Changes for the Better



Mitsubishi Electric Corporation Industrial Robot

MELFA Technical News

BFP-A6079-0243E

April 2019

Subject: Report of RT ToolBox3 Ver.1.40S release

Applicable to: FR series, F series, SQ series, SD series, S series (CR800/CR750/CR700/CR500 series robot controller)

Thank you for your continued support of Mitsubishi industrial robot "MELFA".

This Technical news describes the new version 1.40S of the RT ToolBox3. 3F-14C-WINJ(E)/3F-15C-WINJ(E)/3F-16D-WINJ(E)

In order to use the functions described in this technical news, you need to download the latest version from MITSUBISHI ELECTRIC FA site, and upgrading the RT ToolBox3.

1. Additional model

Added robot model with mist specification and clean specification to RT ToolBox3 Pro version.

2. Installer on FA site

The installer posted on the FA site was a dedicated installer for version upgrade. If RT ToolBox3 is not installed, you can not upgrade.

3. Change of provided media of RT ToolBox3 / RT ToolBox3 mini.

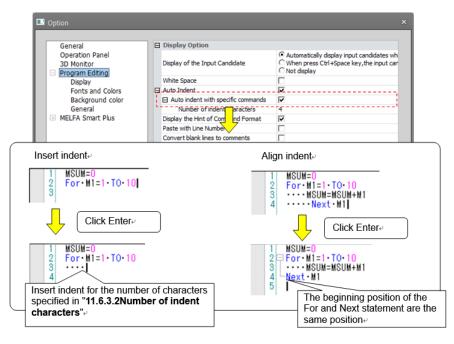
The provided media of RT ToolBox3 / RT ToolBox3 mini has been changed from CD-ROM to DVD-ROM.

MITSUBISHI ELECTRIC CORPORATION

4. Program editor

- Auto indent with specific commands

Insert/align indent when there is a specific command line break in the command edit area.



- Added the function to insert a line break after inserting a command template.
- Enabled to set breakpoints in online program.
- Added function that batch editing of structure flags on XYZ position variables batch editing screen.
- Added program template function.

You can create a program template containing comments or commands and insert them into the program being edited.

Workspace Home Online File Edit Save As S
Program template file edit Program template list
Hand Initial position
Edit program template
Ovrd 101 EHOpen 1,100,100 Mov P1 DV 1 EHClose 1,100,100
× >
OK Cancel

5. Parameter

- Added parameter initialization function.

The initialization of parameters can be implemented by two types of methods.

(1) Initialize individually

Parameter Name :		MEXBS	Robot# :	1		
ł	Explanation :	Standard base	coordinate			
1:	10.00			5:	0.00	
2:	0.00			6:	0.00	
3:	0.00					
4:	0.00					

(2) Initialize the changes altogether

Parameter I Robot1 Parameter Nar	ust 1:RC1 (Simulation)			heck in the [Changed] and c e [Initialize] button⊬	lick
Parameter AXGRTD AXGRTD AXGRTA AXMENO AXMIN AXMENO AXMIN HEINST MEINST MEINST MEINST NETGW NETGP	Explanation Denomator of gar ratio for addonal ass Mumetaro of gar ratio for addonal ass AMP No. for addonal ass Mobit of for addonal ass Index ass Mark to addonal ass	Attribute Common Common Common Common Robot Robot Robot Common Robot Rob	Select Initia Parameter AxGRTN VOINO XOMENO XOMENO VOI	Explanation Explanation Denominator of gear ratio for additional axis Amer No. for additional axis Additional axis (deg/mm = 0/1) Language(JPH:Lapanese,ENG:English) Instal bit pattem (1zend) Joint motion Init _/-(deg.nm) Ethemet Gateway IP Address Ethemet IP Address	X Attribute Common Common Common Common Common Common Robot = 1 Robot = 1 Common Common
			(Select All)		OK Cancel

- Added the function to set the tool number on the tool parameter screen.

