SCARA Robot

KSL3000 User Parameter Manual

INSTRUCTION MANUAL

SM-A20053-A

- Read this Instruction Manual before using the product.
- Read the safety notes carefully.
- Keep this Instruction Manual in a safe and convenient place for future reference.

CKD Corporation

Preface

This manual describes the machine parameters for small-size SCARA robot controller "**KSL3000 series**".
The machine parameters are registered in the controller under the text file named "**USER.PAR**". Like the SCOL program, they can be edited by the program editor.
For use of the program editor, see the Operator's Manual.

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[U00] EXTERNAL MODE FULL CONTROL

Selection of control port

```
[U00] EXTERNAL MODE FULL CONTROL
{0:SIGNAL 1:RS232C 2:ETHERNET}
= 0
```

Set value: = (EXTERNAL MODE execution form)
Data type: Integer type
Data unit: None
Data range: 0 ~ 2
Number of data: 1
Description: Specify EXTERNAL MODE execution form.
0: External signal
1: Serial communication
2: Ethernet communication

[U01] SYSTEM BASE COORDINATE

BASE coordinate

```
[U01] SYSTEM BASE COORDINATE
= 0.0  0.0  0.0  0.0  0.0  0.0
```

Set value: KSL3000 **= (X-axis BASE coordinate) (Y axis ...) (Z axis ...) (C axis ...) (Unused) (Unused)**
Data type: Real number type
Data unit: None
Data range:
Number of data: 6
Description: Specify values in the BASE coordinate that are valid when the power supply is turned on.
Specify the values in the order that follows:
X Y Z C 0.0 0.0 for KSL3000

Specify **0.0 0.0 0.0 0.0 0.0 0.0** when you wish to match the BASE coordinate system and the WORLD coordinate system.

[U02] NOWAIT mode for multi task

NOWAIT specified for multitasks

[U02]NOWAIT MODE FOR MULTI TASK (0:COMMON, 1:INDIVIDUAL) = 0

Set values = 1 Independent control for each task (NOWAIT improved type) (CKDs recommendation)
= 0 Common use by tasks (NOWAIT previous type)
Data type: Integer type
Data unit: None
Data range: 0 or 1
Number of data: 1
Description: Specify a multitasking operation mode. Specify whether system variable "NOWAIT" is controlled independently for each task or commonly used by tasks during multitasking operation. However, when the "NOWAIT" is commonly used by tasks, the SCOL programming becomes complicated. It is recommended to adopt a mode for setting independently for each task.

[U03] DEFAULT MOVESYNC MODE

Default of MOVESYNC

[U03] DEFAULT MOVESYNC MODE (0:ENABLE, 1:DISABLE) = 1

Set values = 0 Motion command synchronous mode (ENABLE MOVESYNC)
= 1 Motion command asynchronous mode (DISABLE MOVESYNC)
Data type: Integer type
Data unit: None
Data range: 0 or 1

Number of data: 1
Description: Specify the synchronous or asynchronous mode for a motion command.
Specify selection of the motion command synchronous mode that the system executes just before the next motion command and waits until positioning is completed during programmed operation or selection of the motion command asynchronous mode that the system pre-read and executes up to four (4) motion commands.
In the motion command asynchronous mode, pass motion cannot be performed even if "PASS" is set to ENABLE.

[U04] TEACHING MODE OVERRIDE

Teaching mode override

[U04] TEACHING MODE OVERRIDE = 20

Set value: Example 20 (which is a value limited to 20% of the maximum speed)
Data type: Integer type
Data unit: %
Data range: 1 ~ 100
Number of data: 1
Description: Specify the maximum speed of motion in teaching mode.
* If 0 is set, operation is performed at the internal parameter speed that was set at shipping.

[U05] OVERRIDE ON SLOW SPEED SIGNAL

Override slow-speed command

[U05] OVERRIDE ON SLOW SPEED SIGNAL (0 - 100)[%] = 25

Set value: Example 25 (which is a value limited to 25% of the maximum speed)
Data type: Integer type

Data unit: %
Data range: 1 ~ 100
Number of data: 1
Description: Specify the speed at the command of slow speed (system input signal). Specify robot operating speed at the input of a slow-speed command signal. When a slow-speed command signal is input during automatic operation, specify at how many percent of the maximum speed the robot operates.

* If 0 is set, operation is performed at the internal parameter speed that was set at shipping.

[U06] SERIAL PORT SETTING

Serial port

Specify the communication port (i.e., COM port).

```
[U06] SERIAL PORT SETTING
{Speed }(38400, 19200, 9600, 4800, 2400, 1200)
{Character}(7, 8)
{Parity }(0:Without, 1:Odd, 2:Even)
{Stop bit }(1, 2)
{COM1}
= 9600   8   0   1
{HOST}
= 9600   8   0   1
```

Set value: **{COM1}**
= (Speed) (Character length) (Parity) (Stop bit length) ← **Setting of COM1 port**
{HOST}
= (Speed) (Character length) (Parity) (Stop bit length) ← **Setting of HOST port**

Data type:
Data unit:
Data range:
Number of data: 2*4

Description: (Speed): Specify data communication speed. Select among six (6) speeds that follow.
38400 :38400 bps
19200 :19200 bps
9600 : 9600 bps
4800 : 4800 bps
2400 : 2400 bps
1200 : 1200 bps

(Character length): Specify the character length to be transferred.
8: 8 bits
7: 7 bits

(Parity): Specify the parity of characters to be transferred.
0: Without parity
1: Odd parity
2: Even parity

(Stop bit length): Specify the stop bit length of characters to be transferred.
1: Stop bit 1
2: Stop bit 2

For details, see the Communication Manual.

[U07] SPECIFY SIGNAL FOR EXTSELECT

Setting of file select signal line.

```
[U07] SPECIFY SIGNAL FOR EXTSELECT
{Signal No }(1 - )
{Bit length }(1 - 8)
= 101    4
```

Set value: Example 101 4 Four (4) extended input signals numbered 101 ~ 104.
Data type: Integer type
Data unit:
Data range: At least eight (8) successive signals from standard inputs 1 ~ 64, extended inputs 101 ~ 164, or field bus inputs 301 ~ 364, 401 ~ 464.
Number of data: 2

Description: Set file selected signal line.
Specify the input signal from outside the controller to select an execution file, using the input signal.
Specify up to eight (8) consecutive input signals from standard inputs 1 ~ 64, extended inputs 101 ~ 164 or field bus inputs 301 ~ 364, 401 ~ 464. To be more specific, specify the leading number of input signals to be used and the number of signals to be used by discriminating them by space.
= Specify in order **(Signal No.), (Bit length)**.
(Signal No.): Specify the leading number of input signals to be used.

Set value	1 ~ 64	(Standard input)
	101 ~ 164	(Extended input)
	301 ~364	(Field bus input)
	401 ~464	(Field bus input)

Select the number from the above inputs.
(Bit length): Specify the number of signals to be used.
Set value KSL3000: 1~8

[U08] RESURVE

Reserve parameter

[U08] RESURVE = 0

Description: Set the reserve parameter as "0" because it is not currently set.

