

People and things

Schrödinger's widely-read book 'What is life?' in advancing modern molecular biology.

A 1948 BBC recording 'Do electron's think?' testified to the quality of Schrödinger's English, attributed by him to his maternal grandmother. Another vivid reminder came from his daughter Ruth Braunizer, who was delighted by the cat adorning the logo on the conference rostrum.

The Conference was supported by the Austrian government, the Dublin Institute for Advanced Studies and by many generous donations.

From D. Olive

On people

After 25 years, distinguished Soviet physicist V. N. Gribov recently revisited CERN. After recalling then having seen Murray Gell-Mann making his historic prediction of the omega-minus particle, Gribov presented his somewhat unorthodox views on the role of light quarks in the quark confinement mechanism. He also claimed that gluonium — matter made of gluons rather than quarks — should not exist. Despite vigorous efforts, no conclusive evidence for the existence of gluonium has yet been found.

Earlier this year, the sixtieth birthday of Austrian theoretician and former CERN director and Scientific Policy Committee member Walter Thirring was marked by dedicating the 1987 sessions of the annual Universitätswochen für Kernphysik in the Austrian town of Schladming, with lectures given by his friends and collaborators.

Alan Jeavons, Peter Frey, David Townsend and Alfred Donath have been awarded this year's Prix de Jubilae from the Swiss Society of Radiology and Nuclear Medicine for their work on the development of a positron camera for diagnostic



V. N. Gribov (right), seen here with Tord Ekelof of Uppsala.

HEAD OF ENGINEERING GROUP

Sincrotrone Trieste spa, an Italian limited company invites, applications for the position of Head of the Engineering Group in the Synchrotron Radiation Source Project. The Project, planned for construction in Trieste, Italy, consists of a 2 GeV electron storage ring and its injection system. The storage ring will produce beams of VUV and soft X-ray synchrotron radiation from wiggler and undulators with extremely high flux and brilliance. When completed, it will provide outstanding research opportunities to a multi-disciplinary scientific community.

The successful candidate will report directly to the Project Head, and will be responsible for the coordination of design, construction and operation of the magnets and power supplies, the survey system and the coordination of the electrical and mechanical installation. This is a senior position which requires advanced degree in electrical or mechanical engineering and at least ten years' experience in the management, design and construction of large particle accelerators.

To apply please send a complete curriculum vitae, a list of publications and the names of the referees to the attention of:

Max Cornacchia
Sincrotrone Trieste
Area di Ricerca
Padriciano 99
34 012 Trieste, Italy

Ref. M/001 (to be indicated in the envelope)

High Energy Physics Research Associates

There are vacancies for Research Associates to work with groups in high energy physics. Groups from the Rutherford Appleton Laboratory are working on experiments at CERN, DESY, ILL, and SLAC. There is in addition a vacancy in the HEP Theory Group.

Candidates should normally be not more than 28 years old. Appointments are made for 3 years, with possible extensions of up to 2 years. RAs are based at the accelerator laboratory where their experiment is conducted, and at RAL, depending on the requirements of the work. Most experiments include UK university personnel with whom particularly close collaborations are maintained.

Please write for an application form quoting VN 567 to:
Recruitment Office, R20, Rutherford Appleton Laboratory, Chilton, Didcot, Oxfordshire OX11 0QX ENGLAND.



Experimental Physicist

A position is available for an experimental physicist at the Swiss Institute for Nuclear Research.

SIN operates a 600 MeV isochronous cyclotron which is used to produce a number of meson beams. The position is initially available for three years.

The successful candidate will be expected to work primarily in medium energy nuclear physics experiments at SIN, but the opportunity to also take part in an experiment at CERN may be available.

Additional information can be obtained from:

Dr. Q. Ingram (Tel. 056/99 32 58)

or Dr. J. Domingo (Tel. 056/99 32 51).

Applications, containing curriculum vitae, list of publications and references should be sent as soon as possible, but not later than July 31, 1987 to

SIN
Personnel Division
CH-5234 Villigen
Switzerland
Code 588



UNIVERSITY OF CAPE TOWN

Chair of Theoretical Physics

Applications are invited for the above tenured Chair in the Department of Physics, for appointment on 1 October 1987 or as soon as possible thereafter. The appointee will be expected to participate in teaching at undergraduate and graduate levels and to strengthen existing research interests.

The University is seeking a theoretical physicist with an established research reputation at international level. Current research interests in theoretical physics involve quantum chromodynamics, chiral symmetry breaking and the confinement problem, superstrings, statistical mechanics of strongly interacting matter, nuclear structure and reactions, and approximation methods in quantum mechanics. The main thrust of research in experimental physics lies in the fields of nuclear and laser physics.

Appointment, according to qualifications and experience will be made in the salary range R37 482-R45 069 per annum, with an annual bonus and attractive staff benefits. The University anticipates that salary ranges may be increased in the foreseeable future.

Applicants should submit a full curriculum vitae and the names and addresses of three referees, not later than 11 September 1987 to the Registrar (Attention: Appointments Office FH1687) University of Cape Town, Rondebosch, 7700, Republic of South Africa. Further information may be obtained from the above or from the Secretary, SA Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE.

