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UNIVAC®

494

REAL-TIME SYSTEM

**REFERENCE
CARD-II**

(SOFTWARE)

SPECIAL SYMBOLS

SYMBOL	80-COLUMN PUNCH	USE
*	12-7-8	In column 1: indicates primary control statement In any other column: indicates continuation of control statement to next card
Δ	11-7-8	Separates notes from statement on primary control card Indicates termination of parameters on PRAM control card
, (comma)	0-3-8	Separates specification fields: two commas (,,) in succession required to indicate blank specification (except last)
␣ (blank)	(none)	In column 1, followed by mnemonic operator: indicates secondary control statement and delimits its operator In primary control statement: delimits options field; two blanks (␣␣) in succession required for blank option field followed by specifications Indicates termination of statement
/	0-1	Separates subfields within a specification

PRIMARY CONTROL

ORGANIZATIONAL CONTROL

#CALL	options: $\$$ name/version/library/file/parameter/parameter,... options: X = abort job if no find or activation of unit record routine no X = use normal output unit record routine if no find or activation and ignore #CALL file: P = primary output stream S = secondary output stream	
#CORE	options: $\$$ library,name/version,v,v,v,...v options: A = correction to memory location; v = correction address relative to system base address/corrections (No A) X, Z, or P = correction to element; v = correction address/segment no., corrections P = purge inactive secondary executive routines	①
#DUMP	options: $\$$ file code,v ₁ ,v ₂ ,line spacing options: O = 10 ₅ character words A = Fieldata coded D = convert fixed point binary to signed decimal F = convert floating point to signed decimal P = peripheral or random access storage E = dump only if terminated by error or abort C = start new page for printing L = listing of task addendum, activity addendum, and storage modules of dump activity v ₁ : no. of words of core or random storage, or no. of tape blocks v ₂ : relative starting address, logical increment, or no. of tape beginning blocks to bypass	①
#END		
#FIN		
#JOB	options: $\$$ identity/individual/account/priority,v ₃ ,v ₄ options: A-E = switches R = RT/COMM tasks priority: A-E v ₃ : running time in minutes or C * v ₄ : primary output pages/secondary output card images, or C * *C = continuous	
#LOG	options: $\$$ code number,literal options: (use only one) A = I/O diagnostic B = CPU and core diagnostic C = program contingency diagnostics D = normal log message E = user message F = console message G = system and statistical data H, I, J reserved no A-J option = implied D option (use only one) K = binary literal L = mixed binary and alphanumeric M = alphanumeric no K, L, M = implied M option N = include user charge and job no.'s with literal code number: octal 000-777	①
#MSG	options: $\$$ literal options: R = assign response no. and wait for operator response no R = operator response not required	①
#PRAM	options: $\$$ parameter,parameter,... options: A = alphanumeric parameters no A = numeric C = literal X, Y, Z or none of the three	
#READY	options: $\$$ station options: vary with remote unit (refer to applicable document on peripheral subsystem) station: identifies remote terminal	
#SOURCE	options: $\$$ v ₀ ,v ₁ ,v ₂ ,v ₃ ,v ₄ options: C = file 1 (v ₀) corrections follow this card in primary input no C = no corrections to source element S = updated source not put in primary input (requires U and/or O option) no S = source put in primary input (used for job stream element) J = create source element from images following in primary input D = delete source element from job library after processing U = enter source element into job library O = submit updated source element to secondary output R = resequence card number field of each image (decimal sequence no.'s) P = mechanism corrects element by image position, starting at first position after space following sequence number (C option must also be used) no P = first position after space following sequence number is position 8 of new source image X = abort job on error Y = continue processing if error in correction image no X and Y = terminate source image corrector on execution error v ₀ : name/version of job library source to be processed (absence of v ₀ requires C or J option) v ₁ : library specification v ₂ : name/version of updated element (required with U option) v ₃ : mask, (requires R option) initial card no. (decimal with no D)/increment (decimal, no D) R option and no v ₃ = initial card no. 000100 (decimal) v ₄ : (optional) ID; 8-character Fieldata (some symbols excluded) identifier	
#START	options: $\$$ name/version/library,time,date options: X = abort job if no find time: day clock time hh/mm date: year and month yyyy	①