[U09] AUXILIARY SIGNAL

Set the auxiliary signal display (AUX)

```
[U09] AUXILIARY SIGNAL
   {Type }(0:Single, 1:Double)
   {Signal No. }(1 - 24)
   {Signal Name}(Max 10character)
= 0   201   "Hand out 1"
= 0   202   "Hand out 2"
= 0   203   "Hand out 3"
= 0   204   "Hand out 4"
= 0     0   "Not   Use   "
= 0     1   "Dout 1      "
= 0     2   "Dout 2      "
= 0     3   "Dout 3      "
= 0     4   "Dout 4      "
= 0     5   "Dout 5      "
= 0     6   "Dout 6      "
= 0     7   "Dout 7      "
= 0     8   "Dout 8      "
= 0     9   "Dout 9      "
= 0    10   "Dout 10     "
= 0    11   "Dout 11     "
= 0    12   "Dout 12     "
= 0    13   "Dout 13     "
= 0    14   "Dout 14     "
= 0    15   "Dout 15     "
```

Example 1: Set value **= 0 201 "Hand out 1"**
Output signal 201 is registered as the single solenoid and the display name is **Hand out 1**.

Example 2: Set value = **11 "out 1"**
Output signals 1 and 2 are registered as the double solenoid and the display name is **out 1**.

Data type:

Data unit:

Data range:

Number of data: 3*20

Description: Specify the data on the auxiliary signal display so that the robot I/O can be set ON and OFF from the teach pendant.
= Specify in order **(Solenoid), (Signal No.), (Signal name)**.
Output signals for twenty (20) contacts can be specified.
(Solenoid): When the double solenoid is connected with output signals, the output signals should be controlled exclusively.
When "Double" is specified, two (2) successive output signals are controlled exclusively.

0 : Single solenoid (normal output)
1 : Double solenoid (Two (2) consecutive output signals are output exclusively.)

Caution: This is the setting for auxiliary signal operation through the teach pendant. Even if the double solenoid is selected, signals are not output exclusively at automatic operation. Exclusive output of signals should be specified in the program.
Even if the double solenoid is specified, all output signals are OFF at power ON.

(Signal No.): Specify the number of output signal to be used.
When "Double" is specified, specify the smaller number of two (2) consecutive output signals. Output signals that can be specified are as follows:

0	Not registered.				
1	(DOUT1)	~	16	(DOUT16)	Standard output
101	(DOUT101)	~	164	(DOUT164)	Extended digital output
201	(HANDOUT1)	~	214	(HANDOUT4)	Hand output

(Signal name): Specify the signal name displayed. Up to ten (10) characters can be set.

[U10] DEFAULT TEACHING MODE

Initial value of manual guide

```
[U10] DEFAULT TEACHING MODE
  {Coordinate  =  0:  Joint, 1:  Tool, 2:  Work, 3:  World}
  {Speed       =  0:  Low, 1:  Mid, 2:  High}
  {Jog mode    =  0:  Jog, 1:  Inching, 2:  Free}
= 3 0 0
```

Example: Set value **= 3 0 0** (World, Low, Jog)
Data type: Integer type
Data unit:
Data range:
Number of data: 3
Description: Specify the initial value of manual operation in the teaching mode.

(Coordinate): Specify the guidance coordinate system selected as default.

- 0 : Joint
- 1 : Tool
- 2 : Work
- 3 : World

(Rate): Specify the guide rate selected as default.

- 0 : Low
- 1 : Mid
- 2 : High

(Jog mode): Specify the guidance mode selected as default.

- 0 : Jog
- 1 : Inching
- 2 : Free

[U11] I/O MODE

I/O mode

[U11] I/OMODE {Default/User}(0:Default, 1:User RAM, 2:User FLASH, 3:User backup RAM) = 0

Set value: **= (I/O operation mode)**
Data type: Integer type
Data unit:
Data range: 0 ~ 3
Number of data: 1
Description: Specify the I/O operation mode.
I/Os specified in the program are calculated by sequence, which are then input or output. This parameter selects the storage area of such sequence program.
KSL3000 allows to back up the RAM area also by battery.
Specify "1" for the parameter, which should be changed to "3" after the sequence debug. (Value 1 or 3 is saved in the same area. When "1" is specified, the sequence is cleared by power OFF/ON.)

[U12] EXTEND I/O SETTING

Extended I/Os

```
[U12] EXTEND I/O SETTING
{Use/Not Use} (0:Not Use, 1:Use )
{Not Use}
{Not Use}
= 0   0   0
= 0   0   0
```

Set value: **= (Use/Not Use) (Reserved) (Reserved)**
← Setting of distribution I/O node 0.
= (Use/Not Use) (Reserved) (Reserved)
← Setting of distribution I/O node 1.

Data type: Integer type

Data unit:

Data range: 0 or 1

Number of data: 3*2

Description: Set the extended I/Os.
For the extended I/Os, two (2) nodes (node 1 and node 2) can be connected.
Node 0 is set in the upper level, and node 1 in the lower level.

(Use/Not use): Specify the presence or absence of extended I/O.
- 0 : Absence of extended I/O
- 1 : Presence of extended I/O

(Reserved): Reserved for future system extension.
Specify zero (0).

(Reserved): Reserved for future system extension.
Specify zero (0).

[U13] SEQUENCE PARAMETER

Sequence parameter

[U13] SEQUENCE PARAMETER (User I/O mode only)
= 0 0 0 0 0 0 0 0

Set value: = (R510) (R511) (R512) (R513) (R514) (R515) (R516) (R517)
Data type: Integer type
Data unit:
Data range: 0 ~ 1
Number of data: 8
Description: Set the values of internal display that can be utilized as the contact inputs in the user's created sequence program.
This parameter is effective only when "User" (user create sequence) is selected by [U11] I/O MODE.

[U14] SOFTWARE LIMIT

Software limit

```
[U14] SOFTWARE LIMIT [deg][mm]
{+ Direction}
=   116.0   141.0   121.0   361.0   0.000   0.000   0.000   0.000
{- Direction}
= -116.0 -141.0    -1.0 -361.0   0.000   0.000   0.000   0.000
```

{+ Direction}

Set values: KSL3000 **= (1 axis + joint limit) (2 axis...) (3 axis...) (4 axis...) (5 axis...) (Reserved) (Reserved) (Reserved)**

Data type: Real number type

Data unit: deg or mm

Data range:

Number of data: 8

Description: Specify the software limit values (JLIMT).
Setting of + (plus) joint limit (+ soft stroke limit). Values set in the joint limit setting change mode (JLIMIT) are saved.

{- Direction}

Set values: KSL3000 **= (1 axis - joint limit) (2 axis...) (3 axis...) (4 axis...) (5 axis...) (Reserved) (Reserved) (Reserved)**

Data type: Real number type

Data unit: deg or mm

Data range:

Number of data: 8

Description: Specify the software limit values (JLIMT).
Setting of - (minus) joint limit (- soft stroke limit). Values set in the joint limit setting change mode (JLIMT) are saved.

