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DECUS NO.	8-571
TITLE	INPUT, OS/8 VERSION
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COMPANY	AB Hassle Molndal 1, Sweden
DATE	August 17, 1972
SOURCE LANGUAGE	SABR

INPUT Decus No 8-480 A rewritten for operating under OS/8.

INPUT

A relocateable input routine for input i free format to 8K Fortran under OS/8.

Usage:

Call INPUT (IDEV, A, NR)

where IDEV is device code for input (standard 8K Fortran usage), any device number). For device code 0 see below.

A is the first position to store the incoming numbers in (Floating pt vector)

NR is the number of items to be input.

Input is in a free format, the numbers are separated by , RETURN and SPACE. SPACE before a numeric input is ignored, space after a numeric input terminates a number. , and RETURN will terminate a number even with no numeral has been input, the value will be read as 0.

Special operators are as follows:

Character	ASCII	Meaning
,	254	terminates number
cr	215	" " must be given before return to main program is effected (but see \)
Space	240	" "
.	256	decimal point
rub	377	removes last input before terminator is given
CTRL/U A)	225	removes input since last cr
↑ A)	336	restarts input routine (removes all input)
\ A)	334	terminates input & returns to main program, all remaining numbers are set to 0
-	255	negative number
CTRL/C	203	return monitor directly
CTRL/L	214	ignored
Line feed	212	ignored

A These echo as - ↑ \ followed by CR/LF on TTY input. On other devices the routine will skip the rest of the line until CR is found.

B Non legal input is ignored and not echoed on teletype input but will give a fatal error and the "INPT" error message on input from other devices.

C The input is handled by two different routines:

a/ the teletype is handled by internal routine

b/ input from other devices is handled by calls to the Fortran subroutine GENIO. In this way it is equivalent to a read statement and calls to input and read statements can be mixed in a program. Reading on device independent input can be done in the same way as a Read (4,) statement i e a CALL OPEN must have been issued before and attempt to read past the end of file will result in an "INPT" error.

72-08-14
LP/AM

```
*^C

.ST
*TTY:<DTA1:INPUT,COPY\U\Y.LS(TC)


   1
   2
BBEG    1010
CHS     0000EXT
CLEAR   0000EXT
DECKOM  0674
DECP    1061
DEL     1044
DEVICE  0226
DIG     0217
ECHO    0561
ENDA    0224
ERASE   1071
ERRM1   0230
ERRM2   0231
ERROR   0000EXT
ERRT    0534
EXIT    0000EXT
FAD     0000EXT
FDV     0000EXT
FF      0203
FFLOT   0200
FLOT    0000EXT
FMP     0000EXT
FTIO    0211
GENCL   0432
GENIO   0000EXT
HR1     0315
IA      0225
IARG    0227
ILNR    0221
INIT    0321
INIT2   0333
INPUT   0232EXT
ISTO    0000EXT
J       0442
KCC     60320P
K1      0426
LBEG    0463
LEND    0477
LF      0514
MIN     0550
MINUS   0220
MPY     0000EXT
NR      0222
NTTY    0527
NUM     0216
NUMADD  0633
NUMCON  0616
NYNR    0334
OUT     1135
OUTPUT  0443
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```
PF       0223
READ     0356
READC    0420
READC2   0421
RETUR    0732
RTN      1140
RUB      1052
SEARCH   0443
SELECT   0434
SENDA    1100
SPACE    0750
STO      0000EXT
STORE    1011
ST2      1035
S1       0400
TADI     14000P
TERM     1002
TEXIT    0460
TF       0206
TTY      0330
TYPE     0443
T1       0452
T2       0310
UT       1115
UT2      1130
UT3      1113
UT4      1116
X1       0244
X2       0271
\BEG     0214
^LBEG    0462
   3
   4                                    ENTRY INPUT
   5          6032                      OPDEF KCC 6032
   6          1400                      OPDEF  TADI 1400
   7   0200   0000        FFLOT,        BLOCK 3
   8   0201   0000
   9   0202   0000
  10   0203   0000        FF,           BLOCK 3
  11   0204   0000
  12   0205   0000
  13   0206   0000        TF,           BLOCK 3
  14   0207   0000
  15   0210   0000
  16   0211   2045        FTIO,         2045;0;0          /=FLOAT 10
  17   0212   0000
  18   0213   0000
  19   0214   0000        \BEG,         BLOCK 2
  20   0215   0000
  21   0216   0000        NUM,          0
  22   0217   0000        DIG,          0
  23   0220   0000        MINUS,        0
  24   0221   0000        ILNR,         0
  25   0222   0000        NR,           0
  26   0223   0000        PF,           0
  27   0224   0000        ENDA,         0
  28   0225   0000        IA,           0
  29   0226   0000        DEVICE,       0
  30   0227   0000        IARG,         0
  31   0230   1116        ERRM1,        1116      /IN
```