PRIMARY CONTROL

#GO	options: $\$$ name/version/library options: A-E = logical test switches R = clear switches H, M, or L = service and selection priority (high, medium, or low) X or Y P = 90-column FORTRAN input cards	E
#CORE	options: $\$$ minimum/maximum minimum: minimum extension (no. of words) of core required for task element maximum: maximum extension desired	
#ASG	options: $\$$ peripheral code,file code,minimum/maximum options: J = hold for job duration or until #FREE no J = hold for task termination V = assignment optional for task execution peripheral code: DRUM = FH-432 drum, FH-1782 drum or FH-880 drum F432 = FH-432 drum only F1782 = FH-1782 drum only F880 = FH-880 drum only FAST = normal track on FASTRAND drum FBAN = Fastband track on FASTRAND drum RAN = FH-432 drum, FH-1782 drum, FH-880 drum, or Fastband or normal track on FASTRAND drum SEQ = FH-432 drum, FH-1782 drum, FH-880 drum, Fastband or normal track on FASTRAND drum, or magnetic tape unit minimum/maximum: no. of assigned words	①
#ASG	options: $\$$ peripheral code,file code,file name options: H = 800 fpi M = 556 fpi L = 200 fpi no H, M, L = 556 fpi F = fixed or compatible mode (UNISERVO II A) E = even parity recording no E = add parity U = inhibit automatic block numbering N = inhibit noise record constant R = rewind without interblock after mounting V = assignment optional for execution T = translate BCD to Fieldata (FD) on read, FD to BCD on write (requires E option) W = wait for operator response peripheral code: TAPE = any available tape unit UN3C = UNISERVO III C only UN6C = UNISERVO VI C only (7-track mode) UN8C = UNISERVO VIII C only (7-track mode) UN2A = UNISERVO II A only UN3A = UNISERVO III A only COMP = UNISERVO VI C or VIII C with 9-track option	①
#ASG	options: $\$$ peripheral code,file code options: B = column binary T = XS-3 or 90-column code to FD on read, FD to XS-3 or 90-column code on punch no B and T = translate card image V = assignment optional peripheral code: CIN8 = 80-column card reader except primary input COUT8 = 80-column punch except secondary output CIN9 = 90-column card reader except primary input COUT9 = 90-column punch except secondary output	①
#ASG	options: $\$$ peripheral code,file code,um/bm/pl options: V = optional assignment J = hold until #FREE or end of job no J = release at termination of task peripheral code: PRINT = high speed printer or UNIVAC 1004 subsystem except primary output um: no. of lines for upper margin bm: bottom margin pl: text lines or (for user form control) 0 (zero) no um/bm/pl: use system parameters	①
#ASG	options: $\$$ peripheral code,file code options: J = hold until #FREE or end of job no J = hold to task termination V = optional assignment peripheral code: PTIN = paper tape reader PTOUT = paper tape punch	
#LASG	options: $\$$ v ₀ ,file code,v ₂ ,priority,v ₄ ,v ₅ options: A = register additional handler queue process activity addendum H = load, link remote line handler O = optional CTM D = wait for CTM M = assign only CTM updated for maintenance testing X = level 1, disregard file code and own code v ₀ : peripheral code, naming CTM type or block assigned v ₂ : remote line handler name/version priority: octal 0-17 v ₄ : (optional) name/version of output own code (user task to staging) v ₅ : (optional) name/version of output own code (random access to remote handler)	①