[U15] PLC ALARM

PLC alarms

[U15] PLC ALARM	
= "8-269 PLC alarm 01	"
= "8-270 PLC alarm 02	"
= "8-271 PLC alarm 03	"
= "8-272 PLC alarm 04	"
= "4-077 PLC alarm 05	"
= "4-078 PLC alarm 06	"
= "4-079 PLC alarm 07	"
= "4-080 PLC alarm 08	"
= "1-037 PLC alarm 09	"
= "1-038 PLC alarm 10	"
= "1-039 PLC alarm 11	"
= "1-040 PLC alarm 12	"
= "1-041 PLC alarm 13	"
= "1-042 PLC alarm 14	"
= "1-043 PLC alarm 15	"
= "1-044 PLC alarm 16	"

Example: Set value = "8-269 **PLCALM01**"
Data type:
Data unit:
Data range: Up to 32 alphanumeric characters
Number of data: 16
Description: Specify the PLC alarm message.
The PLC alarm is an alarm which can be generated by sequence when "User" is selected for "[U11] I/O mode". In this setting, message for each of such alarm can be specified.
Specify an alarm message to be displayed in the area flanked by the quotation marks ("). Though up to thirty-two (32) characters can be specified, the leading six (6) characters are used to identify the alarm number, and a total of twenty-six (26) characters can be used for the message. DO NOT change the leading six (6) characters (alarm code) which are used to identify the alarm number.

[U16] FIELD BUS

Field bus

[U16] FIELDBUS {type / Node Addr / Speed / Byte Order} = -1 -1 -1 -1

Example: Set value **= 37 4 1 0, = (Type) (Node) (Transmission rate) (Type of master)**

Data type: Integer type

Data unit:

Data range:

Number of data: 4

Description: Specify the field bus. The field bus is an optional function.

(Type): Specify the type of the field bus.

–1 : Without field bus option (initial value)
1 : Profibus
37 : DeviceNet
144 : CCLINK

(Node): Specify the node address of the field bus.
This address should not be identical with another device in the same network. The setting range differs with the type of the field bus.

–1 : Without field bus option (initial value)
0 ~ 127 : Profibus
0 ~ 63 : DeviceNet
1 ~ 64 : CCLINK

(Transmission rate): Specify the transmission rate. Setting of Profibus is unnecessary. Make it coincide with the master transmission rate.
Specify the transmission rate of DeviceNet.
0: 125 kbps
1: 250 kbps
2: 500 kbps
Specify the transmission rate of CCLINK.
0: 156 kbps
1: 625 kbps

2: 2.5 Mbps
3: 5 Mbps
4: 10 Mbps

(Type of master): Specify the type of the field bus master.
The bit string (endian) differs with the master.
Make the value identical with the master.

0 : 16-bit big endian
(DRM21, DeviceNet made by OMRON)
(A1SJH, CCLINK made by MELSEC)

1 : 16-bit little endian
(S7 315DP2, PROFIBUS made by SIEMENS)

2 : 32-bit big endian

3 : 32-bit little endian

* For details, see the Fieldbus Slave Manual.

[U17] PASSWORD

Password

[U17] Password = " "

Set value: **= (Password up to 8 characters)**
Data type:
Data unit:
Data range:
Number of data: 1
Description: The password is a character string when using the password function. The password function is optional.

[U18] ACCEL LIMIT FUNCTION

Function for limiting acceleration and deceleration according to Z -axis height

[U18] ACCEL LIMIT FUNCTION = 0

Set value: **= (Function effective/ineffective)**
Data type: Integer type
Data unit:
Data range: 0 or 1
Number of data: 1
Description: When the parameter is made valid, acceleration/deceleration is limited according to Z-axis height. This function is effective only for the SCARA robot system.
0: Ineffective function
1: Effective function

[U19] MASTER MODE

Master mode

[U19] MASTER MODE = "EXT.SIGNAL"

Set value: **= (Specify master mode after the power supply is turned on.)**
Data type:
Data unit:
Data range:
Number of data: 1
Description: This function is ineffective for KSL3000 series. The master mode is set using the key switch and user parameter [U00].

[U20] PLC COMMUNICATION REGISTER ADDRESS

PLC communication register address

```
[U20] PLC COMMUNICATION REGISTER ADDRESS
{Current Position/ Alarm/ Master Mode/ Alarm Resetting/ spare/ spare}
=       4     2560     2580          0          0          0
```

Set value: **See the description below.**

Data type: Integer type

Data unit:

Data range:

Number of data: 6

Description: This parameter is exclusively used for the die-cast unloading robot.
Communication is done with the TC200 made by CKD

Current Position:	Address where the current coordinate of the robot (in the work coordinate system) is to be sent.
Alarm:	Address where alarm information is to be sent.
Master Mode:	Address where master mode information is to be sent.
Alarm Resetting:	Address where alarm reset from the PLC is to be monitored.
spare:	Reserved
spare:	Reserved

[U21] SERIAL DATA ERROR CHECK

Serial data error check

[U21] SERIAL DATA ERROR CHECK { 0:checked, 1:passed } = 0

Set value: **= (Specify whether there is presence or absence of error check for non-procedural communication and simple procedural communication.)**

Data type: Integer type

Data unit:

Data range: 0 or 1

Number of data: 1

Description: This parameter is used as the ON/OFF changeover flag of error check for non-procedural communication and simple procedural communication. Specify zero (0) normally.

0: Error checking is carried out for non-procedural communication and simple procedural communication.

1: Error checking is not carried out for non-procedural communication and simple procedural communication.

[U22] COMMON DATA & PROGRAM FILE FUNCTION SETUP

Common data and program function setup

```
[U22] COMMON DATA & PROGRAM FILE FUNCTION SETUP
{ 0:Disable, 1:DATA.TBL, 2:SCOL.PRG }
= 0
```

Set value: **= (Specify the ON/OFF flag of the common program and common data functions in the SCOL language specifications.)**
Data type: Integer type
Data unit:
Data range: 0 ~ 2
Number of data: 1
Description: This parameter serves as the ON/OFF flag of the common program and common data functions in the SCOL language specifications.

0: Disable
1: Common data (DATA. TBL)
2: Common program (SCOL. PRG)

[U23] BYPASS FUNCTION PARAMETER

Bypass operation designation parameter

```
[U23] BYPASS FUNCTION PARAMETER
{ Function enable SW (0:Disable, 1:M-to & Bypass, 2:Bypass }
= 0
{ Retract position }
= 0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
{ Z Axis offset parameter }
= 0.0      0.0
```

Set value: This function is used only for the SCARA robot system and LCDR robot system. The parameter should be set at zero (0) in other robot system. For details of setting, see the description below.
Data type: Real number type (Function enable SW is integer type.)
Data unit:

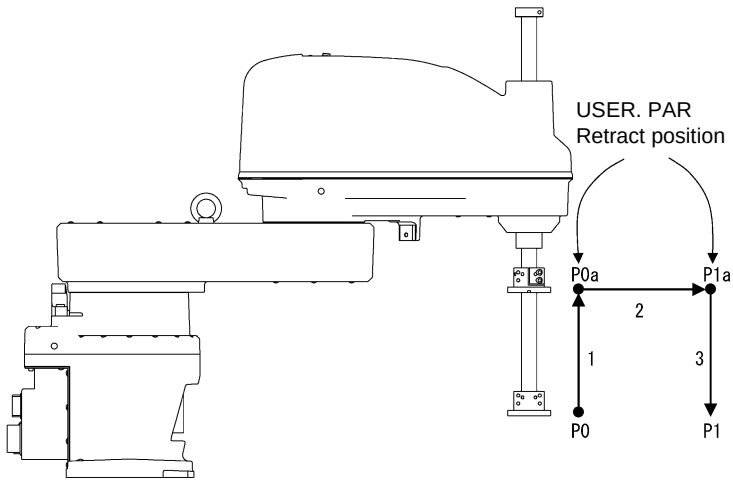
Data range:

Number of data: 11

Description: In the M–TO (move to teach point) function, as the robot arm moves directly to the teach point, it may collide with a workpiece present midway.
When this bypass (move to teach point by bypassing) function is made effective, the robot once retracts its hand, moves to just before the target position, then to the target position.

