Relays

Magnecraft offers Class 388 general-purpose relays in covered or open style units with a wide choice of ac or dc coil voltages and SPDT to 3PDT, 10-A contacts. All relays have three-way pierced terminals, i.e., plug-in, tab, or solder. Sockets with quick-connect, solder or PC terminals are available for plug-in use.

Magnetic Electric Co.
5575 N. Lynch Ave.
Chicago, Ill. 60630

CRT Data Terminal

VST-1200 screen size is 80 in. (standard 12-in. tube). Capacity is 1,296 characters. Display page: 72 characters/line, 18 lines/screen. Character size: 0.20 x 0.10 in. Code: Full 128-character ASCII generation and recognition. Refresh rate: 60 Hz. Display: 64 and 96 characters. Parity checking and generation: Even, odd, or none. Keyboard: Teletype Model 33TZ, plus standard 10-key adding machine, plus 10 control keys or 37 Vz. Cursor: Cursor home control up/down or left/right cursor may be moved one space at a time or slewed Non Destructive Cursor. Baud rate: input/output rates of 110, 150, 300, 600, or 1,200 baud are available (2,400-baud optional). Output hard copy: Information may be printed with a Model 33, 35, or 37 Teletype, NCR-EMT2, or other compatible printer. Video output: Composite video signal is compatible with most standard closed-circuit TV systems, allowing use of large-sized screens and multiple displays. Price: \$1,795.

Video Systems Corp.
7300 N. Crescent Blvd.
Pennsauken, N.J. 08110

Briefs

X-Y Recorders

Honeywell X-Y recorders are now made and sold by Esterline Angus, P.O. Box 24000, Indianapolis, Ind. 46224.

Biobelt

Biobelt is a long-distance electrocardiogram device developed by Lockheed Missiles & Space Co. The unit detects heart and body temperature signals and feeds them in sequence to a comment unit (after amplification), where the signals are converted to binary form and transmitted to a central unit. A CRT at the central unit reads the information at a rate of 10-5,120 samples/sec. Biobelt is worn about the waist as a belt.

Company Change

Nicolet Instrument Corporation has acquired Federal Scientific Corporation. Federal Scientific manufactures real-time spectrum analyzers and signal correlators. Its products and markets complement Nicolet's signal-averaging instrumentation.

Panel Meter

California Instruments of San Diego, California, will soon introduce a 3½-in. digital panel meter that is only ½ in. thick and will sell for about \$115. The unit uses LED displays and requires no more of a panel cutout than is needed for a cable.

Lehigh Valley Electronics

Lehigh Valley Electronics is now part of BRS-Foringer, Inc.

Swapping Instrumentation Information

Aperiodically, the Printout section of this journal will publish announcements judged to be useful concerning the availability of used psychological instruments, requests for information, departmental or individual exchange requests, etc. Address information to the Editor.

Notes

Automatic measurement of food competition in the laboratory rat

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The purpose of this paper is to describe an apparatus for measuring food competition in the home cage of the laboratory rat. Although this apparatus was designed to measure social dominance as indicated by priority of access to a food incentive, it might also be used as a measure of home-cage food competition over long periods of time.

APPARATUS

Figure 1 is a perspective view of the rats' home cage (double Wahmann suspended rodent cage, LC-75/B) containing the apparatus. The device divided the home cage into two equal

*This research was conducted while the senior author was on a leave of absence from Muskingum College, New Concord, Ohio. Reprints may be obtained from David Hotherfalls, The Ohio State University Research Center, 1314 Kinnear Road, Columbus, Ohio 43212.

areas, each occupied by one animal during the food competition period. A circular food cup with a lid containing a 1-5/16-in. opening (Wahmann LC-75/B) was clipped to the center of the front wall of the cage with a holder (Wahmann LL-75/B). To reach the powdered rat chow in the food cup, the rat had to deflect the hinged gate, which was designed so that only one rat could feed at any one time. In addition, the movement of the gate was limited so that the rats could not move from one side of the cage to the other. Figure 2 is a scaled schematic drawing of the device showing the major details. Adjustable V3-1 microswitches with JV-26 levers (Minneapolis-Honeywell) were mounted at "A" on either side of the gate. Inset "A1" shows a top view of the mounting for one of the two switches. The microswitches were adjusted to operate at the slightest deflection. These were connected through pulse formers to counters that recorded the number of gate deflections and the number of times a given pair alternated control of the food cup, and through relays to timers that recorded the duration of each rat's deflection. So, the number of occasions each rat controlled the food cup, the number of alternations of control, and the total time in control could be recorded.

"B" shows the top-hinged gate, which was constructed of clear Plexiglas with a 1-in.-diam Lucite rod at its base to cover the opening of the food cup lid. "D" indicates the 2-in.-wide aluminum angle plate (14 ga), which was screwed onto the 2½-in.-wide Plexiglas beam (C) from which the instrument was suspended. The angle plate (D) engaged the back notch of the rodent cage and served to mount the testing device. At the front, midway between "C" and "B," a slotted plug was wedged into the wire mesh of the cage wall to firmly engage "E." This served to position the gate (B) over the food cup opening. The handle end of a spring-loaded clothespin nicely served this function; its protruding end also served to hold the wiring away from the front of the cage. The barrier labeled "E" was constructed of 1/8-in. black Plexiglas and was suspended from a centered groove in "C." Each microswitch assembly (A) was protected by a Plexiglas cowl, and the wires from the microswitches exited via plastic tubes and converged into a common groove in "C." This groove was covered with clear plastic tape. Four inches from the front of the apparatus, the wiring terminated in a standard male connector.

APPLICATION

The apparatus described here

Fig. 1. Cutaway illustration showing the relative positions of the apparatus and a food cup in a rodent cage.

Fig. 2. Scaled side view of the apparatus with a top view of the adjustable microswitch assembly (A₁).

employs a modification of a home-cage food competition device which has been successfully used to measure dominance relationships (Krames, Carr, & Bergman, 1969; Baenninger, 1970). The basic procedure used in our laboratory is to chronically pair rats at approximately 21 days of age and to test them at 90 days. Food cups are made available for 60 min of every 23 h, and the behavior of each member of the pair during food competition recorded during the first 10 min of the feeding session.

The device has a number of advantages: (1) It facilitates long-term observations of large numbers of paired animals in a food competition situation. (2) Performance is measured in the animals' home cages. A number of investigators, including Eibl-Eibesfeldt (1961) and Harlow (1970), have pointed out the advantages of testing animals in their home cages. (3) It is relatively inexpensive and simple to instrument.

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