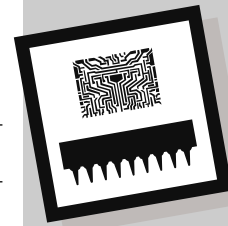


## Digital Technology / Microcomputer Technology



### Demonstration Boards

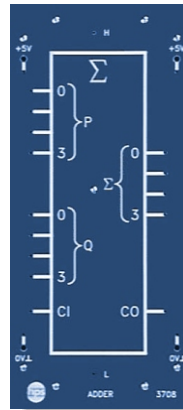
Series 3700



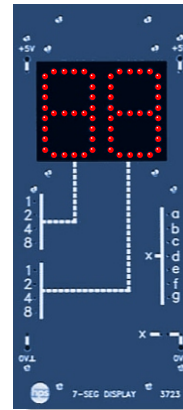
Input Keyboard



Hexadecimal Switch



Adder



7-Segment Display

- Universal demonstration system for the fundamentals of digital and microcomputer technology
- Displays and input units with a large and clear layout
- Same technical basic conception as with the training systems (DIGI BOARD 2 and Module System)
- Detailed test evaluations for the entire field of digital technology
- Operating voltage inputs protected against overvoltage and reversed polarity

With the Demonstration Boards, hps SystemTechnik offers an extensive program for the following fields:

- Digital technology
- Microcomputer technology
- Data systems technology
- Digital control engineering
- Industrial electronics
- Hybrid technology

The system is designed to perform simple logical operations as well as to set up sophisticated digital circuits.

The front panels of the Demonstration Boards are marked with symbols of the respective function group.

Connection is assured with connecting leads and plugs via 2 mm jacks.

The operating voltage of 5 V is supplied to the Boards via 4 mm or 2 mm jacks through an external power supply unit.

To conduct the experiments, the Demonstration Boards can be directly placed on a table or suspended in a rack for demonstration purposes.

The Demonstration Boards for Digital Technology are fully compatible with other hps digital systems, like the DIGI BOARD 2 and the Module System for Digital Technology.

The experiments contained in the experiment manual „Experiments in Digital Technology“ (Type V 0160) can be conducted with all digital systems from hps.

### Particular Features

All Demonstration Boards are protected against reverse polarity and overvoltage (max. 30 V DC).

#### 7-Segment Display

(Type 3723):  
display height: 65 mm  
To reduce the current consumption with keeping the same brightness, the LEDs are pulsed.

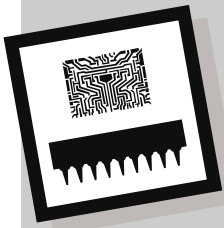
#### Input Keyboard

(Type 3702):  
provided with large keys, 30 mm x 30 mm

#### Hexadecimal Switch

(Type 3704):  
provided with large hexadecimal coding switches and additional 7-segment displays (25 mm high)

**LED Display** (Type 3720):  
provided with 10 mm LEDs

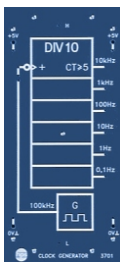


## Digital Technology / Microcomputer Technology

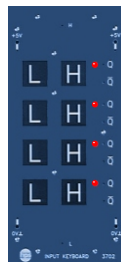
### Demonstration Boards for Digital Technology

## Demonstration Boards

### Series 3700



Type 3701



Type 3702

#### Clock Generator

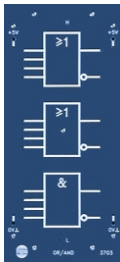
Type 3701

Squarewave signal (TTL level), with series-connected frequency divider; the divider can also be used separately; frequencies: 0.1 Hz, 1 Hz, 10 Hz, 100 Hz, 1 kHz, 10 kHz, 100 kHz; current consumption: 110 mA

#### Input Keyboard

Type 3702

Four pairs of keys (L/H), for generating LOW and HIGH states, HIGH state indicated by LED; current consumption: 10 ... 50 mA



Type 3703



Type 3704

#### OR / AND

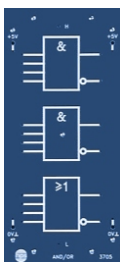
Type 3703

The Board contains two OR gates and one AND gate each with four inputs and two outputs, one of which is inverted; current consumption: 10 ... 20 mA

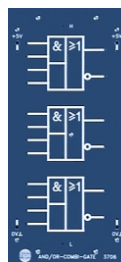
#### Hexadecimal Switch, Pushbutton Switch, Signal Source

Type 3704

One hexadecimal/dual coding switch (2-digit); one pushbutton switch and one signal source (0 ... 5 V DC/10 mA); display is done through 7-segment displays (display height: 25 mm); current consumption: 130 ... 200 mA



Type 3705



Type 3706

#### AND / OR

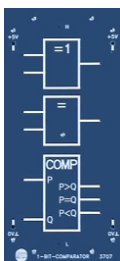
Type 3705

The Board contains two AND gates and one OR gate each with four inputs and two outputs, one of which is inverted; current consumption: 10 ... 20 mA

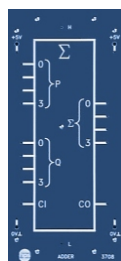
#### AND / OR Combi Gate

Type 3706

The Board contains three AND/OR combi gates (AND gates with two inputs each and OR gates with two outputs each, one of which is inverted); current consumption: 20 ... 30 mA