■ Tool 1:RC1 (Simulation							- 6	⊐ ×
Robot1	RV-7FR-R							
STD Base Coordinate	Tool # (MEXTLNO)	_ Tool	<u>C</u> oordinate [Data				
	2 -		Tool1-4	•				
(1997)	SID Looi Coordinate							
(MEXBS) [mm, deg]	(MEXTL) [mm, deg]		MEXTL1 [mm, deg]	MEXTL2 [mm, deg]	MEXTL3 [mm, deg]	MEXTL4 [mm, deg]		
X: 0.00	x: 20	x:	10	20	40	0.00		
Y: 0.00	Y: 20	Y:	20	20	50	0.00		
Z: 0.00	Z: 50	Z :	30	50	60	0.00		
A: 0.00	A: 0.00	A :	0.00	0.00	0.00	0.00		
B: 0.00	B: 0.00	В:	0.00	0.00	0.00	0.00		
C: 0.00	C: 0.00	C :	0.00	0.00	0.00	0.00		
- For Repairing Positions To	ool (Read Only)							
STD Base Coordinate		Teel	Coordinate [) a fea				
STD Base Coordinate	STD Tool Coordinate		coordinate t	Jala			ור	
(MEXDBS) [mm, deg]	(MEXDTL) [mm, deg]		MEXDTL1 [mm, deg]	MEXDTL2 [mm, deg]	MEXDTL3 [mm, deg]	MEXDTL4 [mm, deg]		
X: 0.0000	x : 0.0000	x:	0.0000	0.0000	0.0000	0.0000		
Y: 0.0000	Y: 0.0000	Y :	0.0000	0.0000	0.0000	0.0000		
Z: 0.0000	Z: 0.0000	z :	0.0000	0.0000	0.0000	0.0000		
A: 0.0000	A: 0.0000	A :	0.0000	0.0000	0.0000	0.0000		
B: 0.0000	B: 0.0000	В:	0.0000	0.0000	0.0000	0.0000		
C: 0.0000	C: 0.0000	C :	0.0000	0.0000	0.0000	0.0000		
					Explain	W <u>r</u> ite		

- Added models for overseas to the electric hand parameter screen.

Electric Hand 1:RC1 (Simulation)		
Electric Hand1 * ~ Initialize Parameter Iype (EHn TYPE) 1	· · · · · · · · · · · · · · · · · · ·	Initialize
Parameter Initial Soft Limit(±) (EHnLMTP) 0.0 [mm] Soft Limit(±) (EHnLMTM) 0.0 [mm] Stroke (EHnSTRK) Pos <u>c</u> omp Dist (EHnPSCD) Origin Org Pos Direction (EHnORGD) Speed to Org Pos (EHnORGV) Org Pos Shift (EHnORGSF) Org Pos Ret System (EHnORGS) Ostroke Width	4F-MEHGR-02 n 4F-MEHGR-03 4F-MEHGR-04	0 [%] 0 [%] 0 [%] 0.00 [mm] 0.00 [mm] 0.00 [mm]

6. Program Monitor

Added a function to change the variable name during monitoring.

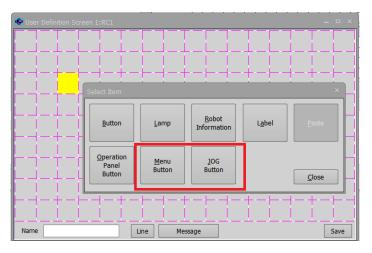
Variable Name	Туре	Value			
p1	Position	(+369.98,-0.00,+705.13,-180.00,+0.02,-180.00)(7,0)			
PPOS(1)	Position	(+113.26,+153.51,+705.13,+180.00,+0.02,-107.83)(7,0)			
POS(2)	Position	(+113.27,+153.57,+524.91,+180.00,+0.02,-107.83)(7,0)			
PPOS(3)	Position	(+113.25,+153.51,+714.37,+180.00,+0.02,-107.83)(7,0)	(+113.25,+153.51,+714.37,+180.00,+0.02,-107.83)(7,0)		
Add	<u>S</u> elect <u>D</u> elete		IELFA RT ToolBox3 Input value name.		

