

# People and things

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## Felix Bloch

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As reported in our October issue, Felix Bloch died on 10 September in Zurich, the town where he was born in 1905. After studying and an initial appointment in Leipzig, he left Germany in 1933, emigrating the following year to the United States, where he soon moved into a position at Stanford. On the US West Coast, he worked with Ernest Lawrence, and with Luis Alvarez in a historic first measurement of the neutron magnetic moment. During the war years, his talents were in demand elsewhere, first for the Manhattan project and then in radar research. In 1952, Bloch shared the Nobel physics prize with Edmund Purcell for pioneer work in what is now known as nuclear magnetic resonance. NMR went on to become one of the standard tools of physics and chemistry, and has now emerged as a powerful new diagnostic technique in medicine.

When CERN was being set up in the early 1950s, its founders were searching for someone of the stature and international prestige to head the fledgling international Laboratory, and in 1954 Professor Bloch became CERN's first Director-General, at the time when construction was getting under way on the present Meyrin site and plans for the first machines were being drawn up. After leaving CERN, he returned to Stanford, where he continued to take an active part in physics.

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June 1955. Felix Bloch, as CERN's first Director-General, laid the foundation stone of the Laboratory. With the trowel was Max Petitpierre, the Swiss President at the time. Twenty-eight years later, another Swiss President came to CERN for a similar ceremony. See photo on page 357.

(Photo CERN 2.6.55)

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## On people

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Fritz Gutbrod is the new spokesman of the DESY Theory Group following Tom Walsh's departure for Minnesota. Gutbrod is well known for his work on lattice gauge theories involving Monte Carlo computer calculations.

Paul Williams has been appointed Deputy Director of the Rutherford Appleton Laboratory in the UK.

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## A school for all climates

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Summer schools play an important role in particle physics. As well as providing forums for new ideas and results, they act as meeting places for young researchers. The Advanced Studies Institute on Techniques and Concepts of High

Energy Physics, to be held from 2-13 August 1984 in St. Croix, US Virgin Islands, will be the third in a series which now seems to have become a regular feature of the particle physics calendar.

The series was started by Tom Ferbel of Rochester, with assistance from the NATO Advanced Study Institutes Programme, the US Department of Energy and National Science Foundation, Fermilab, and Rochester University. The schools make a point of mixing accelerator and detector physics with topical questions of particle physics. Although held on US territory, the institute attracts many participants from outside the US.

Next summer's scheduled speakers are: A. Astbury (on Physics of Hadronic Colliders), C. Fabjan (on Calorimetry), J. Iliopoulos (on Supersymmetric Particles), R. Peccei (on Tests and Present Status of



Fritz Gutbrod (left), new DESY theory spokesman, with fellow theorist Ahmed Ali, who has migrated to CERN for a year.

(Photo DESY)



time. This is either due to a new physics effect, as yet unexplained, or more likely, to a temporary fault in the computer system.

Gauge Theories), D. Perkins (on Searches for Exotic Objects), A. Sessler (on Current and Future Developments in Accelerators), and M. S. Turner (on Cosmology in Particle Physics).

The Institute is designed primarily for about sixty young experimentalists working in the area of high energy particle physics. Senior graduate students or recent PhD recipients interested in attending should apply directly to T. Ferbel, Department of Physics/ASI, University of Rochester, Rochester, NY 14627, USA

A Symposium entitled Recent Developments in Computing, Processor and Software Research for High Energy Physics will be held in Guanajuato, Mexico, from 8-11 May, 1984. It will cover recent developments in reconstruction

processors, lattice gauge processors, software development, beam orbit processors, etc. Further information from one of the conference secretaries: Rene Donaldson, Fermilab, PO Box 500, Batavia, ILL 60 510, USA, or Isabel Menocal, Instituto de Fisica, Apdo. Postal 20-364, 01000 Mexico, D.F.

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#### How to grow antiprotons

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Alert readers were quick to spot the mistake in the photograph published on page 247 of our September issue. While the SPS display proudly proclaimed that the goal of more than 100 inverse nanobarns of integrated luminosity for proton-antiproton collisions had been surpassed, it displayed even more proudly that the intensity of the stored proton and antiproton beams had been growing with



Celebrating the first anniversary of the Argus detector at the DESY DORIS II ring. Left to right in the foreground are Robert Hofstadter, Paul Söding (back to camera), DESY Director Volker Soergel and Gus Weber.

(Photo DESY)



# Germany at CERN

**The first exhibition of German enterprises  
at CERN is taking place from November 29 to  
December 1, 1983.**

**The Federal Ministry for Research and Technology regards this exhibition as an excellent opportunity to acquaint those responsible at CERN for the construction and operation of research facilities with the technical and economic capacities of a selected number of German enterprises. The exhibition is to help improve the cooperation and technology transfer between basic research and industry in their mutual interest.**

**On the initiative and under the auspices  
of the Federal Ministry for Research and Technology**



## AEG

**AEG-Telefunken  
Anlagentechnik AG  
Fachbereich Leistungselektronik  
und Anlagenbau  
Brunnenstraße 107a  
D-1000 Berlin 65  
Telephone: (030) 467-1 · Telex: 185973**

**Branch in Switzerland:  
Elektron AG, CH-8804 Au Zh  
Telephone: (01) 7830111 · Telex: 875755**

**Production line:**

Planning and supply of plant and components for all branches of electronics.  
For nuclear research in particular:  
- High and low voltage switchgear  
- Power electronics  
- Heavy current supplies  
- a. c. and d. c. drives  
- Static and dynamic reactive power compensation  
- Elements for the evaluation of analogue and digital signals  
- Mechanical assemblies  
- Workshop services (electr./mech.)

**Products exhibited:**

Power electronics components for magnet supplies and reactive power compensation.  
- Rectifier assemblies for heavy current  
- Rectifier assemblies for high voltage  
- Digital main reference-value emitter  
- User oriented digital elements



**AUERGESELLSCHAFT GMBH  
Thiemannstraße 1-11  
P. O. Box 40 04 40  
D-1000 Berlin 44 (West)**

Telephone: (030) 6891-0 · Fax: (030) 6991-558  
Telex: 184915 auer d · Cables: auerprod berlin

**Represented in Switzerland by:  
Schönholzer AG  
Schwarztorstrasse 31  
CH-3000 Bern 14  
Telephone: 031 259651  
Telex: 32889**

**Production line:**

Products for Safety at Work  
Permanent Instruments: permanent instruments and installations for indication, detection, monitoring, recording and warning of combustible or toxic gas/vapor in air concentrations · instruments for gas analysis and control.  
Air Purification: high efficiency particulate matter filters, particle filters, activated charcoal filters for application in industry, nuclear plants and hospitals; filters for air raid shelters.  
Medical Technics: appliances for balneological therapy.  
Incandescent Gas Mantles: for street lantern, camping, rail road signal, buoy and green house lighting.