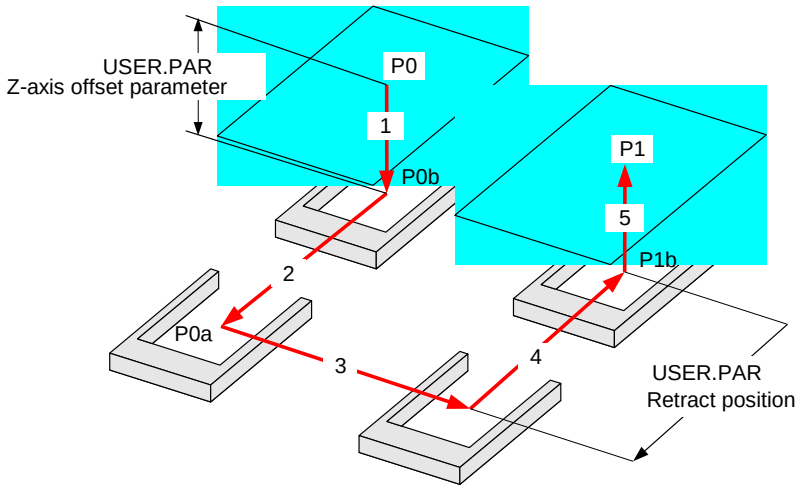
<SCARA robot>

1. Moves by retracting from current position P0 to P0a.
2. "Parallel move + rotation" from position P0a to P1a.
3. Moves by extending from position P1a to P1.



<LCDR robot>

1. Leaves a workpiece.
2. Moves by retracting from current position P0 to P0a.
3. "Parallel move + rotation" from position P0a to P1a.
4. Moves by extending from position P1a to P1.
5. Contacts the workpiece.



(1) Bypass function ON/OFF setting
= 2 (0: OFF, 1: M–TO & bypass ON, 2: Only bypass ON)

(2) Retract position parameter (Specify the absolute position rather than the relative travel distance.)
= 0.0 0.0 **200.0** 0.0 0.0 0.0 0.0 0.0 (For SCARA robot: Only Z axis is effective.) ↑ Z-axis

= **100.0** **100.0** 0.0 0.0 0.0 0.0
↑ RR-axis ↑ RL-axis
(For LCDR robot: Only RR axis and RL axis are effective.)

Z-axis offset parameter for LCDR
= –10.0 –10.0

[U24] SPEED LIMIT FUNCTION

Maximum operation speed limit

[U24] SPEED LIMIT FUNCTION { 0:Disable, 1:Enable } = 0

Set value: **= (Specify operating speed limit.)**
Data type: Integer type
Data unit:
Data range: 0 or 1
Number of data: 1
Description: When this function is made valid, operating speed of the robot is controlled in such a manner that it will not exceed the maximum speed.
0: Disable
1: Enable

[U25] FUNCTION SELECT SWITCH

Selection of enabling or disabling controller functions

[U25] FUNCTION SELECT SWITCH
= 0 0 0 0 0 0
= 0 0 0 0 0 0
= 0 0 0 0 0 0
= 0 0 0 0 0 0

Set value: **= (FUNCTION 1) (FUNCTION 2) (FUNCTION 3) (FUNCTION 4) (FUNCTION 5) (FUNCTION 6)**
= (FUNCTION 7) (FUNCTION 8) (FUNCTION 9) (FUNCTION10) (FUNCTION11) (FUNCTION12)
= (FUNCTION13) (FUNCTION14) (FUNCTION15) (FUNCTION16) (FUNCTION17) (FUNCTION18)
= (FUNCTION19) (FUNCTION20) (FUNCTION21) (FUNCTION22) (FUNCTION23) (FUNCTION24)

Data type: Integer type

Data unit:

Data range: 0 or 1

Number of data: 6*4

Description: This parameter selects ON or OFF of the controller functions. The functions which can be effective are assigned to each element.

1: Function ON

0: Function OFF

The effective functions of each element are described below.

Function	Item Name	Description	Setting Example	Supported Systems
(FUNCTION 1)	INPUT character string conversion function	In the INPUT process, this switches the process when a non-numerical character string is received. 0: Function disabled. (Invalid Channel error occurs when a non-numerical character string is received.) 1: Convert to 0 when a non-numerical character string is received. 2: Convert to a user-selected number when a non-numerical character string is received. For details, see the Communication Manual, section 4.3.	[U25]Function switch = **1** 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	All systems
(FUNCTION 2)	Selection of movement method for teaching point movement (MOV-TO)	This switches the operation command in the teaching point movement based on the guidance coordinate status. BYPASS teaching point movement is also identical. 0: All MOVE operations 1: When guidance coordinates are JOINT → MOVE operation When guidance coordinates are TOOL, WORK, or WORLD → MOVES (linear interpolation) operation	[U25]Function switch = 0 **1** 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	All systems
(FUNCTION 3)	TCmini latch register retain function	In [U11] I/O MODE 2:USER FLASH mode, the register setting is not retained in the same way as 3:USER BACKUP RAM mode. The register retain function in 2:USER FLASH mode is switched by switching the parameters. 0: Not retained (Retained in the same way as before when [U11] is 3) 1: Retained (Not retained when [U11] is 0 or 1)	[U25]Function switch = 0 0 **1** 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	All systems
(FUNCTION 4)	Output change in I/O and AUX screens	I/O changing from UTILITY → I/O and from UTILITY → AUX screen is allowed in TEACHING MODE only. 0: Conventional support (changing allowed) 1: Editing prohibited (changing allowed in TEACHING mode only)	[U25]Function switch = 0 0 0 **1** 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	All systems
(FUNCTION 5)	Reserved	0: Disabled 1: Enabled *TS2000/TS1000 has a Fieldbus 128-point expansion function.	[U25]Function switch = 0 0 0 0 **1** 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	
(FUNCTION 6)	Reserved	0: Disabled 1: Enabled	[U25]Function switch = 0 0 0 0 0 **1** = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	
(FUNCTION 7)	8-280 Buzzer and fault signal	This is a function that turns off the buzzer sound by an external signal and that turns off the alarm for the CT3 safety relay operation. When ”8-280 Safety SW relay ON” is generated, 0: Output is performed 1: Output is not performed (No alarm output or buzzer output is performed.) *In the TS2000, this is the PLC register synchronization function.	[U25]Function switch = 0 0 0 0 0 0 = **1** 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	All systems
(FUNCTION 8)	8-281 Buzzer and fault signal	This is a function that turns off the buzzer sound by an external signal and that turns off the alarm for the CT3 safety relay operation. When ”8-281 Emergency SW relay ON” is generated, 0: Output is performed 1: Output is not performed (No alarm output or buzzer output is performed.) *In the TS2000 SCARA robot, this is a vision conveyor synchronization workpiece clamp error prevention function. In the TS2000 Cartesian robot, this is a zero suppress cancel function.	[U25]Function switch = 0 0 0 0 0 0 = 0 **1** 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	All systems