PRIMARY CONTROL

I/O CONTROL	#FREE options file code,file identifier (1)
	options: L = direct operator to label released file no L = file need not be saved
	#LFREE options file code (1)
	#MFD options file code,v ₁ ,v ₂ ,v ₃ ,v ₄ (1)
	options: A = assign file (v ₁) to file code C = catalogue file in Master File Directory (MFD) as permanent I = catalogue file in MFD as transient D = release file assignment before task termination E = current job has sole control of file J = hold file code assignment for job duration L = for internal use only Q = do not submit MFD statement to primary output stream (to protect read/write keys) R = release file from MFD and release associated random access storage V = optional assignment or catalogue request W = write enable on tape file v ₁ : user no./file no. (1-4 digits each) v ₂ : read key/write key (up to 5 alphanumeric characters each) v ₃ : retention period in no. of days v ₄ : reel identifier
	#SWITCH options hold file code,new file code (1)
	options: R = rewind, without interlock, tape units associated with either or both file codes file codes: two alphabetic characters each or one alphabetic character each
	#ASMB options name/version (E)
	options: X, Y, Z, or no X, Y, and Z N = list diagnostics only S = places DEF's with RB element C = check sequence no.'s D = delete sequence no.'s from listing I = single-spaced listing L = print relocation data R = print cross referencing W = suppress error printout
	#COB options name/version (E)
options: X, Y, Z, or no X, Y, and Z N = inhibit all listing, except diagnostics L = complete listing, including object code A = assign sequence no.'s to source listing B = inhibit sequence check C = indicate check sum feature for mag. tapes E = list diagnostics R = list data and procedure names with locations S = list source U = inhibit program ID from source images V = inhibit generation of starting address	
#DEL options v ₀ ,v ₁ ,v ₂ ,... (1)	
options: X, Y, Z, or no X, Y, and Z G = group libraries (defined by v ₀ ,v ₁ ,v ₂ ,...) will be freed v ₀ ,v ₁ ,v ₂ ,...: group library no. or name/version (if G option, only group library no.'s)	
#ELM options file code,name/version (S)(E)	
file code: identifies tape unit on which block is to be written name/version: defines element to be formed into a bootstrap block	
#FOR options name/version (E)	
options: X, Y, Z, or no X, Y, and Z I = single-spaced listing N = list diagnostics only L = complete listing, including object code	
#IN options file code,v,v ₁ ,...v (E)	
options: X, Y, Z, or no X, Y, and Z C = elements to job library from primary input after this statement (omit file code) R = initial rewind of input element tape L = only RB elements from external device to library N = source element from input device to library M = only load elements to library v: name/version for element identification; no v's = all input elements to job library	
#LINK options v ₀ ,v ₁ ,v ₂ ,v ₃ (E)	
options: X = abort job on error in #LINK processing A = input device already assigned, prior to #LINK R = initial rewind of input device creating group library v ₀ : group library no. v ₁ : library file code A-YZ v ₂ : peripheral name v ₃ : input file code A-YZ	
#LOAD options v ₀ ,v ₁ ,v ₂ (S)(E)	
options: X, Y, Z, or no X, Y, and Z N = list diagnostics only L = complete listing no N and L = summary listing only S = list SDEF's K = v ₀ is MAP element U = save secondary element v ₂ in job library M = (UNIVAC 490 mode) append modification to #LOAD element v ₀ : name/version (optional) of RB or MAP element to be collected v ₁ : name/version to identify absolute element produced by Loader v ₂ : (optional, with U option) name/version to identify MAP element produced	

PRIMARY CONTROL

SYSTEM PROCESSOR	#OUT options v ₀ ,v ₁ ,v ₂ ,v ₂ ... (E)
	options: X, Y, Z, or no X, Y, and Z C = specified elements submitted to secondary job output F = write EOF tape mark after last element L = only RB elements in output M = only load elements in output N = only source elements in output R = initial rewind of output tape S = system or group library format will be generated by inclusion of elements from given library v ₀ : (only if no C option) file code of device to receive elements v ₁ : output library/(if S option) group library file no. assigned to output elements v ₂ ,v ₂ ...: name/version of elements to be transferred from library; no v ₂ ,... = all elements from specified library will be transferred to specified device (v ₀)
	#PRT options library,v,v ₁ ,... (E)
	options: X, Y, Z, or no X, Y, and Z T = print only TOC v,v ₁ ,...: name/version of element(s) to be printed; no v's,... = all elements of specified library will be printed
	#REPOR options (E)
	options: P = abort task at completion of initialization if parameter error F = abort task if file error no P and F = continue to end of input or fatal error
	#REX options core requirements (S)(E)
	options: X or Y no X and Y = abort task on fatal error core requirements: minimum required/maximum desired in no. of words. Maximum limited to 32K minus 400 ₀
	#SPURT options name/version (E)
	options: X, Y, Z, or no X, Y, and Z D = delete card columns 1-6 from side-by-side listing E = assign all extra core to table expansion L = list program labels and control counter values with source and object code N = list diagnostics only S = list SDEF's with RB element R = list labels and references, alphabetically sorted P = list XREF's and references A = sort labels alphabetically (with S or L option)
#TEST options ,name/version,library (S)(E)	
options: A-E = logical test switches R = initial clear of switches	
#UTL options name/version (S)(E)	
options: X, Y, Z, or no X, Y, and Z	
NOTES: (1) = can be used internally (E) = requires # END card (S) = secondary language associated	

