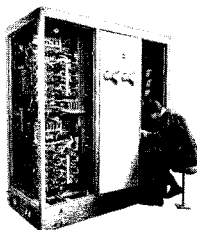
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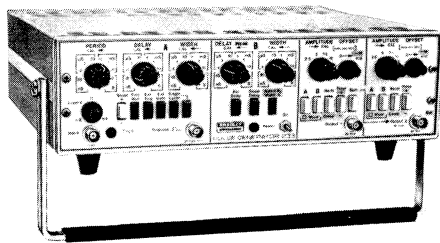


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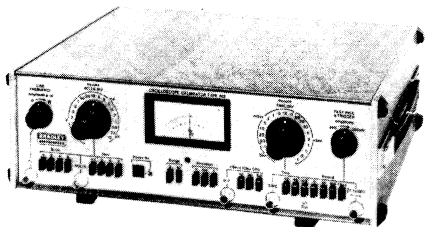
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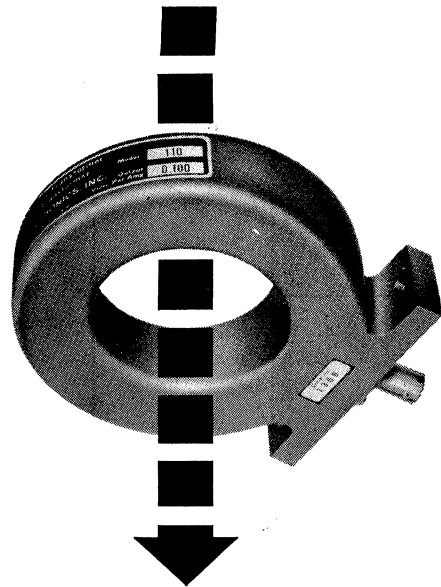
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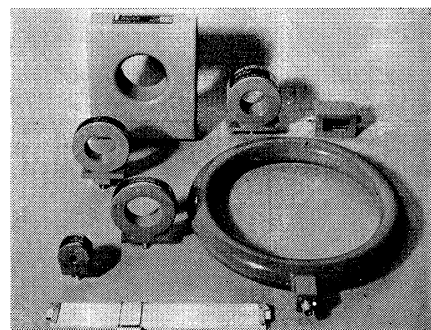
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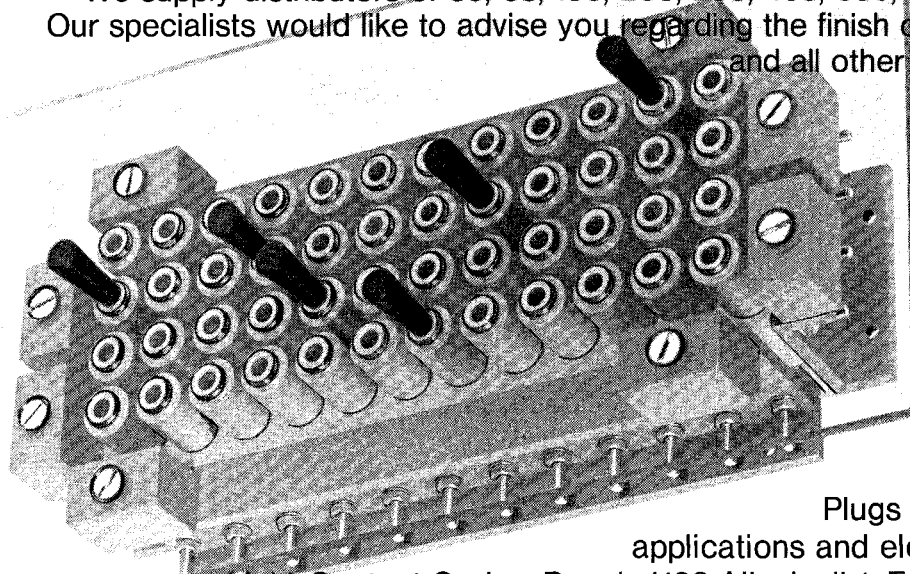
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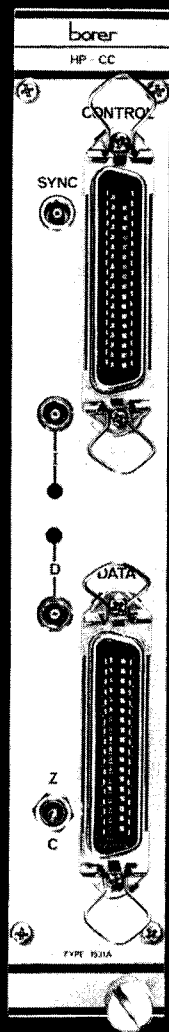