**Products exhibited:**

Respiratory protective devices  
Protective clothing  
Portable and permanent instruments for detection, indication, and warning of gas/vapor in air concentrations



# Germany at CERN

## RÖHR

TECHNIK IN BLEI

**BLEIWERK GEBR. RÖHR KG**  
Bruchfeld 52  
D-4150 Krefeld 12 (Linn)  
Telephone: (0 21 51) 59 02 33-35  
Telex: 853 823

**General representative (CH):**  
**Jakob Scherrer Söhne AG**  
Mendstr. 7  
8059 Zürich 2  
Tel.: (01) 202 79 80  
Telex: 58700

### Production line:

Rolled and extruded products made of lead and lead alloys, especially lead sheet and plate from 0,2 to 200 mm thick, up to 3,20 m wide in coils up to 300 m long. Special lead sections, lead wire and lead pipes up to a width or outside diameter of 300 mm. Lead sheets bonded to supporting plates (composite material)  
Nuclear engineering:  
- Lead bricks according to DIN 25407 and euratom  
- Lead containers  
- Lead linings and other lead screens

- Precision lead components — stamped, pressed deep drawn or die-cast  
- Lead granules

### Products exhibited:

For the new accelerator LEP:  
- Dipole vacuum chambers in aluminium with lead cladding:  
- Extruded lead shieldings for these chambers  
- Special lead sections  
- Lead bricks  
- Lead containers  
- Lead safes  
- Lead shielding for pipework



## BRAND

**RUDOLF BRAND GMBH + CO**  
Laboratory and Vacuum Equipment  
P. O. Box 310  
Otto-Schott-Straße 25  
D-6980 Wertheim  
Tel. (093 42) 808-0 Telex: 689 110

### Production line:

Vacuum equipment such as:  
- rotary and diaphragm pumps  
- small-flange components  
- valves and gauges  
- pumping units  
Volume measuring instruments such as:  
- dispensers, dilutors, pipettors, titrators  
- volumetric glassware  
Plastic labware — disposables made of glass and plastic — blood testing apparatus

### Products exhibited:

rotary and diaphragm pumps  
pumping units  
small-flange components  
valves and gauges  
dispensers, pipettors, titrator



**BUSAK + LUYKEN GMBH & CO**  
Postfach 800206  
D-7000 Stuttgart 80  
Telephone: (07 11) 78 64-0  
Telex: 725 511-0  
Telefax: 07 11/78 64-425

### Production line:

Sealing elements for different applications in nuclear and chemical industries, in instrument and machine manufacture, in hydraulics, pneumatics, aircraft and space industries. Seals for high and low pressure systems, for high and low temperature applications, for all gaseous and liquid fluids. Seals available in wide range of combinations of materials and designs in various compounds e. g. nitrile, Viton®, Kalrez®, Tefzel, Vespel®, silicone, ethylene propylene, neoprene, Turcon®, PTFE.

### Products exhibited:

Typical samples of our production line, e. g.:  
- O-Rings in various compounds; Metal-O-Rings  
- Turcon®, Glyd®-Rings, Double-Delta®-Seals, Variseals®  
- Mechanical Seals, Grafseal®, Flexible Graphite  
- Cefil'Air (air or fluid activated flexible seal)



**Cable Works Friedrich C. Ehlers**  
Gotenstraße 10  
D-2000 Hamburg 1  
West-Germany  
Telephone: (0 40) 23 71 50  
Telex: 2 162 802 kwe d

### Manufacturing range:

Special fire and radiation resistant, flame retardant, halogene and sulphur free (FRNC) PYRO-ELODUR Safety Cables as:  
- power cables up to 20 kV,  
- control cables,  
- instrumentation cables and thermocouples compensating leads,  
- telecommunication cables  
- safety cables to customers specifications — »taylor made«  
Power Cables up to 30 kV:  
PVC, PE, XLPE insulated, with or without concentric conductor, with or without armour, with or without lead sheathing

Off-Shore/Ship-Wiring/Marine/Heavy Duty Cables in standard execution and as PYRO-ELODUR Safety Cables  
Instrumentation and Control Cables. Thermocouples Compensating Leads for measuring and control systems  
Telecommunication Cables both for indoor and outdoor use  
Our cables are made to all World known Standards and approved by all most important Classification Societies.

### Products exhibited:

Samples of PYRO-ELODUR Safety Cables. Our exposition is extended by regular Video and Slides presentations on these PYRO-ELODUR Safety Cables in English and in French.



# Germany at CERN

## DORNIER

**DORNIER SYSTEM GMBH**  
Postfach 1360  
D-7990 Friedrichshafen 1  
Telephone: (0 75 45) 81  
Telex: 734209-0 do d

### Program of supplies and services

Development and manufacturing of complete systems  
Material technology: Interface physics · Powder metallurgy · Interface and thin film analytics · Coating technology · Ceramics development  
Nuclear technology: Reliability analyses · Process development · Process safety engineering  
Hydrogen technology: High-temperature · Electrolysis  
Energy technology: Systems technology · Thermodynamics · Aerodynamics · Thermal analyses  
Cryotechnology · 3D Navier · Stokes equation solution which is precise with respect to time  
Manufacture: Manufacture of complex mech./elektron. systems · Fibre composite components · E.B. welding · Simulation and

manipulation systems · Structures for highly dynamic motions · Complex strength calculation · Gas ultra-centrifuge  
Further activities: Electronics · Environmental technology · Information and communications technology · Transport technology · Space technology  
**Products exhibited:** Model of the muon chamber of the CERN experiment UA 1 · Niobium cavity · Coating technology-coating examples · Material technology-fibre composite material for wave guides

## HEINZINGER

**HEINZINGER**  
Control & Measuring Instrumente  
Happinger Straße 71  
D-8200 Rosenheim  
Telephone: (08031) 641 41  
Telex: 525 777 hemes d

### Production line:

Stabilized DC-Power supplies from modules up to 500 kW.  
Class 10-4 till 10-6

for:

- laboratory, magnets, supraconductors,
- xenon-lamp, multiplier, laser, capacitor-charging,
- static lenses.

HV-System-DVM up to 132 kV DC accuracy + — 1.10-4 + — 1 digit,  
TK: 10 ppm/K  
HV-Isolating-Transformers  
HV-Connectors and cables up to 300 kV =

## INTERATOM

**INTERATOM**  
Internationale Atomreaktorbau GmbH  
Friedrich-Ebert-Straße  
D-5060 Bergisch-Gladbach 1  
Telephone: (02204) 48-0  
Telex: 8878 457 iagl d · 8878 492 iagl d  
Telecopierer: (02204) 48-30 45

### Manufacturing and Services:

components for nuclear power plants  
components for uranium-enrichment plants  
nuclear and process related test facilities  
accelerator and controlled fusion components  
piping systems (aluminium, stainless steel, copper)  
heavy aluminium structures by welding  
high-temperature brazing  
electron-beam welding  
TIG, MIG, Plasma and Plasma-MIG-welding,  
orbital-welding  
CNC-drilling and -turning  
In addition, INTERATOM offers supporting engineering services  
for the above mentioned items.