Type 3707



Type 3708

#### 1-Bit Comparator, Antivalence, Equivalence

Type 3707

The Board contains one antivalence gate; one equivalence gate and one comparator (1 bit); current consumption: 25 ... 35 mA

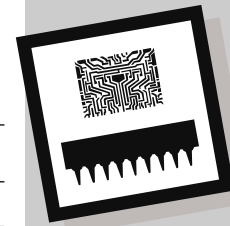
#### Adder

Type 3708

4-bit full adder with input and output carry, for addition of two 4-bit dual numbers; current consumption: 50 ... 65 mA

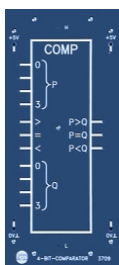
# Digital Technology / Microcomputer Technology

## Demonstration Boards for Digital Technology

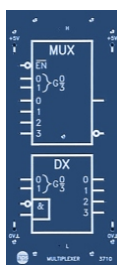


### Demonstration Boards

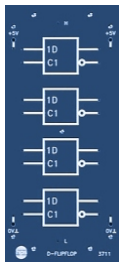
### Series 3700



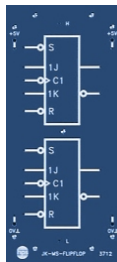
Type 3709



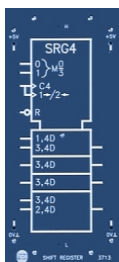
Type 3710



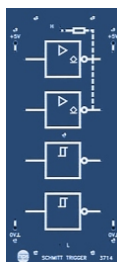
Type 3711



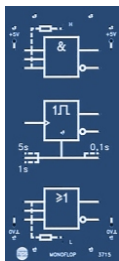
Type 3712



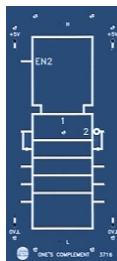
Type 3713



Type 3714



Type 3715



Type 3716

#### 4-Bit Comparator

Type 3709

For comparing two 4-bit dual numbers, with cascading inputs; current consumption: 8 ... 15 mA

#### Multiplexer, Demultiplexer

Type 3710

Multiplexer: four channels, with additional inverted output; demultiplexer: four channels; two inputs, one of which is inverted; current consumption: 30 ... 50 mA

#### D-Flipflop

Type 3711

The Board contains four D-flipflops with two outputs each, one of which is inverted; current consumption: 15 ... 25 mA

#### JK-Flipflop

Type 3712

The Board contains two JK-flipflops, which can also be used as RS-flipflops; current consumption: 30 ... 40 mA

#### Shift Register

Type 3713

4 bits, bidirectional, parallel and serial operation possible; current consumption: 15 ... 25 mA

#### Schmitt Trigger, Inverter

Type 3714

The Board contains two inverting Schmitt triggers and two inverters with open collector (pull-up resistors connectable); current consumption: 30 ... 50 mA

#### Monoflop, AND / OR

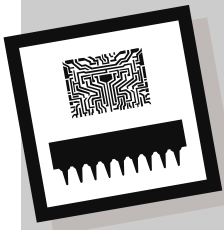
Type 3715

The Board contains one monoflop (settable times: 0.1 s, 1 s, 5 s), one AND gate and one OR gate with connectable pull-up and pull-down resistors; current consumption: 25 ... 30 mA

#### One's Complement

Type 3716

For inverting a 4-bit binary number; current consumption: 10 ... 20 mA

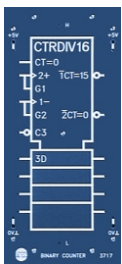


# Digital Technology / Microcomputer Technology

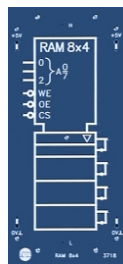
## Demonstration Boards for Digital Technology

### Demonstration Boards

### Series 3700



Type 3717



Type 3718

#### Binary Counter

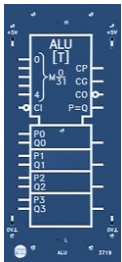
The Board contains one binary up/down counter, synchronous, 4 bits;  
current consumption: 20 ... 40 mA

Type 3717

#### RAM 8 x 4

Static RAM, eight addresses (0 ... 7), 4-bit data width;  
current consumption: 10 ... 30 mA

Type 3718



Type 3719



Type 3720

#### ALU

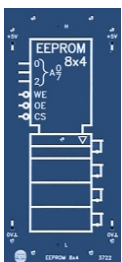
For conducting 16 arithmetic and 16 logical computing operations with two dual numbers (4 bits);  
current consumption: 5 ... 30 mA

Type 3719

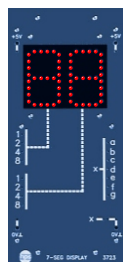
#### LED Display

12 LEDs (10 mm), divided into 3 groups with the colours red, yellow and green;  
current consumption: 10 ... 300 mA

Type 3720



Type 3722



Type 3723

#### EEPROM 8 x 4

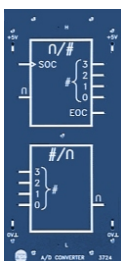
8x4 bits; storage time without power supply: approx. 1 hour;  
current consumption: 10 ... 30 mA

Type 3722

#### 7-Segment Display

2-digit, 7-segment display (display height: 65 mm), with dual/7-segment decoder, one digit can be switched for individual segment display; current consumption: 250 ... 300 mA

Type 3723



Type 3724

#### AD Converter, DA Converter

The Board contains one AD converter and one DA converter (4 bits);  
current consumption: 20 ... 50 mA

Type 3724