Function	Item Name	Description	Setting Example	Supported Systems
(FUNCTION 9)	8-014 Alarm history setting	Specifies whether “8-014 Emergency Stop SW ON” is recorded on the alarm history. 0: Recorded on the alarm history (default) 1: Not recorded on the alarm history *In the TS2000 SCARA robot, this is a conveyor synchronization simulation function. In the TS2000 Cartesian robot, this is a I/O specify number function during distribution.	[U25]Function switch = 0 0 0 0 0 0 = 0 0 **1** 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	
(FUNCTION10)	8-017 Alarm history setting	Specifies whether “8-017 Safety SW ON” is recorded on the alarm history. 0: Recorded on the alarm history (default) 1: Not recorded on the alarm history *In the TS2000 Cartesian robot, this is a I/O specify number function during output.	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 **1** 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	
(FUNCTION11)	Function to disable acceleration suppressing	This function disables acceleration suppressing when the SPEED command changes the motion speed. With this function enabled, the acceleration time is proportional to the speed, and thus it can be shortened at a lower speed. 0: Disabled, 1: Enabled *In the TS2000 Cartesian robot, this is an INPUT command data conversion function.	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 **1** 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0	SCARA
(FUNCTION12)	Function to read and discard INPUT reception data other than during program execution	This function reads and disables INPU reception data and empties the buffer other than during program execution. (This function also clears data that has accumulated in the buffer during program execution when the program stops.) This function becomes enabled for COM1, IP1, IP2 and default. 0: The communication buffer is cleared while the program stops. 1: The communication buffer is not cleared while the program stops (if it is returned to the old specification).	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 **1** = 0 0 0 0 0 0 = 0 0 0 0 0 0	SCARA

* Note that even if the functions are identical to the TS2000, the FUNCTION numbers may differ for certain functions.

Function	Item Name	Description	Setting Example	Supported Systems
(FUNCTION 13)	Speed limit function by Z-axis area	Function for limiting the speed at the Z-axis. This sets the Z-axis speed limit area and the Z-axis speed limit area speed using the parameter [R35] Speed limit by Z axis area. 0: Disabled 1: Enabled	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = **1** 0 0 0 0 0 = 0 0 0 0 0 0	Cartesian
(FUNCTION 14)	PRINT output zero suppress cancel function	The PRINT command outputs 12-character fixed-length data. Data is right-aligned and the rest is padded with spaces. When this function is enabled, the spaces are not displayed, and the data is left-justified. 0: Disabled 1: Enabled	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 **1** 0 0 0 0 = 0 0 0 0 0 0	All systems
(FUNCTION 15)	Special function for specific customers: I/O specify number during distribution	This turns on the specified DOUT bit during distribution (during robot operation). Also, after distribution is completed, the specified DOUT bit is turned off. 0: Disabled Value other than 0: Enabled (Setting value 1 to 64, 101 to 164, 301 to 364) If the same number as FUNCTION16 is specified, the function is disabled.	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 **1** 0 0 0 = 0 0 0 0 0 0	SCARA Cartesian
(FUNCTION 16)	Special function for specific customers: I/O specify number during output	This turns on the specified DOUT bit when the robot controller and PC are connected by COM1 and data is being output to COM1. Also, after output is completed, the specified DOUT bit is turned off. 0: Disabled Value other than 0: Enabled (Setting value 1 to 64, 101 to 164, 301 to 364) If the same number as FUNCTION15 is specified, the function is disabled.	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 **1** 0 0 = 0 0 0 0 0 0	SCARA Cartesian
(FUNCTION 17)	Special function for specific customers: Execution command (character string) conversion function from external device	0: Disabled 1: Enabled (Once the execution command that was set in STRINGIO.PAR is sent from an external device to the robot controller by COM1, this function turns on the DIN information output that is set in STRINGIO.PAR or DOUT for a fixed period of time.)	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 **1** 0 = 0 0 0 0 0 0	
(FUNCTION 18)	Substituting 0 into insufficient sections of INPUT data	When waiting for input data at INPUT COM1, if the number of loaded data is less than the number of specified variables, a wait is performed for data input that was not received. When this function is enabled, the input wait status is canceled, and the missing data is filled by 0. 0: Disabled 1: Enabled	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 **1** = 0 0 0 0 0 0	SCARA Cartesian
(FUNCTION 19)	Tool flange distance display function	This adds the tool flange distance to the WORLD and WORK screens of the POS screen of the UTILITY. The tool flange distance is displayed only when this function is enabled. 0: Disabled 1: Enabled *Function available in KSL3000 only.	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = **1** 0 0 0 0 0	SCARA
(FUNCTION 20)	Reserved	0: Disabled 1: Enabled *PLC override function in TS2000	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 **1** 0 0 0 0	

Function	Item Name	Description	Setting Example	Supported Systems
(FUNCTION 21)	Reserved	0: Disabled 1: Enabled *Special function for specific customers used by (Da Ji) in TS2000	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 **1** 0 0 0	
(FUNCTION22)	Support for lowercase in PRINT command	When this function is enabled, output by the PRINT command is output unchanged in lowercase. (Previously, lowercase was converted to uppercase when output by the PRINT command.) Example: (Previously): PRINT “test”,CR → "TEST" is output (Function enabled): PRINT “test”,CR → "test" is output 0: Disabled, 1: Enabled (Data sent and received by TSPC is not converted to uppercase.)	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 **1** 0 0	SCARA Cartesian
(FUNCTION23)	MOVE-MOVES PASS function	When this function is enabled, MOVE and other joint interpolation commands and MOVES/C and other linear/circular interpolation commands can be connected by PASS. (Except for MOVEJ and DELAY, this is enabled in the PASS section for all operation commands.) 0: Disabled 1: Enabled	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 **1** 0	SCARA 6-axis
(FUNCTION24)	Buzzer sound when alarm generated	Because the KSL3000 does not have an operation panel, no method is available for stopping the buzzer except from the teach pendant. The buzzer sound can be disabled by enabling this function. The buzzer sound is enabled by default. 0: Buzzer sound is on. 1: Buzzer sound is off.	[U25]Function switch = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 0 = 0 0 0 0 0 **1**	All systems

* Note that even if the functions are identical to the TS2000, the FUNCTION numbers may differ for certain functions.

