

## Files You Can Copy Between Controllers

### Introduction

If you have worked on more than one Motoman robot you have probably thought about copying jobs, configuration data or variables from a successful implementation to the robot you are currently working on. A lot of the information that is used to configure and run our robots is stored in plain text files that can be copied to memory sticks and manipulated on a PC. What files can be copied safely, and which ones might cause problems if used on another robot? How can you copy files from one robot to the another? The purpose of this document is to provide advice on what you can copy from one controller to another and basic procedures for how to do that.

Throughout this document we will refer to the “source” system as the one that you want to copy files from. The “target” system will be the robot(s) you want to copy the files to.

When in doubt about whether the transfer of files will cause problems please contact us for advice. What may appear to be a bit time savings opportunity could end up taking more time if key files are corrupted or there are unexpected consequences from the change.

### Before You Begin

1. Backup your target system(s).
2. Review the backup to make sure it is complete and useable.
3. Store the backup in a safe place.
4. Do not use the backup memory device for other purposes.

We cannot stress this enough! A lot of mistakes and missteps can be corrected by restoring from backup. Be sure you have a good quality backup, and it is safe from being lost or overwritten.

If you are not familiar with the backup procedures, they can be found in the “Instructions” manual that was included on a USB memory disk with your controller. They can also be found on our website at <https://www.motoman.com/en-us/service-training/product-documentation>

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## Files you CAN Safely Copy from System to System

**\*.JBI Files (robot programs)** – Program files can be safely copied from one controller to another. Be aware there may options that may need to be enabled on the target system that were used on the source system. You may also need to touch up your taught points.

**TOOL.CND Files (Tool files)** – You can safely copy your tool files from one controller to another. This can save a significant amount of time when identical tooling is used.

**YSFLOGIC.DAT (Safety) Files** –Your safety logic file can be copied. If your system has the FSU option, the CRC check must be disabled before the backup and before the restore. (To disable CRC checking, select SYSTEM, then SETUP, FUNCTION ENABLE and set Save data CRC Check Function to “Invalid”. Be sure to mark this as VALID after the file has been restored.

**ARCSTART and WELDER.DAT Files** – These files define weld parameters and are safe to copy, assuming similar power sources are used.

## Files you Should NOT Copy from System to System

**CMOS.BIN** – This is a “memory dump” from the controller. It contains all the system configuration, application data, parameters, jobs, etc. Even on two brand new controllers fresh from the factory there may be differences (e.g., encoder values) that you do not want to overwrite on the target system.

**\*.PRM Files (Parameters)** – These files contain literally tens of thousands of parameters that define how the robot will operate. Due to the complexity and possible unintended consequences, they should not be copied between controllers.

**CIOPRG.LST (Ladder) Files** – You may be aware there are two parts to the ladder: a system side which is only able to be changed by Yaskawa personnel and a user side where you make your changes. This cannot be copied over in part due to the system ladder. If changes are to be copied over it may work best to back up the source ladder, print it out and compare it to the existing ladder on the target system.

These are general rules. When in doubt, contact [partnersupport@motoman.com](mailto:partnersupport@motoman.com) for specific guidance.

## How to Save (Backup) Files

Purchase a few USB memory sticks. It is good to be able to have enough that you can file important backups away without worrying about running out of them. Experience has shown that the larger, more expensive memory sticks may not work as well as a more basic version. Ones with 4Gb capacity and meeting the USB 2.0 standard should be fine.