The University's stand against apartheid and all racially discriminating legislation is on record. Information on this as well as on the University's policy not to discriminate in the appointment of staff or the selection of students on the grounds of sex, race or religion is obtainable on request.

Bates Wells Recruitment CT 181R

Karl Lanius, Director of the Institute for High Energy Physics of the German Democratic Republic.

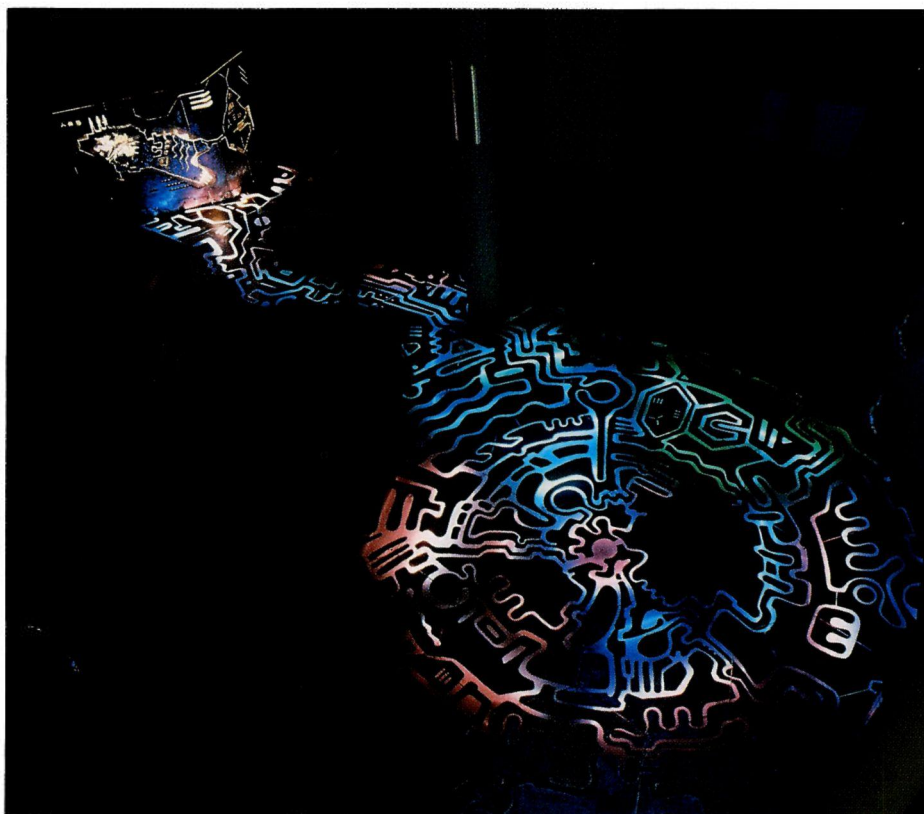


imaging. Development began at CERN in the late 1970s and continued in the Division of Nuclear Medicine of Geneva Cantonal Hospital.

On 3 May, the Institute for High Energy Physics of the East German Academy of Sciences celebrated the 60th birthday of Director Karl Lanius. Besides playing a major role in the development of high energy physics research in the German Democratic Republic, Lanius has been also a member of several major international committees, and a vice-director of the Joint Institute for Nuclear Research, Dubna.

The Institute for High Energy Physics, Zeuthen, German Democratic Republic, has been in existence for 25 years. Its researchers are presently collaborating in the neutrino physics programme at Serpukhov (USSR), in the L3 experiment for CERN's LEP electron-positron collider and the H1 experiment for the HERA electron-proton collider at the German DESY Laboratory. The statue is of Max Planck.

'Cosmic Song' — visitors arriving at CERN can now admire Serge Moro's dynamic sculpture illuminated by fluorescent tubes responding to cosmic ray signals. The display was caught at its best by CERN photographers Gilbert Cachin and François Julliard.



**UNIVERSITY OF ILLINOIS
at Urbana-Champaign**

ASSISTANT PROFESSOR

The Department of Physics anticipates a faculty appointment in experimental particle physics beginning on August 21, 1988. This would be a tenure-track position, although in exceptional circumstances an appointment directly to a tenured position would be considered. Our principal interest is in the candidate's ability to teach effectively at both undergraduate and graduate levels, and to conduct a vigorous and significant research program. Salary would be commensurate with qualifications.

The high energy physics group is large and diverse, including collaborations at SLAC (SLD), Fermilab (CDF), Brookhaven (neutrino oscillations), and DESY (ZEUS).

Applications, consisting of a C.V., list of publications, summary of research interests, and the names of at least three references should be sent to:

**Professor A.C. Anderson
Head, Department of Physics
University of Illinois
1110 W. Green Street
Urbana, IL 61801
Telephone: 217-333-3760**

To receive full consideration, applications should be received prior to December 1, 1987. Interviews may take place during the application period, but no final decision will be made until after December 1, 1987.

The University of Illinois is an Equal Opportunity/Affirmative action employer.