SYSTEM PROCESSOR

SECONDARY CONTROL

USED WITH LOAD	#ENTRY options name
	name: EDEF of element to be collected
	#EQUAL options name/value,name/value,...
	name: name of XREF value: octal or decimal value assigned to XREF
	#EXCLUDE options name/version,name/version,...
	name/version: RB element from library to be excluded from collection
	#INCLUDE options name/version,name/version,...
	name/version: RB element from library to be included in collection
	#MAP options name/version,name/version,...
	name/version: MAP element to be collected
TEST	#SEGMENT options segment name 1, segment name 2 or segment name 1,(segment name 2,segment name 3,...)
	segment name 1: name of segment segment name 2: no parentheses = segment name 1 and segment name 2 originate at same location with parentheses = segment name 1 starts immediately after highest location of segment names in parentheses no segment name 2 = segment name 1 has origin immediately after the preceding segment
	#AT options p/switch 1,set count/iteration count,switch 2
	p: location of instruction to be executed switch 1: (optional) execution - enabling switch for nested procedures set count: counter value required to set switch 2 iteration count: maximum no. of times switch 2 can be turned on; if not specified, no limit switch 2: switch A-Z, turned on when counter reaches p
	#DUMP options SP/switch,v ₀ ,v ₁ ,v ₂ ,v ₃
	options: O = octal representation A = Fieldata D = decimal F = decimal representation of double precision floating point C = start printout on new page L = list task control thread P = specifications refer to peripheral device P/switch : program location/conditioning switch v ₀ : file code; if not specified = core is requested v ₁ : no. of blocks (tape) or no. of words to be skipped v ₂ : start address (no tag or label) - logical address (random access), or no. of blocks (tape) or beginning address (core) v ₃ : no. of lines between print images; if not specified = 1

SECONDARY CONTROL

TEST

END
EXIT p/switch p/switch : location at which exit is made/(optional) conditioning switch
IF $\text{p/switch 1, X1/rop/y1*lop*X2/rop/y2*lop*..., switch 2}$ p : program location where IF is to be performed switch 1 : (optional) execution enabling switch for nested procedure x/rop/y : relational expression, where x and y are locations of arguments and rop is a relational operator – GT, LT, EQ, GE, LE, or NE lop : logical operator – OR or AND switch 2 : A–Z, turned on if complete logical expression is true, turned off if complete logical expression is false
SET $\text{p/switch, address, value, value, ...}$ p/switch : program location/(optional) conditioning switch address : core storage address relative to RIR: symbol + or – a constant
TRACE $\text{options, switch, start of area, end of area}$ options : J = display only jump instructions within specified area switch : (optional) trace – enabling logical switch
TRAP $\text{options, location/switch}$ options : O, A, D, F (see DUMP) switch : (optional) trap-enabling logical switch

UTL

BLKRD $\text{options, v}_0, \text{v}_1, \text{v}_2, \text{v}_3, \text{v}_5$ options : see note v_1 : length v_2 : (optional) logical increment v_3 : (optional) relative address v_5 : no. of records
DO v_0, v_1 v_0 : no. of statements to repeat v_1 : no. of loop executions
EOF $\text{options, file code, v}_1$ options : see note v_1 : statement relative to EOF statement for transfer of control
ERR $\text{options, file code, v}_1$ options : see note v_1 : statement relative to ERR statement for transfer of control
GOTO $\text{octal or decimal no}$
MOVE $\text{options, file code 1, file code 2, length}$ options : see note
READ $\text{options, v}_0, \text{v}_1, \text{v}_2, \text{v}_3$ options : see note v_0 : file code v_1 : length v_2 : (optional) logical increment v_3 : (optional) relative address
RWND file code
SEARCH $\text{options, v}_0, \text{v}_1, \text{v}_2, \text{v}_3, \text{v}_4$ options : see note v_0 : file code v_1 : length v_2 : (optional) logical increment v_3 : (optional) relative address v_4 : sentinel
TREAD $\text{options, v}_0, \text{v}_1, \text{v}_2, \text{v}_3$ options : A = store as Fieldata characters B = translate to Baudot code D = convert from decimal to binary F = convert from decimal floating point to internal UNIVAC 494 floating point I = translate as BCD no options = convert from octal to binary
WRITE $\text{options, v}_0, \text{v}_1, \text{v}_2, \text{v}_3$ options : see note v_0 : file code v_1 : (optional) length v_2 : (optional) logical increment v_3 : (optional) relative address
WRITEOF $\text{options, file code}$ options : see note
NOTE : General options for #UTL secondary control D = follow data file conventions R = do not update logical increment for this file F = perform jump if false (test operator only) A = translate element as action operator (used for special user own code)