### Products exhibited:

LEP-cavity 350 MHz (model)  
dipole- and quadrupole-vacuum chambers (model)  
5-cell superconducting niobium structures  
vacuum-brazed and electron-beam welded samples  
plasma-MIG welded samples



**Fried. Krupp GmbH**  
Altendorfer Straße 103  
P. O. Box 102252  
D-4300 Essen 1  
Telephone: (0201) 188-1  
Telex: 857 385 fkes d

### Production line:

Plantmaking  
Mechanical Engineering  
Trading and Services  
Steelmaking  
Shipbuilding

### Products exhibited:

Vacuum and high-vacuum engineering  
- Textor high-vacuum vessel for nuclear fusion  
- Textor nuclear research chamber  
- Asdex high-vacuum vessel  
- Jet-Limiter

Magnet Engineering  
- Magnetic materials  
- Magnet systems for use in nuclear physics and basic research  
- Measuring instruments for magnet engineering  
Process Data Systems  
- Synchronous duplex computers  
- Color display systems  
- Executive control systems  
- Application packages  
Noise and Vibration Measurements  
Special Alloys



# Germany at CERN

## LYNENWERK

LYNENWERK GmbH & Co., KG  
POB 1240  
Dürener Straße  
D-5180 Eschweiler  
Telephone: (024 03) 75-1  
Telex: 832 142

### Production line:

For automation and remote control:

- computer cables
- control cables
- signalling cables
- measuring cables
- cables for thermocouple

For hazardous areas:

- flame retardant cables
- no halogen
- low smoke emission
- low emission of toxic and corrosive gas
- highly resistant to nuclear irradiation
- fire resistant cables
- circuit integrity for more than three hours

Furthermore:

- heavy duty TRS cables
  - cables for lifting gear
  - installation cables
  - power cables for low and medium voltage
  - cables to customer's specifications
- displayed products:  
- same as above



## MANNESMANN DEMAG Fördertechnik

Mannesmann Demag  
Fördertechnik  
D-5802 Wetter (Ruhr) 1  
Telephone: (02335) 821  
Telex: 823231

### Production line:

Components, installations and systems providing solutions to materials handling problems  
Drives, gear motors, control and closed loop control units  
Travel carriages, mechanical and electrical components  
Electric chain hoists and electric wire rope hoists for capacities up to 80,000 kg,  
open winch crabs up to 125,000 kg  
Work station jibs and cranes, overhead travelling cranes, suspension cranes  
Suspension monorail systems  
Roller, chain and belt conveyors  
Automatic guided vehicles

Warehouse and goods distribution systems

Airport equipment

### Products exhibited:

- DC motor
- RS wheel block, compact travel and drive unit for heavy loads
- DSB electric suspension monorail for overhead materials handling systems

## MESSER GRIESHEIM



Messer Griesheim GmbH  
Hanauer Landstraße 330  
D-6000 Frankfurt 1  
Telephone: (06 11) 40 19-1  
Telex: 417 138 mgfh d

Schweisstechnik AG  
Langwiesenstraße 12  
CH-8108 Dällikon/Zürich  
Schweiz  
Telephone: (004 11) 84427 11  
Telex: 53053 sagre ch

### Sales and exhibition program

industrial and speciality gases, gaseous and liquid  
transport and storage vessels, piping and other equipment for cryogenic application  
gas purifying and drying units  
pressure controllers and supply equipment for industrial and speciality gases

gas welding equipment  
flame cutting machinery and guiding machines for cutting processes  
gas-shielded welding equipment for mig/mag, tig, plasma arc processes  
pipewelding systems

plasma arc and laser welding systems  
measuring and monitoring equipment  
eb techniques for welding systems



Münchener Apparatebau  
Kimmel GmbH  
Hans-Stießberger-Straße 2  
D-8013 Haar  
Telephone: (089) 462031  
Telex: 523092

### Production line:

Health physics instruments and a complete range of components as electronics and radiation detectors, for system completions  
- portable and installed dose and dose rate  
- mobile and installed contamination monitors  
- systems for checking and handling of radioactive waste  
- particulate in air and gas monitors, esp. TRITIUM-monitors  
- computerized beta particulate monitor with tape filter system  
- computerized radiation measuring carts (intervention carts)  
- low level measuring systems and airborne particulate samplers

- environmental monitoring systems  
- standard nuclear electronics and MICRO-PROCESSOR system & software  
- wide range of detectors for X-ray, Alpha, Beta, Gamma & Neutron radiation

### Products exhibited:

computerized beta particulate monitor (tape filter systems), model AMS 9. X  
precision dose and dose rate meter (gamma & X-ray), model MAB 605  
microprocessor based neutron dose rate meter, model REM 909  
tritium and noble gas monitor, model TMH 2



# Germany at CERN

## NTG Nukleartechnik

NTG NUKLEARTECHNIK  
GmbH & CO KG  
Am Spielacker  
D-6460 Gelnhausen 2  
Telephone: (06051) 6241/6251  
Telex: 4 184320 ntg d

### Program of supplies and services

Plans · Calculates · Designs · Develops · Manufactures in the fields of:  
Nuclear Technique · Nuclear Physics · Beam Line Systems · Power Station Technology · Reprocessing · Environmental Protection · UHV-Technique · Tritium Technology · Fusion Technique

For example:

### Our Standard Delivery Program for Beamline-Systems:

Complete Beam Line and Beam Diagnostic Systems · Emittance Measurement Device with complete Electronic and Microprocessor equipment (hardware and software) · Magnet Chambers · Ultra High and High Vacuum Chambers and Tanks of every Geometry and

Size · Universal Precision High Vacuum Feedthrough · Compressed Air Actuated High Vacuum Feedthrough · Slit Jaws for Beam Size Limitation, Beam Analysis and Energy Definition (cooled and uncooled version) · Coaxial Faraday Cups · Faraday Cups (provided for up to 25 kW beam power) · Beam Profile Measurement Systems · Variable Segmented Aperture · Beam Stopper combined with Beam Position Measurement · Rotating Wire Scanner · Beam Transformer · Capacitive Pick-Up · Linear and Rotating Feedthrough · Complete Electronic Control Systems and Plants · Standard UHV and HV Components (CF-flanges, bellows, etc.)

### Products exhibited:

Beam line components · Ion-getter-pump · Fast breeder fuel element (dummy)



odu-kontakt gmbh & co kg  
elektronik — vertrieb  
Herzog-Friedrich-Straße 3  
Postfach 269  
D-8260 Mühldorf/Inn  
Telephone: (08631) 120 14-1 20 17  
Telex: 56 735

### Production line:

single pole contacts  
circular connectors  
socket and pin strips for printed circuit boards  
FLAKAFIX tape cable sets

### Products exhibited:

Reactor implementations  
Socket connectors for reactor implementations for the cold side  
for the hot side



Reaktorwartungsdienst & Apparatebau GmbH  
in Jülich  
Eleonorenstraße 1  
D-5170 Jülich  
Telephone: (024 61) 2992  
Telex: 833559 rewa d

### Production program

UHV technique  
- UHV installations  
- UHV manipulators  
- UHV chambers  
- UHV metal bellows  
Accelerator technique  
- components for beam diagnostic  
- lines of acceleration  
- emittance measuring device  
- special components

Cryotechnique  
- evaporation cryostat  
- transfer pipes

### Products exhibited:

High-performance beam diagnostic-systems  
UHV manipulators  
Metal bellows  
Measuring device for health protection  
UHV connecting technique



F. X. STÖHR GmbH & Co.  
Armaturenwerk KG  
Provinstraße 22  
Postfach 11 18 69  
D-8900 Augsburg  
Telephone: (08 21) 553094  
Telex: 533528 stoeh d

### Production line:

full lift-, proportional safety valves  
pressure relief safety valves; high vacuum tight non-return valves, inspection glasses, couplers  
needle valves, quick acting vacuum valves  
throttle type valves, cryogenic valves  
pneumatic valves, motor valves  
pressure reducing valves  
pressure reducing units  
cryogenic transfer lines  
low temperature equipment