HEAD OF VACUUM GROUP

Sincrotrone Trieste spa, an Italian limited company, invites applications for the position of Head of the Vacuum Group in the Synchrotron Radiation Source Project. The Project, planned for construction in Trieste, Italy, consists of a 2 GeV electron storage ring and its injection system. The storage ring will produce beams of VUV and soft X-ray synchrotron radiation from wigglers and undulators with extremely high flux and brilliance. When completed, it will provide outstanding research opportunities to a multi-disciplinary scientific community.

The successful candidate will report directly to the Project Head, and will be responsible for the coordination of design, construction and operation of the vacuum system of the accelerator complex. Particular aspects of the technology involve the vacuum chamber, the pumping system and the study of gas desorption caused by synchrotron radiation. This is a senior position which requires advanced degree in physics or mechanical engineering and at least ten years' experience in the design and construction of high vacuum systems. Previous experience in accelerator technology is desirable.

To apply please send a complete curriculum vitae, a list of publications and the names of three referees to the attention of:

**Max Cornacchia
Sincrotrone Trieste
Area di Ricerca
Padriciano 99
34 012 Trieste, Italy**

Ref. V/001 (to be indicated in the envelope)

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ISC is a very dynamic and rapidly growing industrial Group with factories in the USA, UK and Italy, quoted on the Stock Exchange in London.

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Junior Digital Designers with:

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- A background in international network systems is appreciated

If you agree to accept very challenging jobs and interesting career proposals please send your curriculum to:

**LABEN
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e le comunicazioni S. p. A.
General Management
S.S. Padana Superiore 290
20090 VIMODRONE (Milano)
Italy**

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Phone: (022) 82 33 55

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From the specialist in high-density fast-NIM instrumentation

FTA 810

Octal Fast Amplifier

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CO 4010

Quad 4-fold Logic Unit

- Coin/anticoin/off settings
- overlap and updating outputs
- fast-NIM and TTL outputs
- LED indicator
- gate input

DV 8000

Octal Variable Logic Delay

- adjustable delay 10-50 ns
- 15 ns pulse-pair resolution
- 3 outputs/channel
- fast-NIM logic signals
- < 10 ps/ $^{\circ}$ C drift

RD 2000

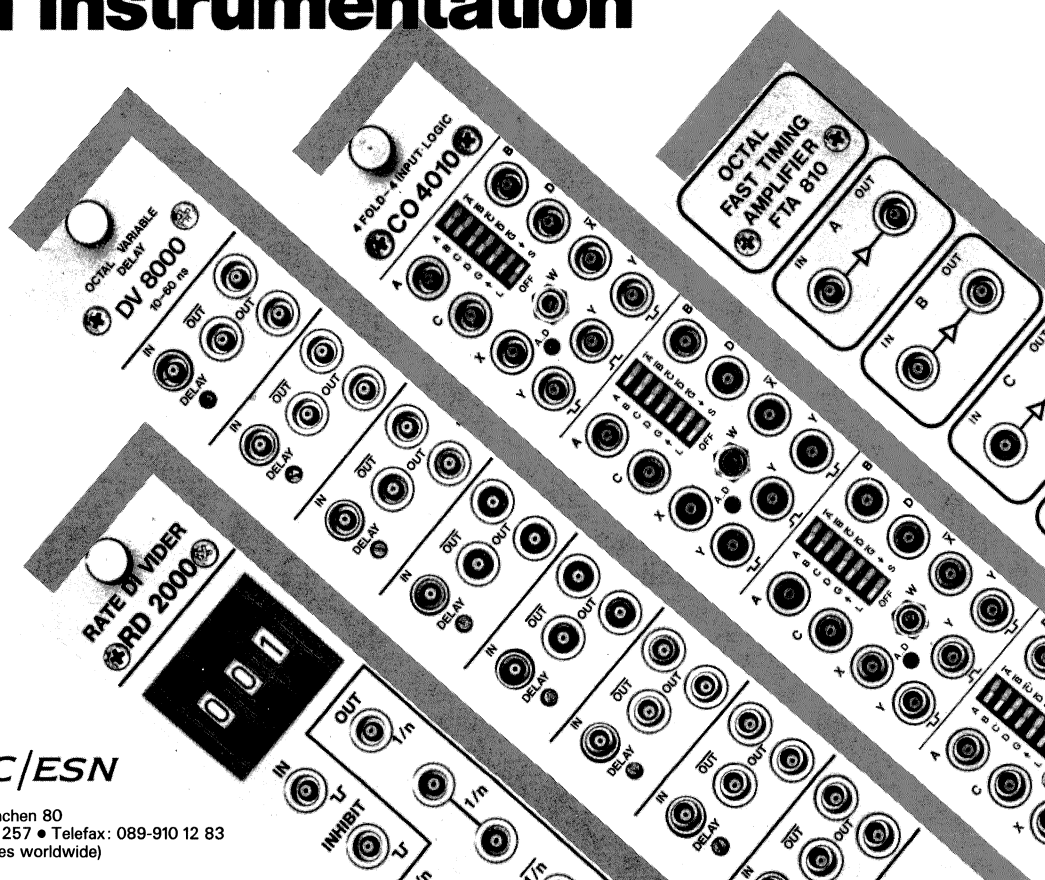
Dual Rate Divider

- Dividing from 1000:1 to 1:1
- 40 MHz maximum rate
- propagation delay independent of ratio
- inhibit input
- 6 outputs/channel
- fast-NIM logic signals

For more information:

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**Model 2262 Multi-Input, 10-Bit,
40/80 Megasample/sec
Waveform Digitizer**

Developed for Jet, Image and Time Projection Chamber (TPC) Systems in High Energy Physics and Heavy Ion experiments, LeCroy's Model 2262 Waveform Digitizer offers precision analysis of both chamber performance and readout electronics.