GENERAL SERVICE REQUESTS

ABORTS
CABORTS
CEXITS
CHECKPOINTS
CLEARDS
CMOVES data area address, size of data area
CSWCTS service call of another subroutine
CVTS address, size address: relative to LL size: no. of words in field
DELAY binary no. representing milliseconds
DATIMS (A) = yydd in Fieldata (Q) = binary no. of clock updates since midnight
ERRADDS address of routine (A) = status word
ERRORS
FADD file code, no. of words
FBAD file code, no. of words, logical increment
FETCH base address, name/version, library
FETCHL base address, name/version, library
FOFADD start address of recovery routine
FORK start address (relative to LL of requesting activity)
FREL file code, no. of words, logical increment
FRELAS file code, no. of words, logical increment
FUFADD start address of recovery routine
JOINS
LOAD label of segment to be loaded
LOADA tag (load and activate)
MADD no. of words
MREL no. of words, (optional) routine address
QREF binary identity of queued activity (v_3 in REGQS)
RECEIVE v_0, v_1, v_2 v_0 : base address relative to LL v_1 : max. no. of locations v_2 : (optional) identity no.
REGS $v_0, v_1, v_2, v_3, v_4, v_5$ v_0 : relative address of activity v_1 : activity mode indicator v_2 : (optional) relative response priority 0 thru 17 ₈ v_3 : (optional) starting address of data, relative to LL v_4 : size of data area (required if v_3 specified) v_5 : (required if v_3 specified) data area mode indicator.
REGQS v_0, v_1, v_2, v_3 v_0 : relative address of requesting activity v_1 : activity mode indicator v_2 : (optional) relative response priority 0 thru 17 ₈ v_3 : binary identity of activity
RESTARTS
RETURNS
RETURNIS
SENDS v_0, v_1, v_2 v_0 : data area base, relative to LL v_1 : no. of locations to transfer v_2 : 15-bit binary identity no.
SET15S
SET17S
SETDS

GENERAL SERVICE REQUESTS

TCORES (A) = LL of requesting activity and size of task code (Q) = RIR (B7) = total size of contiguous task core
TESTFLS (A) = 1 indicates floating point overflow (A) = -1, FP underflow (A) = 0, no FP overflow or underflow
TESTOFS (A) = 1, FP overflow (A) = 0, no FP overflow
TESTUFS (A) = 1, FP underflow (A) = 0, no FP underflow
TCFS file code to be tested
TIMEDS (A) = Fieldata hh:mm (Q) = Fieldata :ss $\overline{00}$
TIMELS (A) = binary no. of Real Time Clock updates (Q) = max. no. of updates allowed
TIMEQS (A) = Fieldata yyddd (Q) = binary time of day in quanta
TIMEYS (A) = Fieldata yyddd (Q) = binary no. of 100-millisecond units since start of year
USTS v_0, v_1, v_2, v_3 v_0 : base address, relative to LL v_1 : deposit area base address, relative to LL v_2 : deposit area size v_3 : 0 or length of pickup area
XOFFS switches A thru E in #JOB or #GO statement
XONS switches A thru E in #JOB or #GO statement
XTESTS switches A thru E in #JOB or #GO statement (A) ₂₉ thru (A) ₂₅ = status of switches A thru E

I/O SERVICE REQUESTS

BLOCKRS v_0, v_1, v_2, v_3 v_0 : file code v_1 : no. of words v_2 : buffer base v_3 : logical increment
BLOCKSS v_0, v_1, v_2, v_3, v_4 v_0 : file code v_1 : no. of words v_2 : buffer base v_3 : logical increment v_4 : search identifier
CARDS buffer base
CHANGES v_0, v_1, v_2 v_0 : file code v_1 : label for demounted file v_2 : label of new file
DEMOUNTS file code, file identifier
ERASES file code
GWRITES label of LISTA\$
LISTS file code, no. of words, logical increment
LISTAS $v_0, v_1, v_2, v_3, v_4, \dots$ v_0 : file code v_1 : no. of buffers v_2 : logical increment v_3, v_4, \dots : no. of words/base, no. of words/base, ...
LISTBS $v_0, v_1, v_2, v_3, \dots$ v_0 : file code v_1 : no. of buffers v_2, v_3, \dots : no. of words/base/logical increment, no. of words/base/logical increment, ...
MOUNTS file code, file identifier