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32   0231  2024        ERRM2,  2024
33   0232  0000        INPUT,  BLOCK 2
34   0233  0000
35   0234  4067                TAD I INPUT
36   0235  0232 01
37   0236  1407
38   0237  3244                DCA .+1
39   0240  2233                INC INPUT#
40   0241  1633                TADI INPUT#
41   0242  3227                DCA IARG
42   0243  2233                INC INPUT#
43   0244  7402        X1,     HLT
44   0245  1627                TADI IARG
45   0246  3226                DCA DEVICE
46                             DUMMY \BEG
47   0247  4067                TAD I INPUT
48   0250  0232 01
49   0251  1407
50   0252  3214                DCA \BEG
51   0253  2233                INC INPUT#
52   0254  4067                TAD I INPUT
53   0255  0232 01
54   0256  1407
55   0257  3215                DCA \BEG#
56   0260  2233                INC INPUT#
57   0261  4067                TAD I INPUT
58   0262  0232 01
59   0263  1407
60   0264  3271                DCA X2
61   0265  2233                INC INPUT#
62   0266  1633                TADI INPUT#
63   0267  3227                DCA IARG
64   0270  2233                INC INPUT#
65   0271  7402        X2,     HLT
66   0272  1627                TADI IARG
67   0273  3216                DCA NUM
68   0274  1215                TAD \BEG#
69   0275  6201 05             DCA BBEG
70   0276  3776
71   0277  7200                CLA
72   0300  3221                DCA ILNR
73   0301  3222                DCA NR
74   0302  1226                TAD DEVICE
75   0303  7450                SNA
76   0304  5775                JMP UT3
77   0305  1374                TAD (-1
78   0306  7450                SNA
79   0307  5330                JMP TTY
80   0310  1374        T2,     TAD (-1
81   0311  7640                SZA CLA
82   0312  5321                JMP INIT        /NOT PTR
83   0313  1310                TAD T2
84   0314  3225                DCA IA
85   0315  2225        HR1,    ISZ IA          /TIME LOOP ONLY GIVE RFC
86   0316  5315                JMP HR1         /IF HSR HAS BEEN TOUCHED
87   0317  6011                RSF             /SINCE LAST CALL TO INPUT
88   0320  6014                RFC
89   0321  1226        INIT,   TAD DEVICE
90   0322  1373                TAD (3
91   0323  7012                RTR; RTR; RAR   /MAKE UPP DEV NR FOR GENIO
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 92   0324  7012
 93   0325  7010
 94   0326  3226                    DCA DEVICE
 95   0327  5333                    JMP INIT2
 96   0330  3226          TTY,      DCA DEVICE
 97   0331  6046                    TLS
 98   0332  6032                    KCC
 99   0333  4772          INIT2,    JMS SENDA
100   0334  7200          NYNR,     CLA
101   0335  3217                    DCA DIG
102   0336  3220                    DCA MINUS
103   0337  4033          CALL 0,   CLEAR
104   0340  0002 06
105   0341  4033          CALL 1,   STO
106   0342  0103 06
107   0343  6201 05                 ARG FFLOT
108   0344  0200 01
109   0345  7200                    CLA
110   0346  7001                    IAC
111   0347  4033          CALL 0,   FLOT
112   0350  0004 06
113   0351  4033          CALL 1,   STO
114   0352  0103 06
115   0353  6201 05                 ARG TF
116   0354  0206 01
117   0355  3223                    DCA FF
118   0356  4771          READ,     JMS READC
119   0357  3225                    DCA IA
120   0360  1225                    TAD IA
121   0361  7041                    CIA
122   0362  3770                    DCA J
123   0363  1767                    TAD CLBEG
124   0364  3766                    DCA SEARCH
125   0365  5377
126   0366  0443 01
127   0367  0462 01
128   0370  0442 01
129   0371  0420 01
130   0372  1100 01
131   0373  0003
132   0374  7777
133   0375  1113 01
134   0376  1010 01
135   0377  7000
136   0400  4045          S1,       TAD I SEARCH
137   0401  7410
138   0402  1643
139   0403  7510                    SPA
140   0404  5776                    JMP NUMCON
141   0405  1242                    TAD J
142   0406  2243                    INC SEARCH
143   0407  7640                    SZA CLA
144   0410  5200                    JMP S1
145   0411  1243                    TAD SEARCH
146   0412  1375                    TAD C.4          /NOTE !!THIS IS LBEG-LEND
147   0413  3242                    DCA J
148   0414  6201 05                 TAD I J
149   0415  1642
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150   0416  3242              DCA J
151   0417  5642              JMP I J
152   0420  0000        READC,  0
153   0421  7200        READC2, CLA
154   0422  6201 05            TAD DEVICE
155   0423  1774
156   0424  7440              SZA
157   0425  5232              JMP GENCL
158   0426  6031        (1,     KSF
159   0427  5226              JMP K1
160   0430  6036              KRB
161   0431  5234              JMP SELECT
162   0432  4033        GENCL,  CALL 0,GENIO
163   0433  0005 06
164   0434  0373        SELECT, AND (177
165   0435  7450              SNA     /IGNORE LEADER TRAILER
166   0436  5221              JMP READC2
167   0437  1372              TAD (200
168   0440  6201 05          JMP I READC
169   0441  5620
170   0442  0000        .,      0
171                     YPE,
172                     EARCH,
173   0443  0000        UTPUT,  0
174   0444  3242              DCA J
175   0445  6201 05          TAD DEVICE
176   0446  1774
177   0447  7640              SZA CLA
178   0450  5643              JMP I OUTPUT    /NO ECHO EXEPT TTY
179   0451  1242              TAD J
180   0452  6041        T1,     TSF