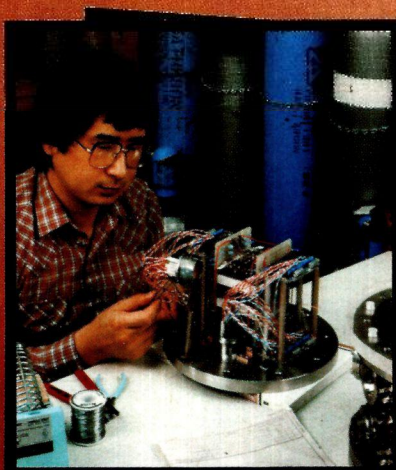
Bi-polar inputs permit simultaneous sampling from sense wires or pads. The DC-coupled 40 MHz analog bandwidth and 10-bit resolution means that the details of the chamber signals will not be lost. Up to four signals at 40 megasamples/sec or two signals at 80 megasamples/sec are captured by a single-width CAMAC (IEEE-583) module. External timebases may also be used.

The Model 2262 is compatible with GPIB (IEEE-488) operation and works with IBM PC™-based software for easy, user-oriented, waveform display and control. Support and accessory modules are available. Contact LeCroy worldwide for more information and detailed specifications.

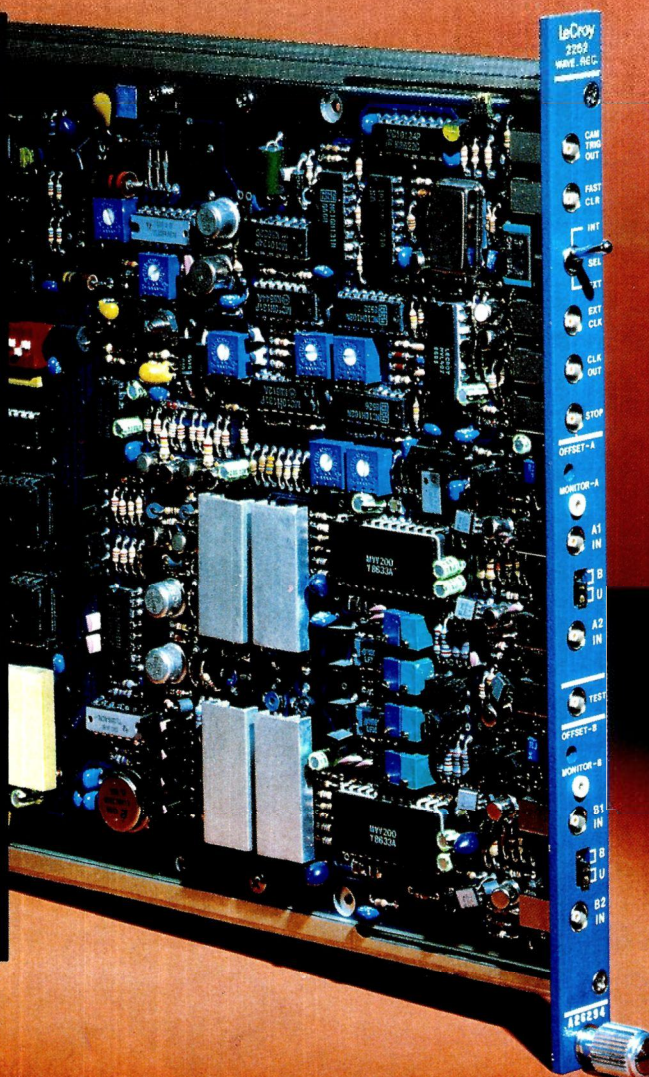
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*IBM PC is a registered trademark of International Business Machines Corporation.
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LeCroy digitizers are being used for detector development in Lawrence Berkeley Laboratory's radial drift detector.



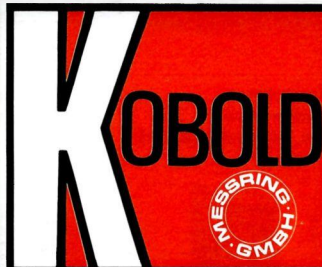
Detector Development Station with HV supply, digitizer, amplifier and time base in bench top mainframe. GPIB connection to an IBM PC AT running CATALYST™ Software.