I/O SERVICE REQUESTS

MREADS \$label of LISTBS
PRINTS \$v ₀ ,v ₁ ,v ₂ v ₀ : buffer base address v ₁ : no. of words v ₂ : line spacing before print
PUNCHS \$base address,no. of words
READS \$v ₀ ,v ₁ ,v ₂ ,v ₃ v ₀ : file code v ₁ : no. of words v ₂ : buffer base v ₃ : logical increment (optional for unit record or tape)
READBS \$file code,no. of words,buffer base
READLS \$v ₀ ,v ₁ ,v ₂ ,v ₃ v ₀ : file code v ₁ : no. of words v ₂ : buffer base v ₃ : logical increment (optional for unit record or tape)
REWINDS \$file code
SEARCHS \$v ₀ ,v ₁ ,v ₂ ,v ₃ ,v ₄ v ₀ : file code v ₁ : no. of words v ₂ : buffer base v ₃ : logical increment v ₄ : search identifier
SEARCHLS \$v ₀ ,v ₁ ,v ₂ ,v ₃ ,v ₄ (same format as SEARCHS)
SREADS \$label of LISTAS
UNSOL \$label
WRITES \$v ₀ ,v ₁ ,v ₂ ,v ₃ v ₀ : file code (label of LISTS) v ₁ : no. of words or (for printer) line spacing before print v ₂ : buffer base v ₃ : logical increment (not used for printer)
WRITEOFS \$file code
WRITERS \$v ₀ ,v ₁ ,v ₂ ,v ₃ v ₀ : file code v ₁ : no. of words v ₂ : buffer base v ₃ : logical increment (optional for unit record)

PRIMARY CONTROL STATEMENT FORMAT

column 1

#	mnemonic	⊘	optionoption...option	⊘	v ₀ ,v ₁ ,v ₂ ,...,v _n
#	operator	⊘	option(s)	⊘	specification(s)

COMMON OPTIONS

(where listed with statement): X = error during loading or execution aborts task and remainder of job
Y = completed task is accepted for execution even if containing nonfatal errors
Z = abort task if fatal error(s) occurs, but continue processing of job
no X, Y, and Z = task will be completed; errors inhibit compilation or assembly

COMMON SPECIFICATIONS

(where listed with statement):

Library specification: SYS = systems library
JOB = job library
xxxxx = group library number; 5-digit octal or 4-digit decimal (+D)

Name/Version: element name, (up to) 10 alphanumeric/element version,(up to) 5 alphanumeric characters

File Code: A through Y and AA...AZ,BA...BZ,...YA...YZ

File Name: (up to) 15 alphanumeric characters to identify tape reel

SECONDARY CONTROL STATEMENT FORMAT

column 1

⊘	mnemonic	⊘	optionoption...option	⊘	v ₀ ,v ₁ ,v ₂ ,...,v _n
⊘	operator	⊘	option(s)	⊘	specification(s)

SERVICE REQUEST FORMAT

column 18

mnemonic	\$	⊘	v ₀ ,v ₁ ,v ₂ ,...,v _n
operator	\$	⊘	specification(s)

REMOTE LINE CONTROL SERVICE REQUESTS

CTMFREES \$line identifier of CTM
GETMS \$v ₀ ,v ₁ ,v ₂ v ₀ : 15-bit numeric identifier of CTM control block v ₁ : no. of words v ₂ : buffer base
GETMWS \$v ₀ ,v ₁ ,v ₂ (same format as GETMS)
LACQS \$v ₀ ,v ₁ ,v ₂ v ₀ : file code v ₁ : (optional) name/version of input own code (handler to staging) v ₂ : (optional) input own code (staging to user)
LDOWN \$numeric line identifier of CTM and unit no.
LOOKMS \$v ₀ ,v ₁ ,v ₂ v ₀ : file code (same as on LACQS) v ₁ : no. of words v ₂ : buffer base
LUPS \$numeric line identifier of CTM and unit no.
PUTMS \$buffer base,no. of words
READMS \$v ₀ ,v ₁ ,v ₂ v ₀ : file code (same as on LACQS) v ₁ : no. of words v ₂ : buffer base
READHWS \$v ₀ ,v ₁ ,v ₂ (same format as READMS)
WRITMS \$buffer base,no. of words

(A) I/O STATUS WORD (GENERAL)

i	status code	24	23	18	17	number of words transferred	0
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i: abnormal status condition indicator

- status code: 01 = inappropriate function
02 = incorrect parameter
03 = unrecoverable subsystem error
04 = end-of-file
05 = end-of-tape
06 = unsuccessful search
07 = illegal character
10 = no assignment
11 = interlock
12 = hidden file segment