181   0453  5252              JMP T1
182   0454  6046              TLS
183   0455  7200              CLA
184   0456  6201 05          JMP I OUTPUT
185   0457  5643
186                     TEXIT,
187   0460  4033        CALL    0,EXIT
188   0461  0006 06
189   0462  0463 01     LBEG,   LBEG
190                     /THIS IS THE BRANCHING TABLE
191                     /THESE 2 PARTS OF TABLE MUST BE CEPT TOGETHER.
192                     /CHARA TERS USED IN THE RUTINE ARE DEFINED HERE
193                     /ONLY UMERALS ARE NOT INCLUDED
194                     CPAGE 31        /=2*<LBEG-LEND-1)+1
195   0463  0215        LBEG,   215     /CR   <TERMINATE NR, RETURN ?>
196   0464  0254                "(      /(  <TERMINATE CURRENT NR>
197   0465  0203                203     /CNTRL/C  <GO TO MONITOR>
198   0466  0256                ".      /.   <DECIMAL POINT>
199   0467  0377                377     /RUB  <DELETE LAST NUMBER>
200   0470  0225                225     /CNTRL/U  <DELETE LAST ROW >
201   0471  0336                "^      /^  <DELETE ALL SINCE ENTRY >
202   0472  0255                "-      /- <MINUS SIGN>
203   0473  0257                "/      /SLASH  <RETRN ALL REST=0>
204   0474  0240                240     /SPACE <TERMINATES NR, IGNORED BEFORE
205   0475  0212                212     /LINEFEED IGNORED
206   0476  0213                ~~213~~ 214 /CONTROL L IGNORED 25/7/72
207   0477  7777        LEND,   7777
208   0500  0732 01             RETUR
209   0501  1002 01             TERM
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```
210   0502  0460 01          TEXIT
211   0503  1061 01          DECP
212   0504  1052 01          RUB
213   0505  1044 01          DEL
214   0506  1071 01          ERASE
215   0507  0550 01          MIN
216   0510  1115 01          UT
217   0511  0750 01          SPACE
218   0512  0356 01          READ
219   0513  0356 01          READ
220   0514  0000       LF,   0        /THIS RUTINE TYPES CR/LF ON TTY
221   0515  7200              CLA      /OR SKIPS TO LF ON OTHER DEVICES
222   0516  6201 05          TAD DEVICE
223   0517  1774
224   0520  7440              SZA
225   0521  5327              JMP NTTY
226   0522  1371              TAD (215
227   0523  4243              JMS TYPE
228   0524  1370              TAD (212
229   0525  4243              JMS TYPE
230   0526  5714              JMP I LF
231   0527  4220       NTTY,  JMS READC
232   0530  1367              TAD (-212
233   0531  7440              SZA
234   0532  5327              JMP NTTY
235   0533  5714              JMP I LF
236   0534  7300       ERRT,  CLA CLL /ERROR RUTINE
237   0535  6201 05          TAD DEVICE
238   0536  1774
239   0537  7650              SNA CLA          /NO ERRORS FROM TTY
240   0540  5766              JMP READ
241   0541  1765              TAD ENDA
242   0542  7640              SZA CLA
243   0543  5766              JMP READ         /IGNORE ERRORS AFTER LAST I
244   0544  4033       CALL 1 ERROR
245   0545  0107 06
246   0546  6201 05          ARG ERRM1        /ERROR FATAL SO NO FURTHER
247   0547  0230 01
248   0550  6201 05   MIN,   TAD DIG
249   0551  1764
250   0552  1763              TAD MINUS
251   0553  7640              SZA CLA
252   0554  5334              JMP ERRT         /TWO - IN NUMBER
253   0555  4361              JMS ECHO
254   0556  2763              INC MINUS
255   0557  2764              INC DIG
256   0560  5766              JMP READ
257   0561  0000       ECHO,  0
258   0562  5377
259   0563  0220 01
260   0564  0217 01
261   0565  0224 01
262   0566  0356 01
263   0567  7566
264   0570  0212
265   0571  0215
266   0572  0200
267   0573  0177
268   0574  0226 01
269   0575  0014
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270   0576  0616 01
271   0577  7000
272   0600  7200              CLA
273   0601  6201 05          TAD ENDA
274   0602  1776
275   0603  7640              SZA CLA
276   0604  7410              JMP I ECHO
277   0605  5211
278   0606  4062
279   0607  0561 01
280   0610  5407
281   0611  1775              TAD IA
282   0612  4774              JMS TYPE
283   0613  4062              JMP I ECHO
284   0614  0561 01
285   0615  5407
286   0616  7200        NUMCON, CLA
287   0617  6201 05          TAD ENDA
288   0620  1776
289   0621  7440              SZA
290   0622  5773              JMP READ
291   0623  1775              TAD IA
292   0624  1372              TAD (-257
293   0625  7710              SPA CLA
294   0626  5771              JMP ERRT
295   0627  1775              TAD IA
296   0630  1370              TAD (-271
297   0631  7740              SMA SZA CLA
298   0632  5771              JMP ERRT
299   0633  4767        NUMADD, JMS ECHO
300   0634  2766              INC DIG
301   0635  4033        CALL 0, CLEAR
302   0636  0002 06
303   0637  1775              TAD IA
304   0640  0365              AND (17
305   0641  4033        CALL 0, FLOT
306   0642  0004 06
307   0643  4033        CALL 1, STO
308   0644  0103 06
309   0645  6201 05              ARG FF
310   0646  0203 01
311   0647  7200              CLA
312   0650  1764              TAD PF
313   0651  7440              SZA
314   0652  5274              JMP DECKOM
315   0653  4033        CALL 1, FAD
316   0654  0110 06
317   0655  6201 05              ARG FFLOT
318   0656  0200 01
319   0657  4033        CALL 1, FMP
320   0660  0111 06
321   0661  6201 05              ARG FTIO
322   0662  0211 01
323   0663  4033        CALL 1, FAD
324   0664  0110 06
325   0665  6201 05              ARG FF
326   0666  0203 01
327   0667  4033        CALL 1, STO
328   0670  0103 06
329   0671  6201 05              ARG FFLOT
```