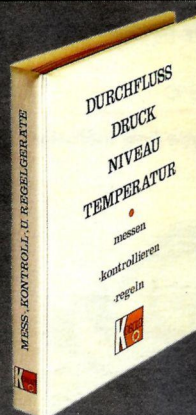
LeCroy

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Route du Nant-d'Avril 101, 1217 Meyrin 1-Geneva, Switzerland. Tel: (022) 82 33 55

CATALOG



Instrumentation
and control for
FLOW RATE
PRESSURE
FLUID LEVEL
TEMPERATURE



Flow measurement

Indicating instruments,
controllers and recorders

Pressure measurement

Liquid column devices and switches

Level measurement

Indicating instruments,
controllers and recorders

Temperature measurement

Thermometers, controllers
and monitors

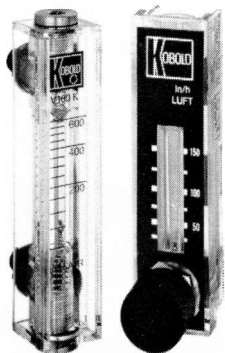


The Kobold Handbook will be sent
to you, free of charge, on request.

Sodener Straße 120
D-6233 Kelkheim
Postfach 2052
☎ (0 61 95) 69 11/69 72
Tx 4 072 326 komr d
Telefax (0 61 95) 6 50 00

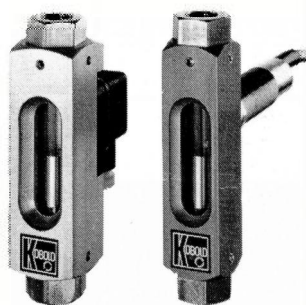
Flow measurement

Microvolume flowmeters
with or without needle valve
in **polycarbonate, polysulfone and acrylic glass**



Water: 0.1-1.5 l/h to 5-80 l/h
Air: 0.5-5 l_N/h to 0.2-2.6 Nm³/h

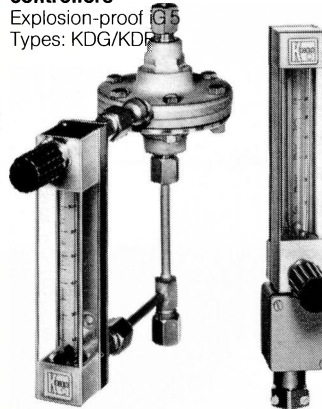
Microvolume flow controllers
Explosion-proof iG 5
Types: KSR and SVN



Water: 0.1-120 l/h
Air: 2 l_N/h - 2 Nm³/h

Microvolume flowmeter/ controllers

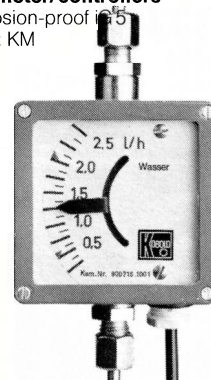
Explosion-proof iG 5
Types: KDG/KDF



Water: 0.002-0.02 to 16-160 l/h
Air: 0.03-0.3 l_N/h to 430-4300 l_N/h

All-metal microvolume flowmeter/controllers

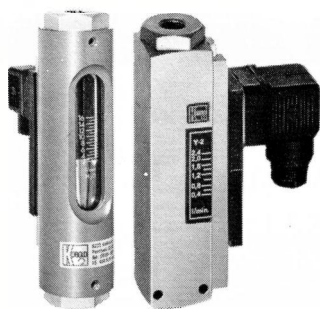
Explosion-proof iG 5
Type: KM



PN 40 - PN 100/-20...+150 °C
Water: 0.1-1 l/h to 25-250 l/h
Air: 4.5-45 l_N/h to 0.8-8 Nm³/h

Flowmeter/controllers

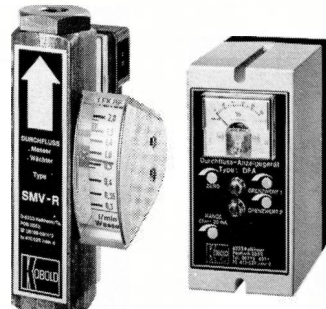
Explosion-proof iG 5
Type: SV-R/S-R



Water: 6-60 l/h to 0.5-9 m³/h
Air: 0.2-2 Nm³/h to 20-250 Nm³/h

All-metal flowmeter/controllers with analog output

Explosion-proof iG 5
Type: SMV-R/VKM-G



PN 350/-50 °C...+160 °C
Water: 3-60 l/h to 0.5-15 m³/h
Air: 3-35 l/h to 20-400 Nm³/h

Flowmeters and controllers with analog output independent of viscosity and location

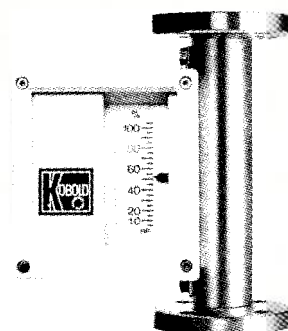
Types: VKG and VKM



Viscosity range: 1-5000 mm²/s
e. g.: 0.01-0.07 to 8-80 l/min of oil

All-metal flowmeters and controllers with analog output

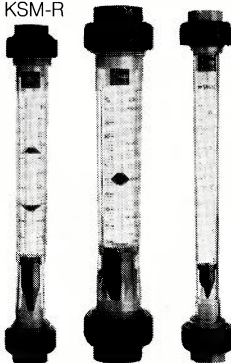
Type: MC



PN 40 - PN 600/-50...+300 °C
Water: 2.5-25 l/h to 10-100 m³/h
Air: 75-750 l_N/h to 180-1800 Nm³/h