[U26] PAYLOAD FOR MANUAL OPERATION

Payload for manual operation (Kg, mm)

```
[U26] PAYLOAD FOR MANUAL OPERATION
{PAYLOAD parameter for manual operation[Mass(Kg),Offset(mm)]}
= 0.0      0.0      0.0      0.0      0.0      0.0      0.0
```

Setting: **= (MASS) (Gx) (Gy) (Gz) (Lx) (Ly) (Lz)**

Data format: Real number type

Data units:

Data range:

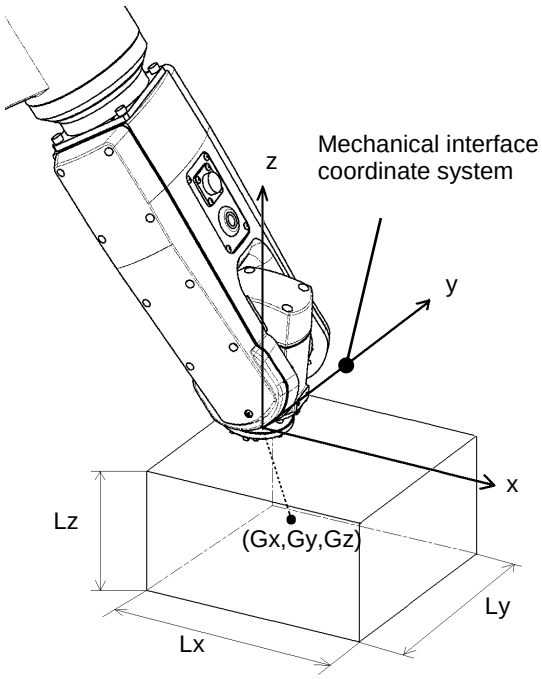
Data count: 7

Description: This sets the PAYLOAD value during manual guidance.

(MASS): <Mass> The mass of the load applied to the end of the robot is specified in kilogram units.

(Gx) to (Gz): <Center of gravity offset> The distance from the center of gravity of the load applied to the end of the robot to the tool center at the tip is specified in millimeter units.
(Gx): <Center of gravity offset in X direction>
(Gy): <Center of gravity offset in Y direction>
(Gz): <Center of gravity offset in Z direction>

(Lx) to (Lz): <Workpiece size> The size of the loaded robot workpiece is specified in millimeter units.
(Lx): <Size of workpiece in X direction>
(Ly): <Size of workpiece in Y direction>
(Lz): <Size of workpiece in Z direction>



[U27] STRINGIO.PAR Response command addition setting

STRINGIO.PAR response command setting (special function for wafer transfer system)

```
[U27] STRINGIO.PAR Response command addition setting
{0:Both 1:command only 2:sign only}
= 0
{Reception response sign}
= "-"
{Processing completion sign}
= ">"
```

Explanation: This is a system reserved parameter.
Not currently available.

[U28] PASS COMMAND MODE SW

PASS operation mode switching function

```
[U28] PASS COMMAND MODE SW
{0:PASS PRIORITY MODE 1:NO WAIT MODE}
= 0
```

Setting: **= (Specifies the PASS operation mode)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: This function is used to select whether to perform the PASS operation after completing PASS path generation or without completing PASS path generation.

0: PASS operation is performed after path generation is completed.
* The PASS operation is performed, but if the program processing time is long between PASS operation commands, a WAIT may be generated before starting the PASS operation (for compatibility with previous versions).

1: The PASS operation is performed without waiting for completion of PASS path generation.
* The PASS operation immediately after the WAIT MOTION≧100 command can no longer be performed.

[U29] COMMUNICATION SIZE OF ALARM HISTORY

Alarm history display switching function

```
[U29] COMMUNICATION SIZE OF ALARM HISTORY
{0:256 1:128}
= 0
```

Setting **= (Specifying display of alarm history)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: This function is used to select whether the alarm history shows a maximum of 128 items or 256 items.

* This function is enabled for TSPC versions 1.64 and later. For TSPC versions earlier than 1.64, the alarm history shows a maximum of 128 items.

0: Alarm history shows a maximum of 256 items.
1: Alarm history shows a maximum of 128 items.

[U30] 3-AXIS ORIGIN CHANGE FUNCTION

3-axis origin change function

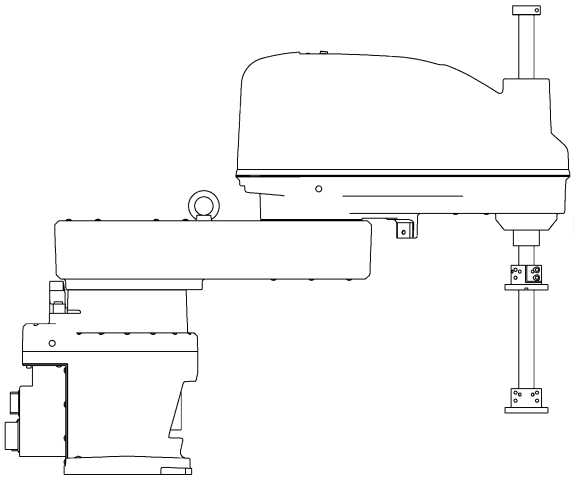
```
[U30] 3-AXIS ORIGIN CHANGE FUNCTION
{0:Disabled 1:Enabled}
to 0
{RESERVE}
= 0.0
```

{0:Disabled 1:Enabled}
Setting: **= (Function enable/disable)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: This changes the 3-axis origin position of the SCARA robot.
0: Function disabled (bottom edge is 0)
1: Function enabled (top edge is 0)
By default, the 3-axis bottom edge has a software limit of "0", but when this function is enabled, the 3-axis top edge is set to 0. This function is enabled for SCARA robot systems only.

{RESERVE}
Setting:
Data format: Real number type
Data units:
Data range:
Data count: 1
Description: System reserved.

Additional description

*For the position of the 3-axis top edge, the 3-axis origin is shifted using the [U14] 3-axis positive (+) software limit value (all numbers after the decimal point are rounded off).
The current position after inversion = the position before inversion – the [U14] 3-axes positive software limit value



[U30] 0:Disabled	[U30] 1:Enabled
200.5	0.5
200.0	0.0
0	-200.0
-0.5	-200.5

Notes

This function shifts the origin based on the setting value for [U14]. If [U14] is changed, the Z-axis position also changes.

When this function is enabled ([U30] is set to 1: Enabled), all origin setting related functions are disabled. To use an origin setting related function, disable this function ([U30] is set to 0: Disabled).

Functions disabled when [U30] is set to 1: Enabled

- SOFT LIMIT screen
- ZERO POSITION screen
- REORIG screen
- MKORG screen

[U31] JOG SPEED CHANGE FUNCTION

Jog speed change function

```
[U31] JOG SPEED CHANGE FUNCTION
{0:Disabled 1:Enabled}
= 0
```

Setting: **= (Function enable/disable)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: This is a function that enables any user-selected setting for the jog speed, inching speed, and inching amount.

0: Function disabled (Robot operates using the internal parameters that were set at shipping.)
1: Function enabled (The job speed, inching speed, and inching amount that were set in user parameters [U32] to [U34] are applied.)

* Robot operation is performed at the same speed as before (internal parameters that were set at shipping) for teaching point movement and BYPASS, which change the jog speed.