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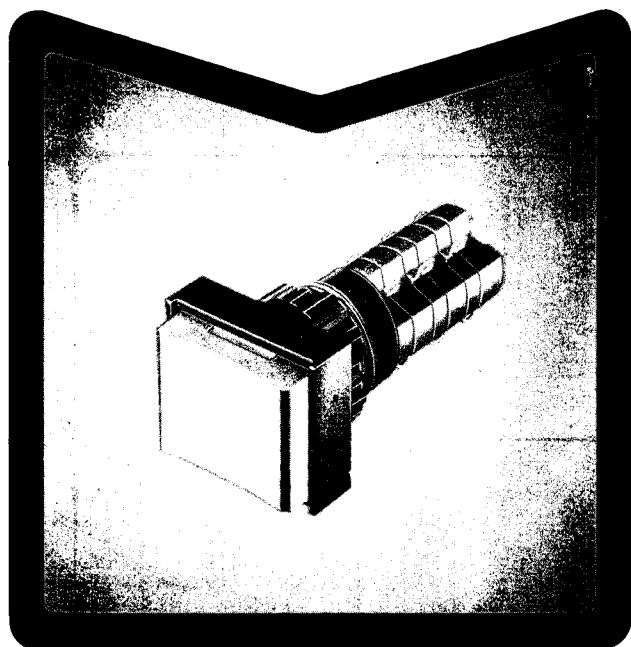
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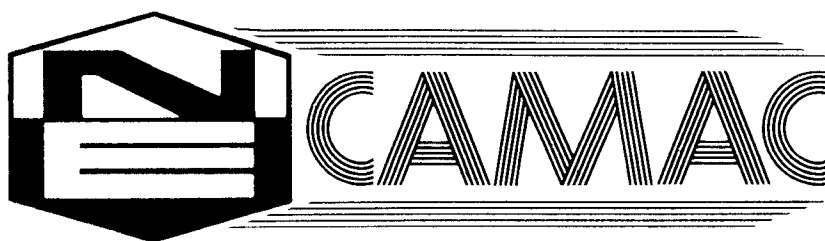
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The 9041/AB accepts data via multiway front panel connectors, stores it in two 24 bit parallel entry registers and transfers it to the dataway in response to read commands. The transfer to the register is initiated by a data strobe which may be provided from an external source or from the dataway, and control signals are provided for use in handshake transfers.