### Products exhibited:

pressure reducing valves, safety valves  
non-return valves, inspection glasses  
on-off valves, coupler for vacuum transfer line  
cryogenic valves, control valves  
pneumatic valves  
cryostat, made of synthetic material



# Germany at CERN



DR. B. STRUCK



Dr. Bernd Struck  
Turfstraße 163  
D-2000 Tangstedt  
Tel. (041 09) 6252  
Telex 2180715 tegs

Modutec  
Am Osdorfer Born 30  
D-2000 Hamburg 53  
Tel. (040) 8030 12-15  
Telex: 2 163 678

**Production line:**  
CAMAC products  
NIM products  
FASTBUS products  
Physical Trigger Systems  
Track processors  
VME products  
Microprocessor developments Z 80, 8086 based (user specific)  
Bloodgasanalyser, gradientoven, animal feeding processors  
Oceanographic research - IEEE 488 products  
relative navigationsystems  
Militaric developments

**Products exhibited:**  
FASTBUS products  
Crate, FIORI, BUS-Monitor, Display Unit, KLUGE Cards  
IEEE 488-products  
NIM products  
VME products

**Modutec**  
**Products exhibited:**  
19" cabinets and racks  
CAMAC and NIM-crates  
FASTBUS-crates and card-frames for EUROCARDS  
Modules and cassetts for all systems  
Airconditioners and blower-systems  
Power supplies for CAMAC, NIM and card-frames



Turbo-Werk  
Messtechnik GmbH  
Gremberger Straße 151  
D-5000 Köln 91  
Tel. (0221) 838031  
Telex: 8873264 turb d

Represented in  
Switzerland by:  
Dipl.-Ing.  
F. Baumgartner  
Schiffände 7  
Ch-8703 Erlenbach

**Production line:**  
Variable Area Flowmeters (Float Type In Glass And Metal)  
Flapper Type Flowmeters And Indicators  
Target Type Flowmeters And Monitors  
By - Pass Flowmeters  
Magnetic - Inductive Flowmeters  
Magnetic - Inductive Flowsensors  
Level Indicators And Controllers

**Products exhibited:**  
Variable Area Flowmeters (Float Type In Glass And Metal)  
Flapper Type Flowmeter And Indicators  
Target Type Flowmeter  
Magnetic - Inductive Flowmeter  
Magnetic - Inductive Flowsensor

# VOITH

J.M. Voith GmbH  
Postfach 1940  
D-7920 Heidenheim  
Telephone: 07321-370  
Telex: 7147999 vh d  
Cable address: Voithwerk Heidenheimbrenz  
Telefax: 07321-373000

**Production program:**  
Machinery and equipment for the production of paper  
Water turbines  
Hydraulic equipment, large valves, hydraulic steel structure engineering  
Voith-Schneider Propellers and other special drives  
Pumps  
Special designs for research and industrial systems  
Hydrodynamic converters, couplings, brakes and gear units  
Heavy-duty gear units, industrial gear units  
Hydrostatic pumps and components  
Aerodynamic engineering: air supply and ventilation systems, cooling systems, wind tunnels, tunnel ventilation systems

Voith-Hirth radial spur serrations  
Frequency converters  
Electronic controls  
Heavy-duty cardan shafts  
Machine tools  
Industrial manufacture: casting, welding, machining for farmed-out work

**Products exhibited:**  
Model of coupling  
Model of a reflecting telescope  
Voith-Hirth radial spur serration  
IPH pump  
Model of a transverse-flow fan



Carl Zeiss  
Carl-Zeiss-Straße  
D-7082 Oberkochen  
P.O. Box 1369/1380  
Tel. (07364) 20-1  
Telex: 71375 155

Branch in Switzerland:  
Carl Zeiss Zürich AG  
Grubenstrasse 54  
CH-8045 Zürich  
Tel. (01) 461 2300  
Telex: 813277

**Production line:**  
Microscopes  
Image analysis and photometric systems  
Electron microscopes  
Medical instruments, ophthalmological instruments  
Instruments for industrial metrology  
Geodetic instruments  
Photogrammetric instruments  
Camera and special lenses  
Planetaria and astronomical instruments  
Binoculars, loupes, spectacle lenses, sunglasses  
Special assignments for research and science

**Products exhibited:**  
Microscopes  
Geodetic instruments  
Magnifying visual aids

Organization of the exhibition: Kienbaum International Promotion GmbH  
D-5270 Gummersbach and Partner Mr. W. Esser, Mrs. Dr. G. Heppner



The Max-Planck-Institut für Physik und Astrophysik, Munich, is offering three positions for young

## Ph. D. Physicists in Elementary Particle Physics.

We are looking for experimental physicists with experience in high energy particle physics to participate in

- neutrino experiments with BEBC (CERN) and with the 15-foot bubble chamber (Fermilab),
- muon experiments with a vertex detector (streamer chamber) and a forward spectrometer at CERN (NA9) and at Fermilab,
- a hadron experiment to study the production of large transverse momentum prompt photons with a calorimeter detector (NA24) at the CERN SPS.

These appointments will normally be for three years with a possible extension.

Applications (including curriculum vitae, list of publications and the names of two referees) should be sent as soon as possible to:

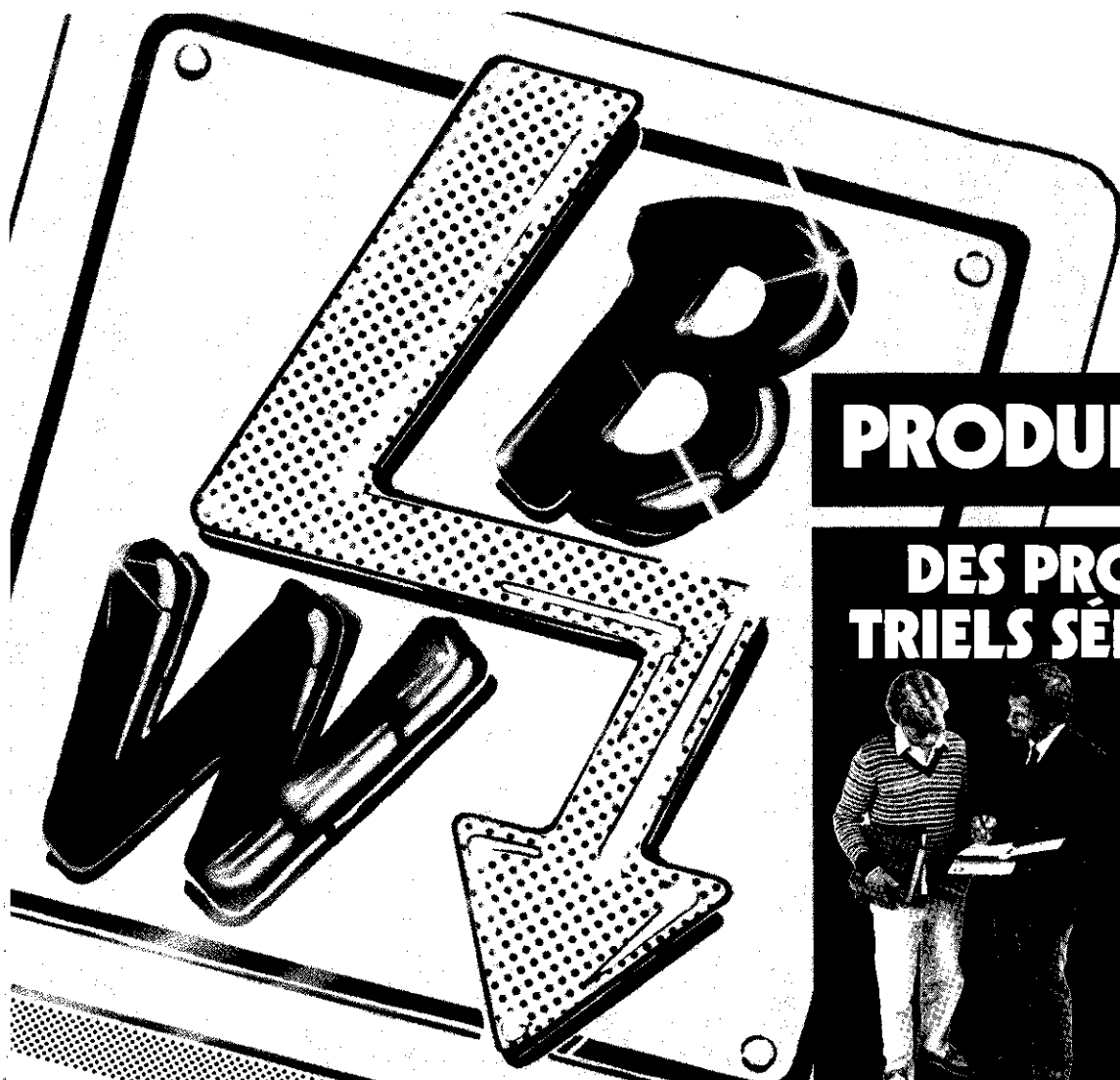
**Prof. N. Schmitz**  
Max-Planck-Institut  
für Physik und Astrophysik  
Föhringer Ring 6  
D-8000 München 40, West Germany