[U32] JOGGING SPEED[%]

Jogging speed

```
[U32] JOGGING SPEED
{RECTANGULAR COORDINATE [%]}
=       10
to 5
=       1
{JOINT COORDINATE [%]}
=       8       8       5       10      10      0       0       0
=       5       5       3       5       5       0       0       0
=       1       1       1       1       1       0       0       0
```

{ RECTANGULAR COORDINATE }

Setting: **= (Jog speed: High)**
= (Jog speed: Medium)
= (Jog speed: Low)
Data format: Integer type
Data units: %
Data range: 1 to 100
Data count: 1*3 (High, Medium, Low)
Description: The movement speed when performing jog guidance in the world coordinate system, workpiece coordinate system, and tool coordinate system is defined as a percentage (%) value of the maximum speed.

* When set to 0, operation is performed at the internal parameter speed that was set at shipping.

{ JOINT COORDINATE }

Setting: **= (1-axis jog speed: High) (2-axis…) (3-axis…) (4-axis…) (5-axis…) (6-axis…) (7-axis…) (8-axis…)**
= (1-axis job speed: Medium) (2-axis…) (3-axis…) (4-axis…) (5-axis…) (6-axis…) (7-axis…) (8-axis…)
= (1-axis job speed: Low) (2-axis…) (3-axis…) (4-axis…) (5-axis…) (6-axis…) (7-axis…) (8-axis…)
Data format: Integer type
Data units: %
Data range: 1 to 100
Data count: 8*3 (High, Medium, Low)
Description: The movement speed when performing jogging by joint guidance is defined as a percentage (%) value of the maximum speed for each axis.

* When set to 0, operation is performed at the internal parameter speed that was set at shipping.

[U33] INCHING SPEED[%]

Inching speed

```
[U33] INCHING SPEED
{RECTANGULAR COORDINATE [%]}
=       10
{JOINT COORDINATE [%]}
=       10      10      10      10      10      0       0       0
```

{ RECTANGULAR COORDINATE }

Setting: **= (Inching speed)**
Data format: Integer type
Data units: %
Data range: 1 to 100
Data count: 1
Description: The movement speed when performing inching in the world coordinate system, workpiece coordinate system, and tool coordinate system is defined as a percentage (%) value of the maximum speed.

* When set to 0, operation is performed at the internal parameter speed that was set at shipping.

{ JOINT COORDINATE }

Setting: **= (1-axis inching speed) (2-axis…) (3-axis…) (4-axis…) (5-axis…) (6-axis…) (7-axis…) (8-axis…)**
Data format: Integer type
Data units: %
Data range: 1 to 100
Data count: 8
Description: The movement speed when performing inching by joint guidance is defined as a percentage (%) value of the maximum speed.

* When set to 0, operation is performed at the internal parameter speed that was set at shipping.

[U34] INCHING AMOUNT [MM] [DEG]

Inching amount

```
[U34] INCHING AMOUNT
{RECTANGULAR COORDINATE   [MM][DEG]}
=      1.0
=      0.5
=     0.25
{JOINT COORDINATE   [MM][DEG]}
[0.10, 0.10, 1.00, 0.10, 0.10, 0.0, 0.0, 0.0]
=     0.05     0.05     0.50     0.05     0.05      0.0      0.0      0.0
=     0.01     0.01     0.10     0.01     0.01      0.0      0.0      0.0
```

{ RECTANGULAR COORDINATE }

Setting: **= (Inching amount: Large)**
= (Inching amount: Medium)
= (Inching amount: Small)
Data format: Real number type
Data units: mm or deg
Data range: 0.01 to limit value
Data count: 1*3 (Large, medium, small)
Description: This sets the movement amount when performing inching in the world coordinate system, workpiece coordinate system, and tool coordinate system.

* When set to 0, operation is performed at the internal parameter movement amount that was set at shipping.

{ JOINT COORDINATE }

Setting: **= (1-axis inching amount: Large) (2-axis…) (3-axis…) (4-axis…) (5-axis…) (6-axis…) (7-axis…) (8-axis…)**
= (1-axis inching amount: Medium) (2-axis…) (3-axis…) (4-axis…) (5-axis…) (6-axis…) (7-axis…) (8-axis…)
= (1-axis inching amount: Small) (2-axis…) (3-axis…) (4-axis…) (5-axis…) (6-axis…) (7-axis…) (8-axis…)
Data format: Real number type
Data units: mm or deg
Data range: 0.01 to limit value
Data count: 8*3 (Large, medium, small)
Description: This sets the inching amount when performing inching by joint guidance.

* When set to 0, operation is performed at the internal parameter movement amount that was set at shipping.

[U35] SEQUENCE FUNCTION SELECT SWITCH

Selection of enabling or disabling sequence function

[U35] SEQUENCE FUNCTION SELECT SWITCH
= 0 0 0 0 0 0 0 0

Setting: **= (FUNCTION 1) (FUNCTION 2) (FUNCTION 3) (FUNCTION 4) (FUNCTION 5) (FUNCTION 6) (FUNCTION 7) (FUNCTION 8)**

Data format: Integer type

Data units:

Data range: 0 or 1

Data count: 8

Description This selects whether functions using the sequence are enabled or disabled.

The function enabled for each element is assigned.

1: Function on, 0: Function off

The parameter function and signal assignments are shown in the table below.

[U35](from left)	Signal name	Function	Description
FUNCTION 1	H118(SEQFSW1)	Fieldbus system signal output	When this function is enabled, the system signal is assigned to the Fieldbus. 0: Disabled, 1: Enabled
FUNCTION 2	H119(SEQFSW2)	Reserved *1	
FUNCTION 3	H11A(SEQFSW3)	Reserved *1	
FUNCTION 4	H11B(SEQFSW4)	Reserved *1	
FUNCTION 5	H11C(SEQFSW5)	Reserved *1	
FUNCTION 6	H11D(SEQFSW6)	Reserved *1	
FUNCTION 7	H11E(SEQFSW7)	Reserved *1	
FUNCTION 8	H11F(SEQFSW8)	Reserved *1	

*1: Reserved for function expansion.

[U36] VIBRATION SUPPRESSION FUNCTION

Vibration control function (dedicated for TV800)

[U36] VIBRATION SUPPRESSION FUNCTION = 0

Explanation: This is a system reserved parameter.
Not currently available.

[U37] ALARM FILE DUMP FUNCTION

Alarm file dump function

```
[U37]ALARM FILE DUMP FUNCTION
{0:Disabled}
{1:Enabled(Enable function for all of the alarm)}
{2:Enabled(Latest alarm is enabled function except 8-014 or 8-017)}
{3:Enabled(Latest alarm is enabled function except 8-014)}
{4:Enabled(Latest alarm is enabled function except 8-017)}
= 0
```

Setting: **= (Enable or disable the function)**

Data format: Integer type

Data units:

Data range: 0 or 4

Data count: 1

Description: If this function is enabled, the ERROR.LOG file is created in the RAM of the robot controller when an alarm occurs.

0: The function is disabled.

1: The function is enabled for all alarms.

2: The function is enabled when an alarm other than "8-014 Emergency Stop SW ON" or "8-017 Safety SW ON" is occurring.