Trogamid and polysulfone flowmeter/controllers with analog output

Type: KSM-R



Water: 16-160 l/h to 2-20 m³/h
Air: 0.25-2.5 Nm³/h to 58-580 Nm³/h

Electronic flow controllers

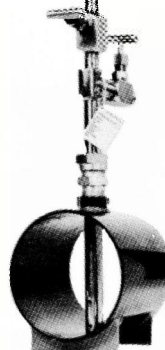
for gases, liquids and powders
Media: Δp=0
Stainless steel, PVDF and polypropylene
Type: EGE



Liquids (incl. **highly viscous**):
0.01-4 m/s
Gases: 0.1-15 m/s
PN 300/-40...+90 °C

Flow sensors proportional to differential pressure

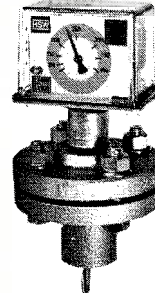
Type: Beta-Probe



Error: ± 0.5% or ± 2%
R 1/2" - R 2"/DN 50 - 9 m lead dia
Liquids, gases and steam

Paddle-bellows flowmeters and controllers for heavily contaminated media

Types: HSW-DWU-DWP-DWS



Pipe connection 3/8" - 2"
Flange connection DN 10 - DN 50
Slip-on flange for DN 40 - DN 1000
1-4 l/min to 10000 m³/h
PN 6 - PN 10/100 °C

Paddle flow controllers

Type: PSR
Brass and stainless steel

Type: PPS-3S
Polysulfone



3-5 l/min
to 20-28 m³/h
PN 16 - PN 25/100 °C

Horizontal ball-type flow indicator

Type: DA-KU



Range
Water: 0.3 l/min - 90 l/min
Air: 0.015 Nm³/min - 200 Nm³/h

Flow indicator, can be mounted in any position, with plastics rotor and automatic sight-tube cleaner

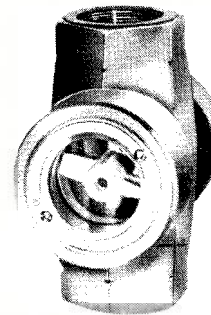
Type: DA-RA



R 1/4" - R 1/2"
PN 16/100 °C

Flow indicator, can be mounted in any position, with Teflon rotor

Type: DA-R



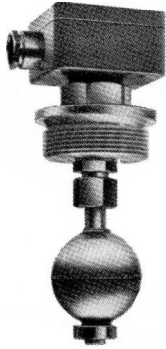
R 1/4" - R 1/2" / flange DN 25/40/50
suitable for both dark opaque liquids and for gases

Measurement of level



Magnetic float switches

Type: N
180 different types in high-grade steel, titanium, brass, PPH, PVC, PVDF and PTFE



PN 100/180 °C
Den. liq. min $\geq 0.25 \text{ kp/dm}^3$

Magnetic float switches

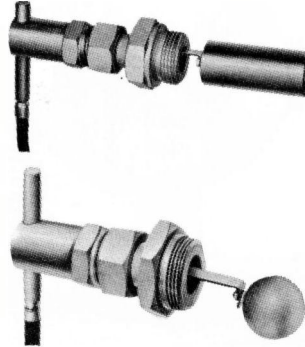
Type: NS
for side-fitting



PN 100/180 °C
Den. liq. min $\geq 0.25 \text{ kp/dm}^3$

Magnetic float switches

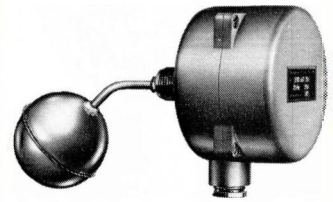
Type: NV $\frac{1}{2}$ " und NV $\frac{3}{4}$ "
for side-fitting



PN 18/110 °C
Den. liq. min $\geq 0.8 \text{ kp/dm}^3$

Float switches with spring contact

Type: FNS
for side-fitting



PN 16/350 °C
Den. liq. min $\geq 0.8 \text{ kp/dm}^3$
 $I_{\text{max}} = 10 \text{ A bei } 220 \text{ V} \sim$

PTFE float switches

Type: NST
for side-fitting with **mercury contact**



1 bar/160 °C
Den. liq. min $\geq 0.7 \text{ kp/dm}^3$
 $I_{\text{max}} = 4 \text{ A bei } 220 \text{ V} \sim$

Bypass float switches

with spring contact
Type: FNS



PN 16/350 °C
Den. liq. min $\geq 0.7 \text{ kp/dm}^3$
 $I_{\text{max}} = 10 \text{ A bei } 220 \text{ V} \sim$

