JUN 79


## DESCRIPTION

2056 is a memory module for dynamic RAM based on memory circuit type 4116-3.

- It is delivered with full capacity 16 kbytes mounted.
- The on-board memory is placed in the 4680 memory map in multiples of 16 K segments.
- Address selection is done by on-board switches.
- It is used in Z 80 double board applications. The double board computer provides refresh and cycle generetion.
- Facilitates DMA-use.

The total access time is determined by the memory circuit chosen, the delays (3TTL + bus) and CPU. The memory module is adapted to CPU with the signal MEMRDY* which requests for wait-state. For more information refer to the System Manual and data sheets on the concerned CPU-card.

The DataBoard requirements for 4680 -bus signalling are contained.

```
SPECIFICATION POWER +5V +5%,400mA
    +12V }\pm5%,40 m
    -12V }\pm5%,20m
ACCESS TIME Nominal 200 ns exkl. system delays.
SIZE Standard Europe card, 100 x 160 mm
CONNECTOR B }64\mathrm{ pin standard Europe connector
    (DIN 41612)
CONNECTION Any slot on the memory-side of the 4680-bus.
PIN NUMBERING See System Manual
```


## SIGNALLING CPU 2056

```
- 16 bits addressbus
- 8 bits tristate databus
- MEMRDY* is designed for requesting wait-stat
- MEM control comprises signals for read, write and refresh: MEMFL*, W*, ADMX*, RASST* CSTOP* and REFR*
Further information on bussignalling and conditions for wait-state can be studied in the System Manual.
ADDRESS SELECTION The Base Address of the module is selected with the switches OM1 and OM2 as tabled down. The onboard location is shown by the figure.
```



ON-BOARD LOCATION OF MEMORY CIRCUITS

Range 0-3FFF | $4 A$ | $\frac{\text { bit } 7}{\text { bit } 6}$ | $\frac{\text { bit } 5}{5 A}$ | $\frac{\text { bit } 4}{4 E}$ | $\frac{\text { bit } 3}{5 D}$ | $\frac{\text { bit 2 }}{4 D}$ | $\frac{\text { bit } 1}{5 E}$ | $\frac{\text { bit } 0}{4 B}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


NOTE RAM O CONTAINS THE LEAST SIGNIFICANT BIT (0)
OF THE MODULE ARRAY.