7. General purpose signal monitor

Added the function to save input / output signal numbers and the number of lines for each screen.

8. User definition screen

Add menu button and jog button to user definition screen.

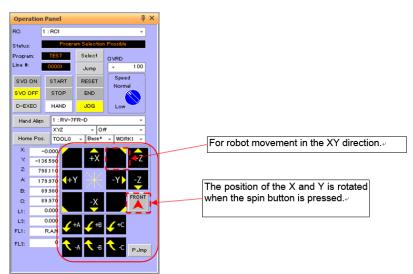


9. Operation Panel

- Add [P.jump] button to operation panel.
- Corresponding to arch motion with position jump.

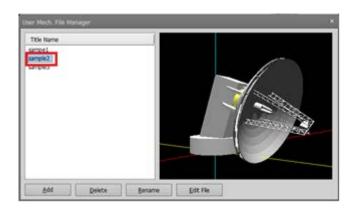
1:RC1 Simulation ×		
Status: Program Selection Possible Override:	Position Jump ×	
Program: 100 Select 🗱 🔽 100 Line #: 00001 Jump 🛐	Robot Coordinates in Selection Offset:	
Operation Panel	X: 140.071 0.000	
SVO ON SVO OFF START STOP RESET END	Y: 236.905 0.000	
	Z: 714.402 0.000	
MonitorStep	A: 180.000 0.000	
3D Error Program BACKWD FORWD CONT	B: 0.020 0.000	
	C: -107.825 0.000	
D-EXEC HAND JOG Driving Speed Automatic		
Hand Home 1: RV=7EB-B	FLG1: R,A,N Edit FLG1	
Align Position 1:RV-/FR-R •	FLG2: 0 Edit FLG2	
TOOL3 - Base* - WORK1 -	O <u>f</u> fset Reset	Arch motion
× 140.071 - +		7 10111101011
Y 236.905 - + Z: 714.402 - +	Interpolation: Arch (Mva)	
	Joint (Mov) Linear (Mvs)	
A: 180,000 - + B: 0,020 - +	Move Arch (Mva)	
C: -107.825 - +		
FLI: RAN FLI: 0	Position jump	

- Added an operation panel with large JOG buttons.

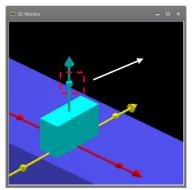


10. 3D monitor

- Added distance measurement function to 3D display screen such as hand editing.
- Added function that restore the object setting contents of the layout and the robot arrangement position.
- Added function that double-click the title name to open the editing screen in the file manager of the hand/robot parts/user mech.

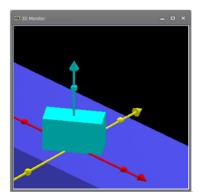


- Added the ability to rotate objects by dragging

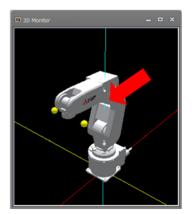




+.. Drag in Y direction..

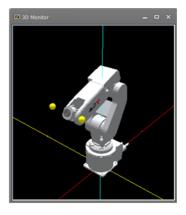


Added the function to rotate the control point of the robot by drag operation.



Hold down [Ctrl] + [Shift] key, click on the tool's Y coordinate sphere and slide in X direction.₀



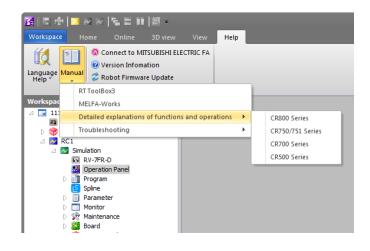


11. I / O simulator

- Supported the HG device of GX Works3.

12. Help

- Added [Detailed explanations of functions and operations] and [Troubleshooting] items in help of the manual.



13. Trouble correction

- Fixed a bug of becoming a blue back on a specific computer.
- Fixed a bug that moved to the back of other screens.