Bypass magnetic float switches

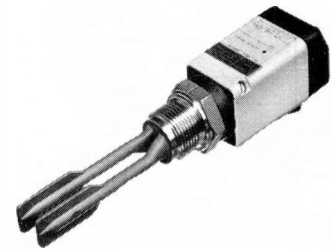
Type: NB-10



PN 10/150 °C
Den. liq. min $\geq 0.7 \text{ kp/dm}^3$

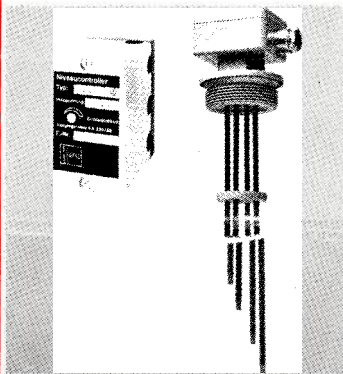
All-purpose limit switches

for liquids
Type: FTL 160



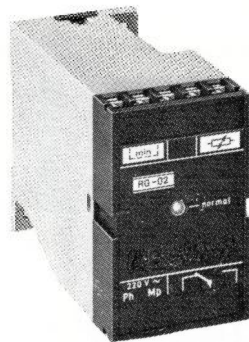
Den. liq. min: independent
max. viscosity: 2000 mm²/s
PN 16/-40...+150 °C
G x 5 Cr Ni Mo Nb 1810 austenitic steel

Limit switches for conductive fluids



PN 100/150 °C
single to quintuple electrodes

Thermal resistor switches for nonconductive liquids

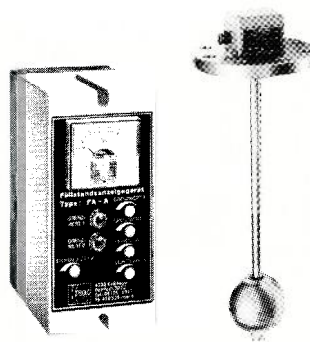


$t_{\text{max}} = -25 \text{ °C} \dots +55 \text{ °C}$
max. viscosity 10 °E

Level indicators

Level pick-ups

Type: NM

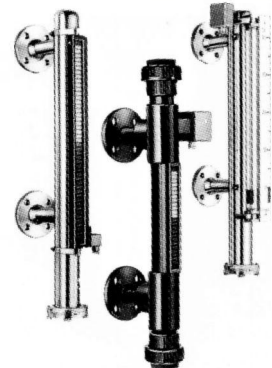


PN 25/-50 °C...+130 °C

Bypass level indicators

with magnetic transmitters

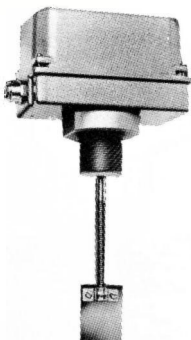
Type: BMG



PN 350/300 °C

Vibratory level signalling devices

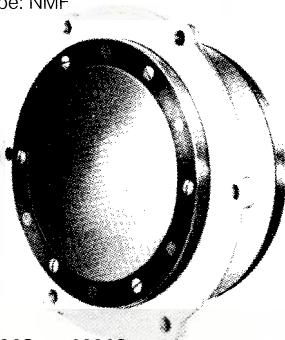
for heavy and viscous media with **flexible** vibratory sensor
Type: NBV



PN 6/80 °C/IP 55
R1 $\frac{1}{2}$ " or flange DN 50 - DN 150

Diaphragm-type level signalling devices

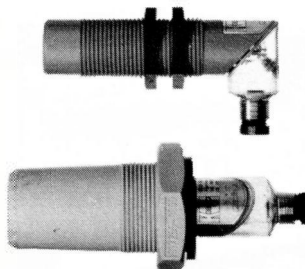
for installation in silos, bunkers, etc. for coarse and fine **bulk goods**
Type: NMF



-30 °C...+200 °C
for Zone 11 explosion-proof rooms without ancillary equipment

Capacitive level switch

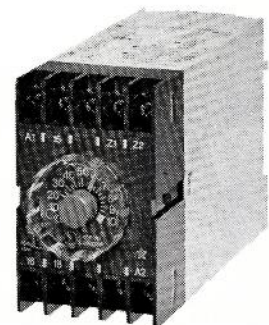
for fine and powder bulk goods
Type FTC 960



PN 6/-20...+80 °C
R1 $\frac{1}{2}$ " adapter R1 $\frac{1}{2}$ "

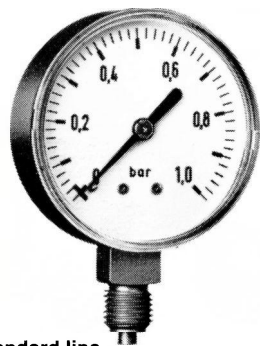
Time-delay starting relays

Contact protector relays



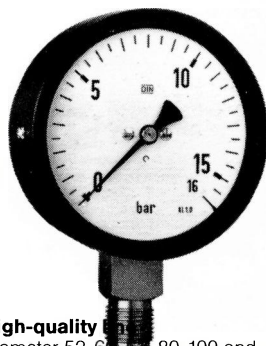
Explosion-proof relays - Zone 0
Control systems

Pressure



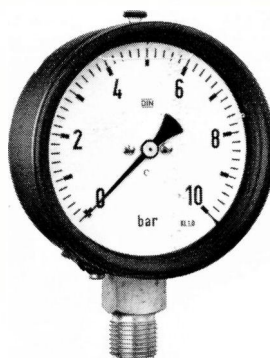
Standard line

Diameter 40, 50, 63, 80, 100 and 160 mm,
Quality Class 2.5
Measuring range 0-1 bar to 0-400 bar