```
330   0672  0200 01
331   0673  5773              JMP READ
332   0674  7200        DECKOM, CLA
333   0675  4033        CALL 1, FAD
334   0676  0110 06
335   0677  6201 05              ARG TF
336   0700  0206 01
337   0701  4033        CALL 1, FDV
338   0702  0112 06
339   0703  6201 05              ARG FTIO
340   0704  0211 01
341   0705  4033        CALL 1, STO
342   0706  0103 06
343   0707  6201 05              ARG TF
344   0710  0206 01
345   0711  4033        CALL 1, FAD
346   0712  0110 06
347   0713  6201 05              ARG FF
348   0714  0203 01
349   0715  4033        CALL 1, FMP
350   0716  0111 06
351   0717  6201 05              ARG TF
352   0720  0206 01
353   0721  4033        CALL 1, FAD
354   0722  0110 06
355   0723  6201 05              ARG FFLOT
356   0724  0200 01
357   0725  4033        CALL 1, STO
358   0726  0103 06
359   0727  6201 05              ARG FFLOT
360   0730  0200 01
361   0731  5773              JMP READ
362   0732  4763        RETUR, JMS LF
363   0733  1776              TAD ENDA
364   0734  7440              SZA
365   0735  5762              JMP OUT
366   0736  4761              JMS STORE
367   0737  1760              TAD NR
368   0740  1757              TAD ILNR
369   0741  3757              DCA ILNR
370   0742  3760              DCA NR
371   0743  4756              JMS SENDA
372   0744  1776              TAD ENDA
373   0745  7440              SZA
374   0746  5762              JMP OUT
375   0747  5755              JMP NYNR
376   0750  7200        SPACE,  CLA
377   0751  6201 05              TAD DIG
378   0752  1766
379   0753  5377
380   0755  0334 01
381   0756  1100 01
382   0757  0221 01
383   0760  0222 01
384   0761  1011 01
385   0762  1135 01
386   0763  0514 01
387   0764  0223 01
388   0765  0017
389   0766  0217 01
```