3: The function is enabled when an alarm other than "8-014 Emergency Stop SW ON" is occurring.

4: The function is enabled when an alarm other than "8-017 Safety SW ON" is occurring.

Items of the ERROR.LOG file

Item	Description
Current alarm	Shows a maximum of 10 alarm numbers that are occurring.
Distribution state	Shows the allocation status (0: OFF, 1: ON, 2: WAIT).
Start position world	World coordinate system start position
Start position joint	Joint coordinate system start position
End position world	World coordinate system target position (the allocation status is ON) World coordinate system previous target position (the allocation status is not ON)
End position joint	Joint coordinate target position (the allocation status is ON) Joint coordinate previous target position (the allocation status is not ON)
Program execution line	The program execution line
Program execution status	The program execution status
Select the file name	The selected file name
[M01] CONTROLLER NO.	MACHINE.PAR [M01] controller number
[M02] MACHINE NO.	MACHINE.PAR [M02] controller number
File save time	Time on which the file is saved

[U38] ALARM FOR SIGNAL BY FILE OPERATION

Alarm in file operation via signals

```
[U38]ALARM FOR SIGNAL BY    FILE OPERATION
{0:ON 1:OFF}
to 0
```

Setting: **= (Alarm enabled/disabled)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: Enable/disable the alarm in file operation via signals
0: Issues an alarm.
1: Does not Issue an alarm.
* The default is 0.

* For details about file operation via signals, see the Instruction Manual "Simplified PLC Functions" Chapter 6.

[U39] WHEN THE OVERRIDE RETENTION FUNCTION POWER FAILURE

Override retention function in case of power failure

```
[U39]WHEN THE OVERRIDE RETENTION FUNCTION POWER
FAILURE
{0:Disabled 1:Enabled}
= 0
```

Setting: **= (Enable or disable the function)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: When this function is enabled, the override is retained when power failure occurs. The override remains enabled when restarting the power supply.
0: The function is disabled. (The override is initialized at power ON.)
1: The function is enabled. (The override is not initialized at power ON. The override retained at power failure is enabled.)

[U40] SMOOTH SPEED CONTROL FUNCTION

SMOOTH speed control function

[U40]SMOOTH SPEED CONTROL FUNCTION {0:Disabled 1:Enabled} = 0

Explanation: This is a system reserved parameter.
Not currently available.

[U41] SMOOTH ALARM FUNCTION

Function to disable the SMOOTH alarm

[U41]SMOOTH ALARM FUNCTION {0:Function Disabled 1:001-025 & 001-026 Disabled 2:001-025 Disabled 3:001-026 Disabled} = 0

Explanation: This is a system reserved parameter.
Not currently available.

[U42] INPUT ALARM RESTART FUNCTION

Function to change INPUT error processing

```
[U42]INPUT ALARM RESTART FUNCTION
{0:Disabled 1:Enabled}
= 0
```

Setting: **= (Enable or disable the function)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: When this function is enabled, an INPUT instruction error (002-046 Invalid Channel or 002-034 Ethernet connection error) occurs. If the program is re-executed after the program stops, the program is executed from the line next to the interrupted line. (Conventionally, if an error occurs to stop the program, when the error is corrected and then the program is re-executed, program reset occurs and the program is executed from the beginning.)

0: The function is disabled. (As conventional, program reset occurs and the program is executed from the beginning.)
1: The function is enabled. (When the program is re-executed, the program is executed from the line next to the interrupted line.)

[U43] M-TO CONFIG ALARM FUNCTION

Function to disable configuration alarm of teach point movement by linear interpolating operation

```
[U43]M-TO CONFIG ALARM FUNCTION
{0:Function Disabled 1:001-003 Disabled}
= 0
```

Setting: **= (Enable or disable the function)**
Data format: Integer type
Data units:
Data range: 0 or 1
Data count: 1
Description: When this function is enabled, the alarm “001-003 M-TO Config Err” is disabled.
(The alarm “001-003 M-TO Config Err” occurs if the configuration at

completion of teach point movement by linear interpolating operation and the teach point configuration differ. If the targeted teach point configuration contains FREE, no alarm occurs regardless of the configuration after completion of teach point movement.)

0: The function is disabled. (As conventional, “001-003 M-TO Config Err” occurs.)

1: The function is enabled. (“001-003 M-TO Config Err” is disabled.)

[U44] SIGNAL POINT DATA NAME CHANGE FUNCTION

Function to change signal point data name

[U44]SIGNAL POINT DATA NAME CHANGE FUNCTION {0:PXXX 1:P(XXX)} = 0

Setting: **= (Point data name setting)**

Data format: Integer type

Data units:

Data range: 0 or 1

Data count: 1

Description: When this function is enabled, the point data name during signal point data reading, teaching, teach point movement, and BAYPASS movement changes to the format of point data names P(1) to P(999) in the array.

The default format is P001 to P999

0: As conventional, the format of point data name is P001 to P999.

1: The point data name changes to the format of point data names P(1) to P(999) in the array.

[U45] FUNCTION WHICH TURNS ON AN ALARM SIGNAL TO ALL ALARMS

Function to change output alarm signal

```
[U45] FUNCTION WHICH TURNS ON AN ALARM SIGNAL TO ALL
ALARMS
{0:Disabled 1:All Alarms 2:other than the emergency stop}
= 0
```

Setting: **= (Output alarm signal setting)**

Data format: Integer type

Data units:

Data range: 0 or 2

Data count: 1

Description: Conventionally, the output alarm signal is turned ON when level 8 alarm is turned ON.

When this function is enabled, the condition under which the output alarm signal is turned ON can be changed.

0: As conventional, the output alarm signal is turned ON for the level 8 alarm.

1: The output alarm signal is turned ON for all alarms.

2: The output alarm signal is turned ON for non-emergency stop alarm.

*The default value is 0.

EXTRNSEL.PAR Setting Program File for File Select Signal Line

Specify the program file corresponding to the file select signal line.

```
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EXTERNAL SELECT FILE
*** [ 00 – 0F ] *****
= "PROG00"
= "PROG01"
= "PROG02"
= "PROG03"
= "PROG04"
= "PROG05"
= "PROG06"
= "PROG07"
= "PROG08"
= "PROG09"
= "PROG0A"
= "PROG0B"
= "PROG0C"
= "PROG0D"
= "PROG0E"
= "PROG0F"
*** [ 10 – 1F ] *****
= "PROG10"
= "PROG11"
= "PROG12"
= "PROG13"
```

The number of effective files differs with the bit length according to the setting of [U07], and the files are assigned to the file select signals in turn, starting with the top file.

Bit length 1:	0	~	1 (binary number)	Two (2) files
Bit length 2:	00	~	11 (binary number)	Four (4) files
Bit length 3:	000	~	111 (binary number)	Eight (8) files
:			:	
:			:	
Bit length 8:	00000000	~	11111111 (binary notation)	256 files

Specify the file name following the equal (=) code.
Unless the equal (=) code is specified at the top of the line, it is processed as a comment.

Set value (Example): **= "PROG1"**
PROG1 is assigned to the file select signal.