High-quality line

Diameter 52, 63, 80, 100 and 160 mm,
Quality Class 1.0
Measuring range 0-60 mbar to 0-400 mbar
0-0.6 bar to 0-1600 bar



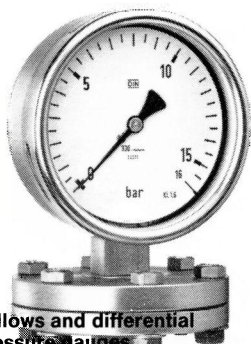
Glycerine-filled pressure gauges

Diameter 63, 100 and 160 mm
Quality Class 1.0 to 2.5
Measuring range 0-0.6 bar to 0-1000 bar



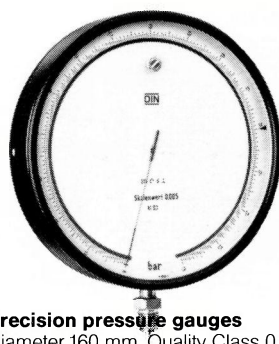
Chemical line

Diameter 40, 50, 63, 100 and 160 mm,
Quality Class 1.0
Measuring range 0-0.6 bar to 0-1000 bar



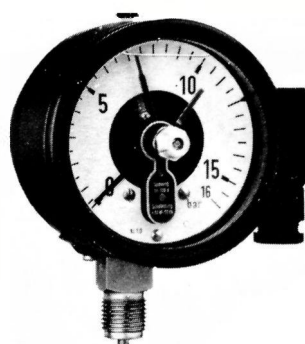
Bellows and differential pressure gauges

Diameter 100 and 160 mm
Quality Class 1.5
Measuring range 0-60 mbar to 0-400 mbar
0-0.6 to 0-25 bar



Precision pressure gauges

Diameter 160 mm, Quality Class 0.6 and 0.3
Diameter 250 mm, Quality Class 0.3, 0.2, 0.1
Measuring range 0-0.6 bar to 0-1600 bar

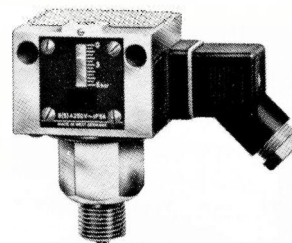


Contact pressure gauges

- Magnetic snap-action contacts
- Crawl contacts
- Inductive contacts
- Pneumatic contacts

Pressure and differential pressure switches

Adjustable differential setting
Liquids, steam and gases
Type: KD/KV

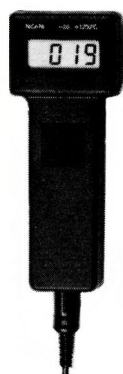


-250 mbar to 100 mbar
15 bar to 63 bar
250 VAC, 10 A

Temperature

Digital hand thermometers

Type: 7300/9300



-200°C...+ 600°C
- 40°C...+1200°C

Digital hand thermometers

For **Zone 0** explosion-proof rooms
Type 9500



-40°C...+ 130°C
-70°C...+1200°C
-50°C...+1750°C

Precision dial thermometers

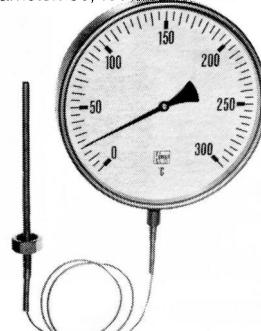
Nitrogen-filled
For food industry, etc.
Error: ± 0.6 and $\pm 1.0\%$ of full-scale reading
Diameter: 80, 100, 160 and 250 mm



-250°C...+650°C

Precision dial thermometers

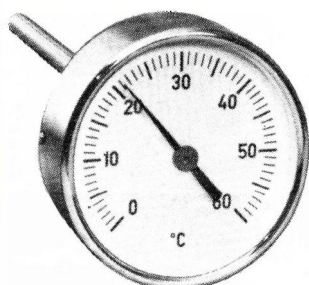
Mercury-filled,
error $\pm 1.0\%$ of full-scale reading
Type: 610
Diameter: 80, 100 and 160 mm



-30°C...+500°C

Machine thermometers

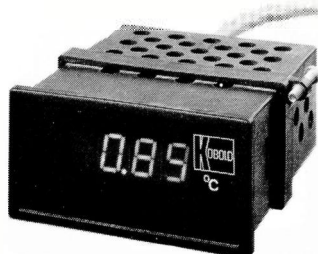
Bimetal
50, 63, 80, 100, 160, 250 mm



-35°C...+ 50°C
0°C...+300°C

Digital 48x24 thermometers for panel mounting

Type: TT 4600



0°C...+ 99.9°C
-20°C...+600°C

Temperature controllers

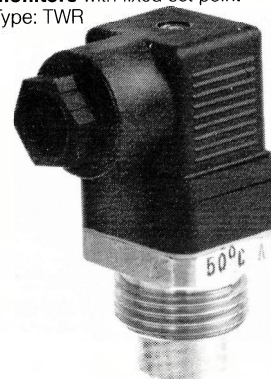
with adjustable set point
Type: KTAM/KTXM



-30°C...+ 10°C
+80°C...+130°C

Temperature controllers and monitors

with fixed set point
Type: TWR



+30°C...+120°C
PN 16/IP 65