```
390   0767  0561 01
391   0770  7507
392   0771  0534 01
393   0772  7521
394   0773  0356 01
395   0774  0443 01
396   0775  0225 01
397   0776  0224 01
398   0777  7000
399   1000  7650              SNA CLA
400   1001  5777              JMP READ          /IGNORE NO INPUT
401   1002  4776    TERM,     JMS ECHO
402   1003  1775              TAD ENDA
403   1004  7450              SNA
404   1005  4211              JMS STORE
405   1006  4300              JMS SENDA
406   1007  5774              JMP NYNR
407   1010  0000    BBEG,     0
408   1011  0000    STORE,    0
409   1012  6201 05           TAD ILNR
410   1013  1773
411   1014  1772              TAD NR
412   1015  4033    CALL 1    MPY
413   1016  0113 06
414   1017  6201 05           ARG (3
415   1020  1171 01
416   1021  1210              TAD BBEG
417   1022  3770              DCA \BEG#
418   1023  4033    CALL 1    FAD
419   1024  0110 06
420   1025  6201 05           ARG FFLOT
421   1026  0200 01
422   1027  7200              CLA
423   1030  1767              TAD MINUS
424   1031  7650              SNA CLA
425   1032  5235              JMP ST2
426   1033  4033    CALL 0,   CHS
427   1034  0014 06
428   1035  4033    ST2,      CALL 1, ISTO
429   1036  0115 06
430   1037  6201 05           ARG \BEG
431   1040  0214 01
432   1041  2772              INC NR
433   1042  7200              CLA
434   1043  5611              JMP I STORE
435   1044  1366    DEL,      TAD (337
436   1045  4765              JMS TYPE
437   1046  4764              JMS LF
438   1047  3772              DCA NR
439   1050  4300              JMS SENDA
```