9041/A: Accepts data via 100 ohm impedance terminated cables

9041/B: Accepts CAMAC unterminated signals

9042 Dual Output — 24 Bits

This module provides dual 24 bit outputs controlled by internal registers, which can be set and read by dataway command. Outputs are on dual 25-way Cannon sockets and are capable of sinking 40mA to earth.

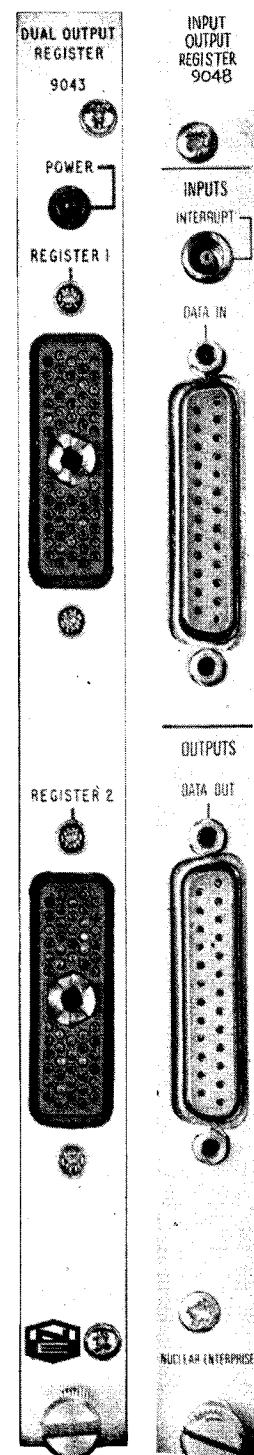
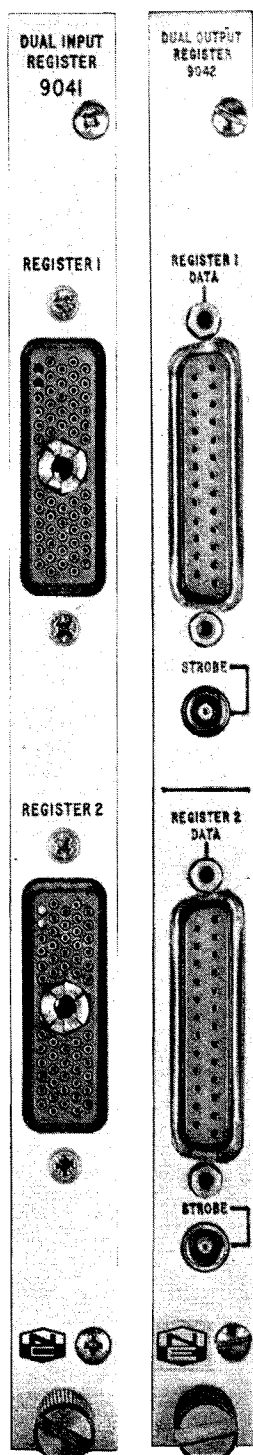
9043 Dual Output — 24 Bits

This module provides dual outputs of 24 bits each, controlled by internal registers which can be set and read by dataway command. Data transfers to a peripheral can be controlled by handshake signals and can be initiated by the computer or the peripheral.

9048 Input/Output Register

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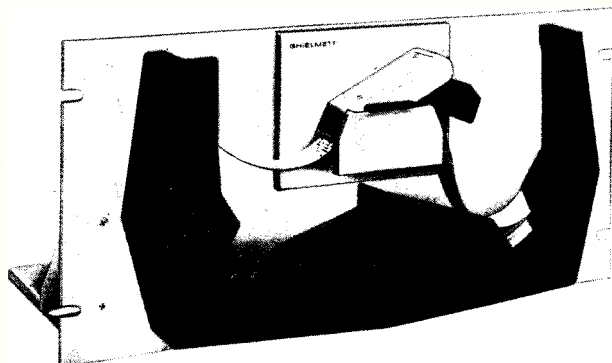


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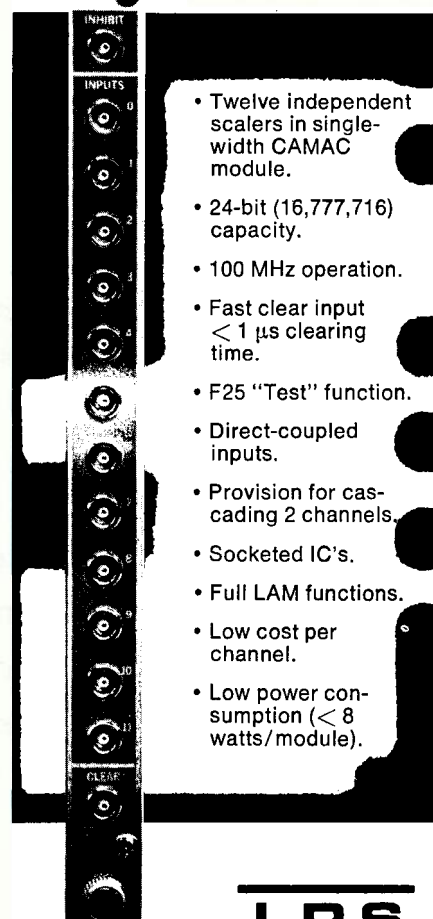
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