## Research Associates: High Energy Experimental Physics

SUNY at Stony Brook is organizing an experiment at the DO area of Fermilab to study  $p\bar{p}$  collisions at 2 TeV. The experiment will stress high resolution studies of leptons ( $e$  and  $\mu$ ) and photons, as well as good hadron calorimetry. Positions are available for responsibilities in all phases of the hardware and software development. Salary and terms of appointment are negotiable and will depend on length of previous experience. Interested applicants should send vita, and have at least two letters of reference sent to:

**Professor M. Marx, Physics  
Department, SUNY Stony Brook,  
Stony Brook, NY 11794.**

SUNY Stony Brook is an equal opportunity/  
affirmative action employer.



## PRODUITS INDUST

## DES PRODUITS INDUS- TRIELS SÉLECTIONNÉS –

## DES CONSEILS JUDICIEUX



Division Produits industriels:

- Constructions de supports de câbles
- Technique de mesure
- Protection contre la chaleur
- Surveillance de l'énergie
- Sécurité
- Technique à courant fort

## UNIVERSITY of BASLE

The nuclear and particle physics group of the Institute for Physics has an opening for a

### Research Associate

in its experiments at CERN (LEAR).

Applicants should have some postdoctoral experience in experimental intermediate or high energy physics. Candidates are expected to be capable to take over responsibilities for the data acquisition system (VAX 750). Appointment is for a maximum of 6 years.

Applications should be sent to:

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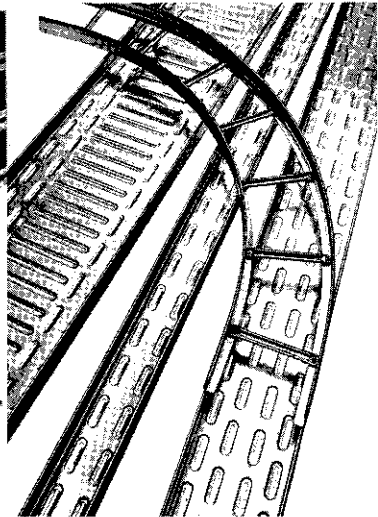
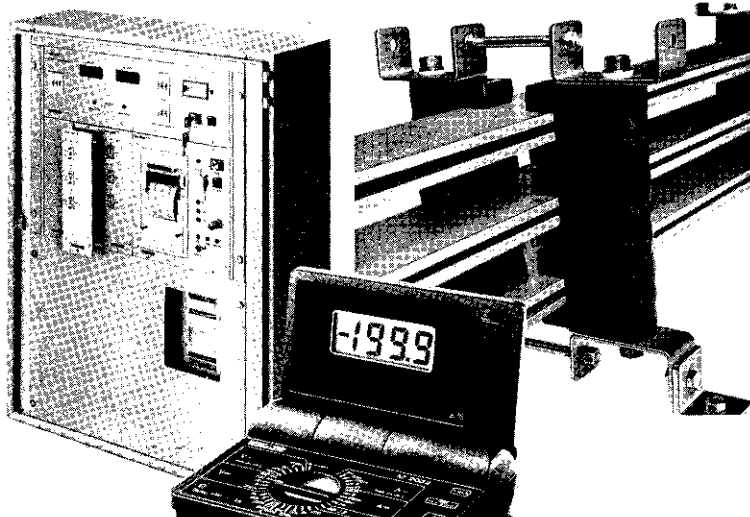
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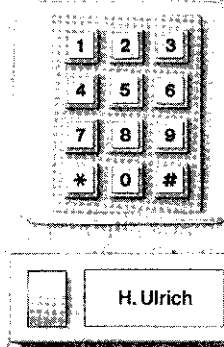
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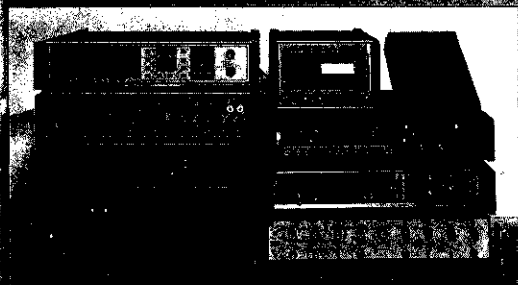
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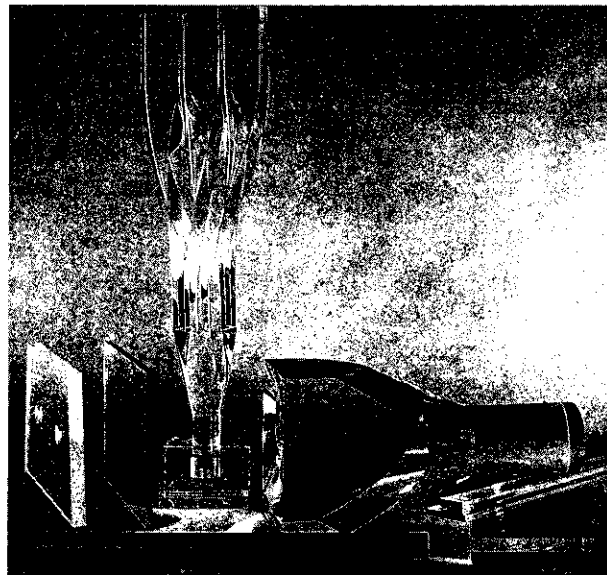
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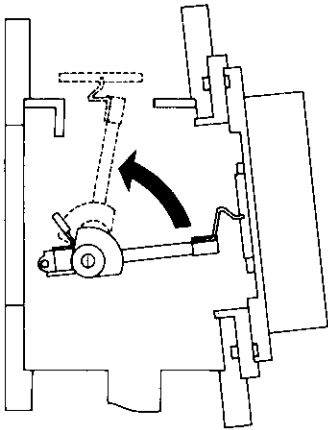
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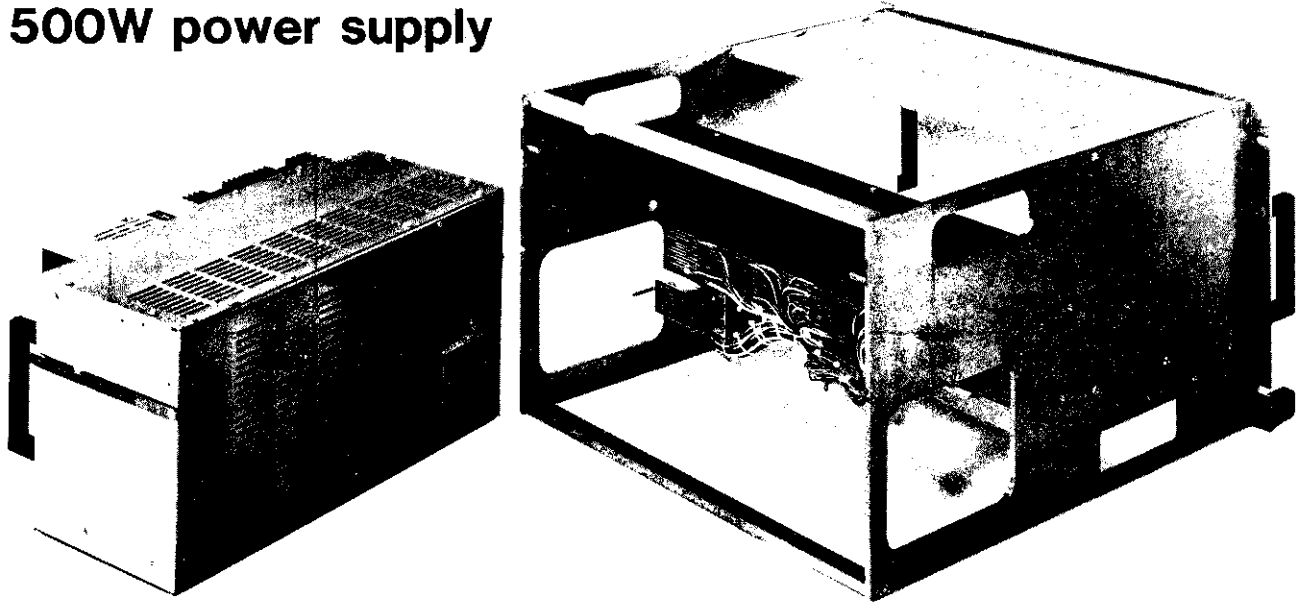
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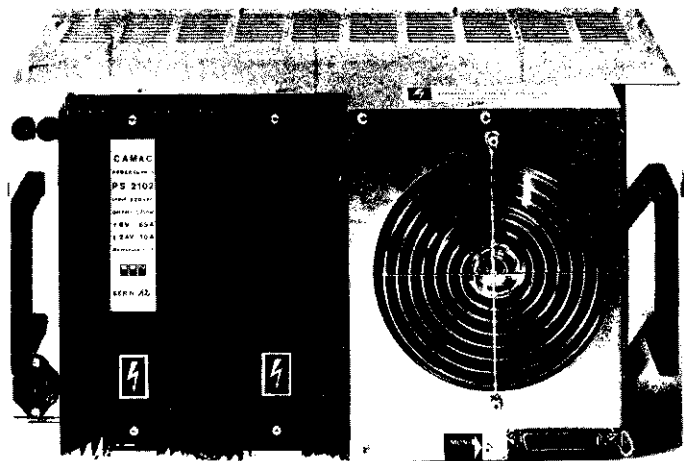
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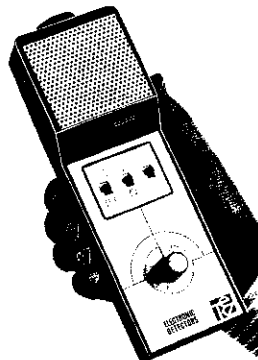


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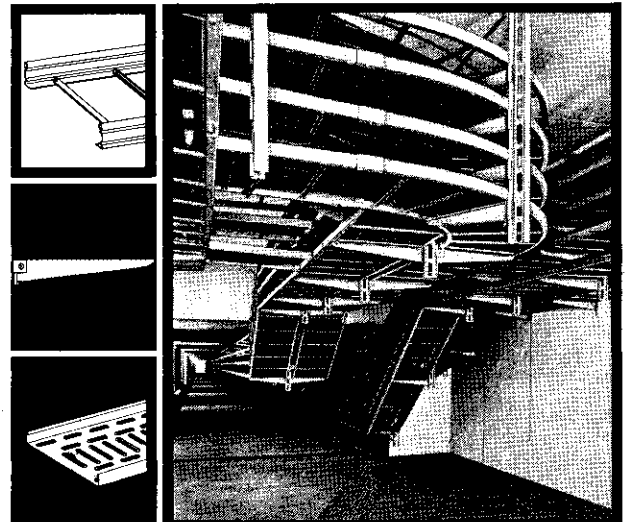
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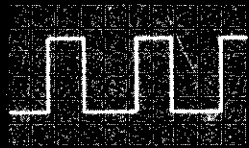


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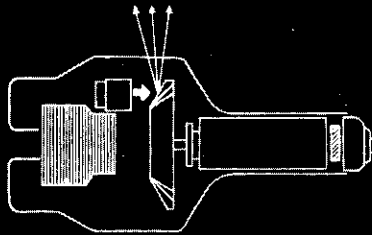
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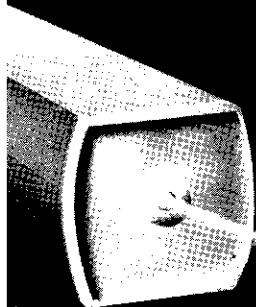
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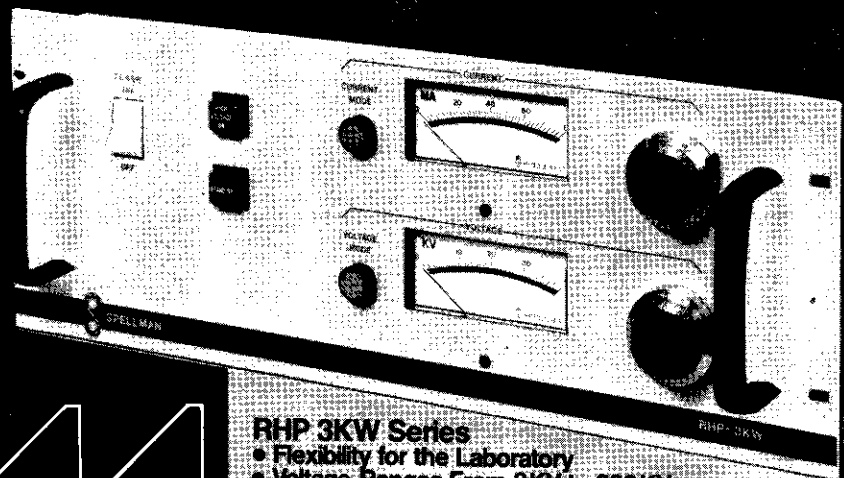