```
 440   1051   5774                    JMP NYNR
 441   1052   6201 05   RUB,          TAD DIG
 442   1053   1763
 443   1054   7650                    SNA CLA
 444   1055   5774                    JMP NYNR
 445   1056   1362                    TAD (334
 446   1057   4765                    JMS TYPE
 447   1060   5774                    JMP NYNR
 448   1061   6201 05   DECP,         TAD PF
 449   1062   1761
 450   1063   7640                    SZA CLA
 451   1064   5760                    JMP ERRT          /TWO . IN A NUMBER
 452   1065   4776                    JMS ECHO
 453   1066   2763                    INC DIG
 454   1067   2761                    INC PF
 455   1070   5777                    JMP READ
 456   1071   6201 05   ERASE,       DCA ILNR
 457   1072   3773
 458   1073   3772                    DCA NR
 459   1074   4300                    JMS SENDA
 460   1075   4776                    JMS ECHO
 461   1076   4764                    JMS LF
 462   1077   5774                    JMP NYNR
 463   1100   0000      SENDA,        0
 464   1101   7200                    CLA
 465   1102   6201 05                 TAD ILNR
 466   1103   1773
 467   1104   1772                    TAD NR
 468   1105   7041                    CIA
 469   1106   1757                    TAD NUM
 470   1107   7750                    SPA SNA CLA
 471   1110   7001                    IAC
 472   1111   3775                    DCA ENDA
 473   1112   5700                    JMP I SENDA
 474   1113   6201 05   UT3,          INC DEVICE        /NO ECHO ON ZEROING VECTOR
 475   1114   2756
 476   1115   4776      UT,           JMS ECHO
 477   1116   4300      UT4,          JMS SENDA
 478   1117   1775                    TAD ENDA
 479   1120   7640                    SZA CLA
 480   1121   5330                    JMP UT2
 481   1122   4211                    JMS STORE
 482   1123   4033      CALL 1,       STO
 483   1124   0103 06
 484   1125   6201 05                 ARG FFLOT
 485   1126   0200 01
 486   1127   5316                    JMP UT4
 487   1130   7340      UT2,          CLA CLL CMA       /-1
 488   1131   6201 05                 TAD DEVICE
 489   1132   1756
 490   1133   7440                    SZA      /DEV 1=ONLY ZERO VECTOR
 491   1134   4764                    JMS LF
 492   1135   7200      OUT,          CLA
 493   1136   1355                    TAD (212
 494   1137   4765                    JMS TYPE
 495   1140   4040      RTN,          RETRN INPUT
 496   1141   0001 06
 497   1155   0212
 498   1156   0226 01
 499   1157   0216 01
```

```
500   1160  0534 01
501   1161  0223 01
502   1162  0334
503   1163  0217 01
504   1164  0514 01
505   1165  0443 01
506   1166  0337
507   1167  0220 01
508   1170  0215 01
509   1171  0003
510   1172  0222 01
511   1173  0221 01
512   1174  0334 01
513   1175  0224 01
514   1176  0561 01
515   1177  0356 01
516

                    END
```

```
BBEG        69   407#  416
CHS        426
CLEAR      103   301
DECKOM     314   332#
DECP       211   448#
DEL        213   435#
DEVICE      29#   45    74    89    94    96   154   175   222   237
           474   488
DIG         22#  101   248   255   300   377   441   453
ECHO       253   257#  276   283   299   401   452   460   476
ENDA        27#  241   273   287   363   372   402   472   478
ERASE      214   456#
ERRM1       31#  246
ERRM2       32#
ERROR      244
ERRT       236#  252   294   298   451
EXIT       187
FAD        315   323   333   345   353   418
FDV        337
FF          10#  309   325   347
FFLOT        7#  107   317   329   355   359   420   484
FLOT       111   305
FMP        319   349
FTIO        16#  321   339
GENCL      157   162#
GENIO      162
HR1         85#   86
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