
Title:

ASYNCHRONOUS INPUT DRIVER

Description

 **REGNECENTRALEN**

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Abstract:

This manual is a description of a transparent asynchronous input driver using the second TTY input controller.

ASYNCHRONOUS INPUT DRIVER

General description

The driver is driving a standard RC3600 Teletype Controller and can be used as a transparent driver for simple asynchronous input devices.

Control messages

The driver is reservable and reservation is done by sending a control message with the reservation bit set (1b13) and a non-zero MESS1. The driver is released if a message with same bit set is received with a zero MESS1 or it is broken, except when the break is caused by a power-failure.

A conversiontable can be set by sending a message with the conversion bit set (1b12), and the conversion table byte-address defined in MESS2. The table-address should be an even byte-address.

In MUSIL these messages are send if OPEN and CLOSE (true) are used.

A message with the positionbit set (1b10) will define a new timeout value defined by MESS3 of message. The timeout constant is interpreted in units of 20 ms.

The timeout constant defines the maximum time to wait between two characters before returning timeout status.

In MUSIL the statement SETPOSITION, with blocknumber equal the new timeoutvalue, will generate the message.

The timeout constant is undefined until a position message is received.

Input operations

Three modes of operation exists:

- 1: Readbinary, the input character is delivered after conversion if a conversion table is defined.

5: Odd parity, the most significant bit is regarded as a complemented parity bit.

9: Even parity, the most significant bit is regarded as a parity bit.

If odd or even parity are specified the conversion takes place after removal of the parity bit and if a non-zero table address is defined the resulting value is converted.

In case of parity error the faulty character is replaced by the value 26₁₀ (ASCII SUB) before conversion.

BIT 0 to 7 in mode can be used as a defect-mask, i.e. if any bit in the character read is set, and the same bit is set in the mask, the status defect-character is returned and the character is skipped.

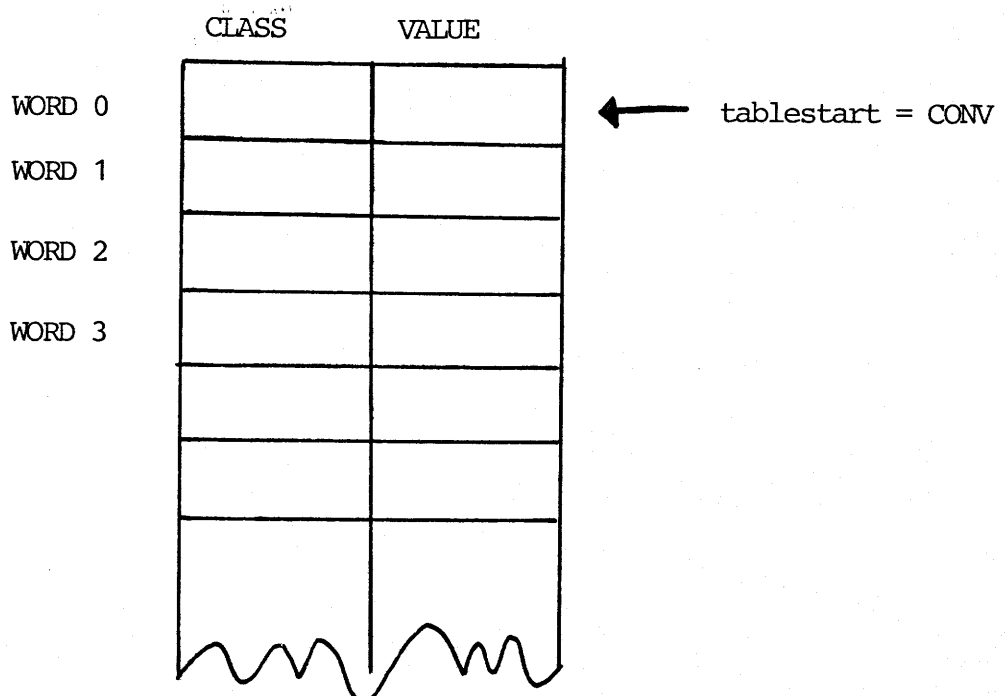
Output operations

All output operations are returned with status illegal and bytecount 0.

Conversion table

The conversion table is build with one word for each possible character value read, and for each value it defines a class and a resulting value.

The memory layout is as:



In MUSIL the table can be set up as:

```
TAB = #
      !           0           1           !
      ! CLASS   VALUE  CLASS   VALUE   !
!  0  !   0     0     0     1     !
!  2  !  128   2    132   3     !
!  3  !  132   3    132   3     !
      ...
      .... # ,
```

depending of the class the conversion is:

```
CLASS = WORD (CONVADDR//2 + CHAR) SHIFT (-8);
VALUE = WORD (CONVADDR//2 + CHAR) EXTRACT 8 ;
```

CLASS	DESC.	FUNCTION
0	Normal	The converted character is delivered.
128	Ship	The character is skipped.
129	Shift in	Tablestart: = tablestart - if value = 0 then 256 else value
130, 131	Shift out	Tablestart: = tablestart + if value = 0 then 256 else value
132 to 135	End of block	The converted value is delivered and the input buffer is returned.
<u>></u> 136	Illegal	Value is delivered and parity status is returned with the buffer.

Class 129, 130 and 131 can be used if special characters defines case shift.

Status

- 1b0 Driver break caused by operator or powerfailure. Characters can be lost.
- 1b3 Character defect. (See defect mask)
- 1b6 Device reserved, output rejected.
- 1b7 Character lost i.e. no input-buffer was pending at the driver when a character was input. One or more characters are lost.
- 1b10 Parity error.
- 1b14 Timeout. No character has been input within the time specified in the last position message.

If status chardefect or parity error are returned the number of faulty characters can be found in MESS2 of the answer. This count can be found in the MUSIL zone field ZFILE, if kind of zone defines the device positionable.

NOTE:

Normal multibuffering can be used, but the REPEATSHARE operation can not be used, as the driver is unable to return following transput messages with the not-processed status.