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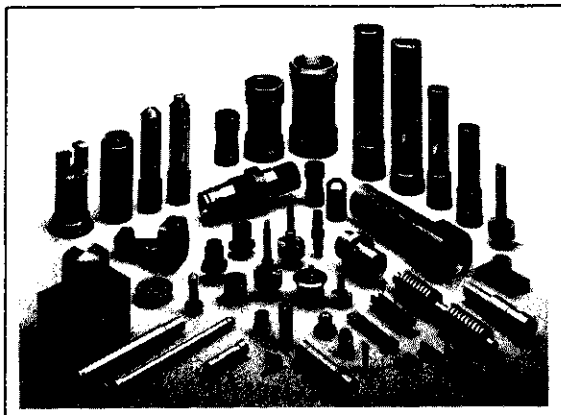
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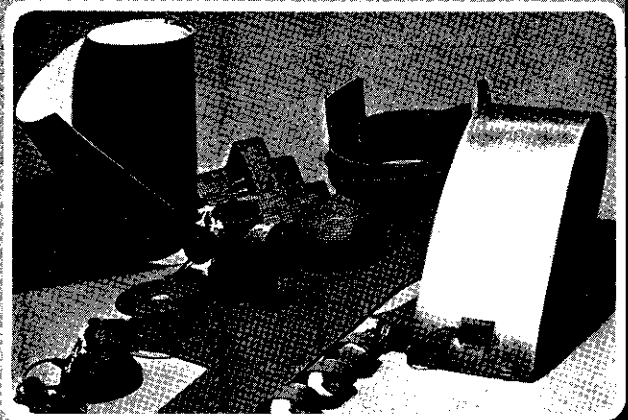


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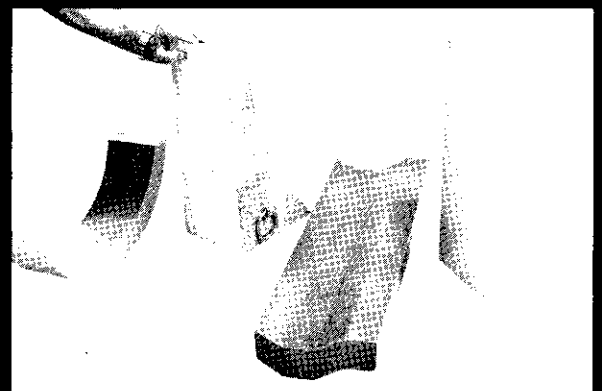
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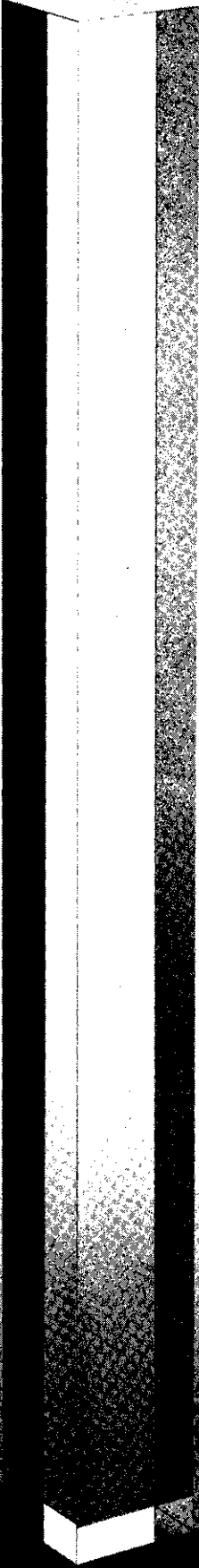
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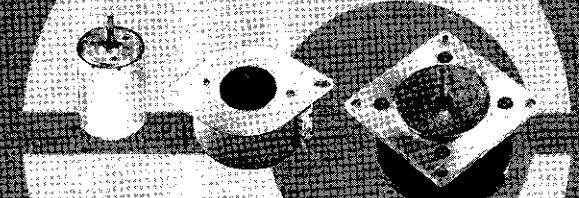
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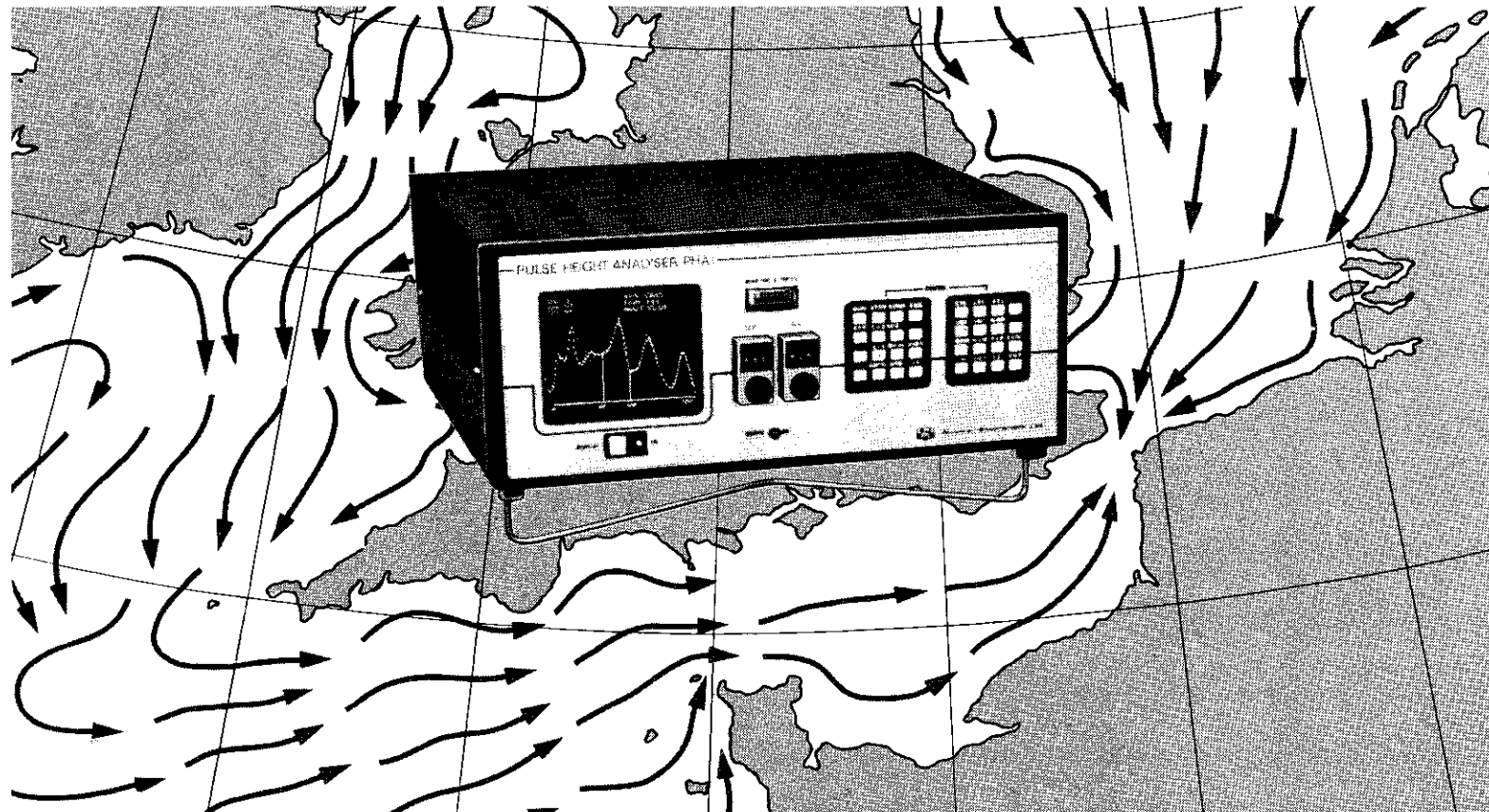
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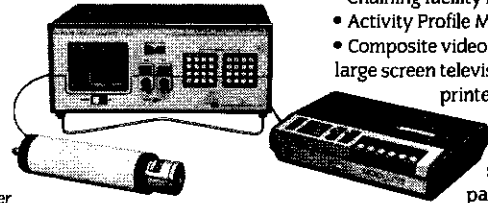


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If you want hard copies of data, we can supply all the peripheral equipment you need. Indeed, the PHA1 can also be connected to a host processor.

For adaptability and easy servicing, the PHA1 is packaged in a Eurocard format.

Compare the specification:

- Incorporates H.V. supply, preamplifier and amplifier for direct connection of scintillation detectors
- Chaining facility for multiple operations
- Activity Profile Mode for Activity/time studies
- Composite video output for driving remote large screen television monitors and video printers
- Simplified operation using keypad entry
- Clear visual indication of spectral data and operating parameters

- Modular hardware system
- Serial interface for spectral data output and input
- Real time, live time and count limit controlled acquisition
- Integration over selected region of interest
- Dead time indication
- Good differential and integral linearity
- 256, 512, 1024 channel groups
- Data manipulation between groups
- Peripheral range includes video printer, serial printer, digital cassette recorder and host microprinter for spectral data analysis
- Small and compact

cc 1083

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①

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## Degrader for High Voltage

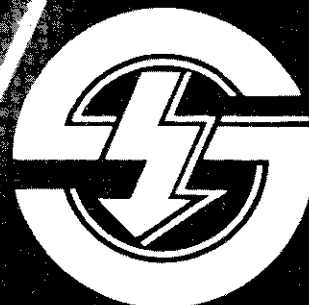
Concerned in the case of this component is a voltage divider for the pilot experiment of «LEP-DELPHI» resp. BARREL RICH.

- ① Entire component from outside with visible electrode no. 30.
- ② Enlarged section through the electrode parts.

In a series of preliminary development stages it has been successful, to break down a defined voltage of 210 KV over 30 graded built-in electrodes.

Isolating distance between the electrodes is 0.7 mm.

The entire component was produced by the high-vacuum process.

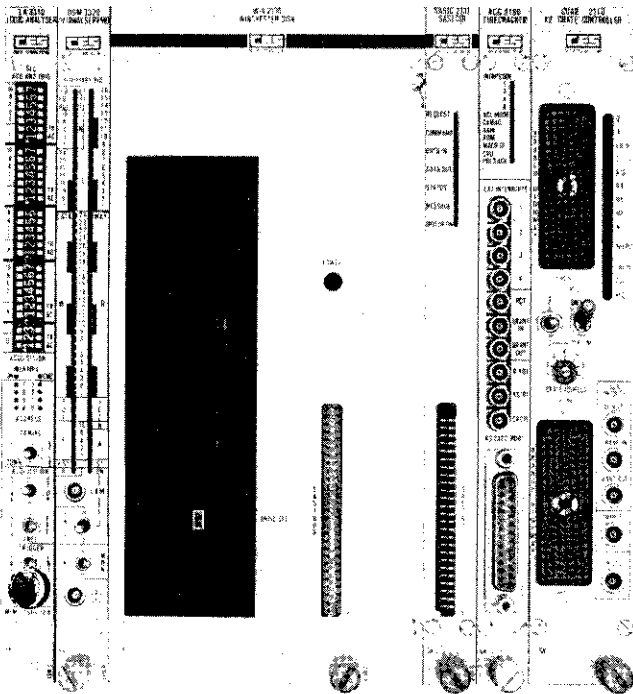


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- capable of the state of the art performance
- easy to operate
- transformable into a front-end system at the flick of a switch

Hardware:

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Options:

99110 CPU CPU with floating point instruction set.  
 WCTR 2131 SASI winchester/floppy controller.  
 WIN 2130 Winchester disk sub-system including  
 drive, interface and independant power supply.  
 LA 3310/ADSM 3320 logic analyser.

Software:

-----  
 The following languages are available :

Assembler, BASIC, FORTH, NODAL, PASCAL, MODULA 2.  
 Assembler, BASIC, FORTH and NODAL can be EPROM based  
 and do not require the WIN 2130.

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## ACC 2180

which includes the following specifications :

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- latest DEC DLART DC 319 console interface
- fast 128 Kbytes dual-port memory with mixed static RAM/EPROM.
- optional Q-Bus interface
- built-in programmable LAM grader
- additional fast three-port memories

The ACC 2180 outperforms current top-of-range micros and runs standard DEC software.

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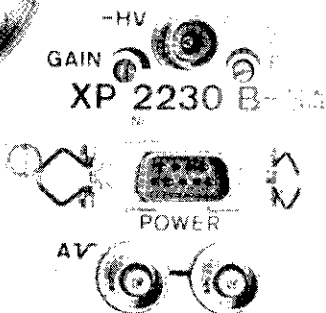
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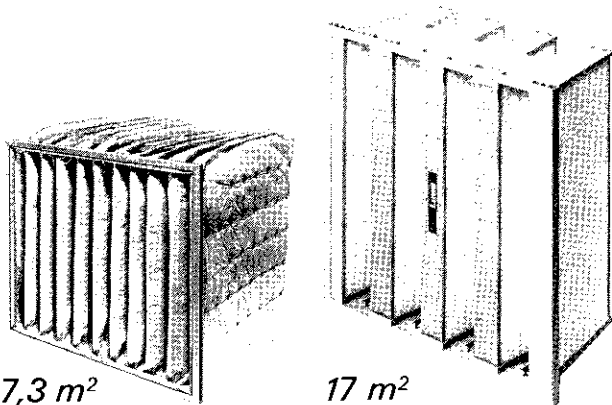
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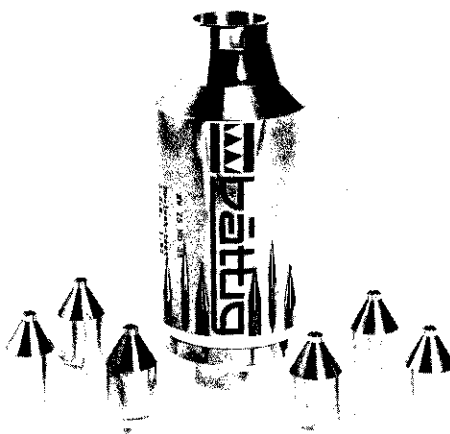
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