PARTNER SUPPORT

*Shared Integration Experience*

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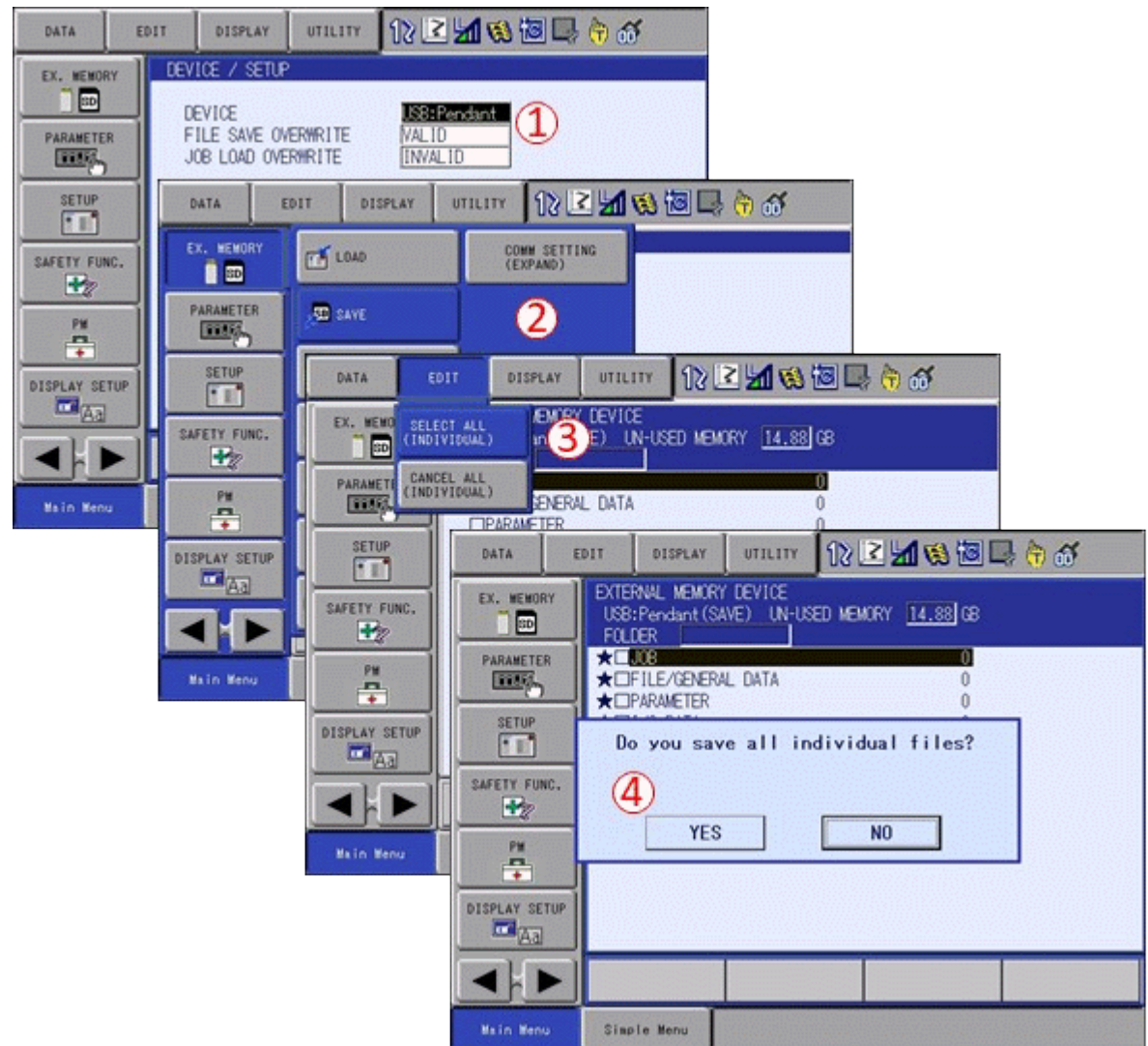
Following are detailed instructions for backing up using a standard pendant, using the Smart Pendant and several automatic backup alternatives. Automatic backups are a great way to make sure the “fixed schedule” backups occur without requiring someone to remember to do them or visit the location of the controller.

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## Backup Procedures Using Standard Pendant

To backup all files individually: At any security level:  
Make sure you have inserted your USB Memory Device into the pendant.

1. Select EX. MEMORY / DEVICE and verify backups will go to the USB:Pendant.
2. Select EX. MEMORY /Select SAVE
3. Select EDIT / SELECT ALL (INDIVIDUAL)
4. Press the ENTER key on the pendant, responding YES to the “Do you save all individual files?” prompt.

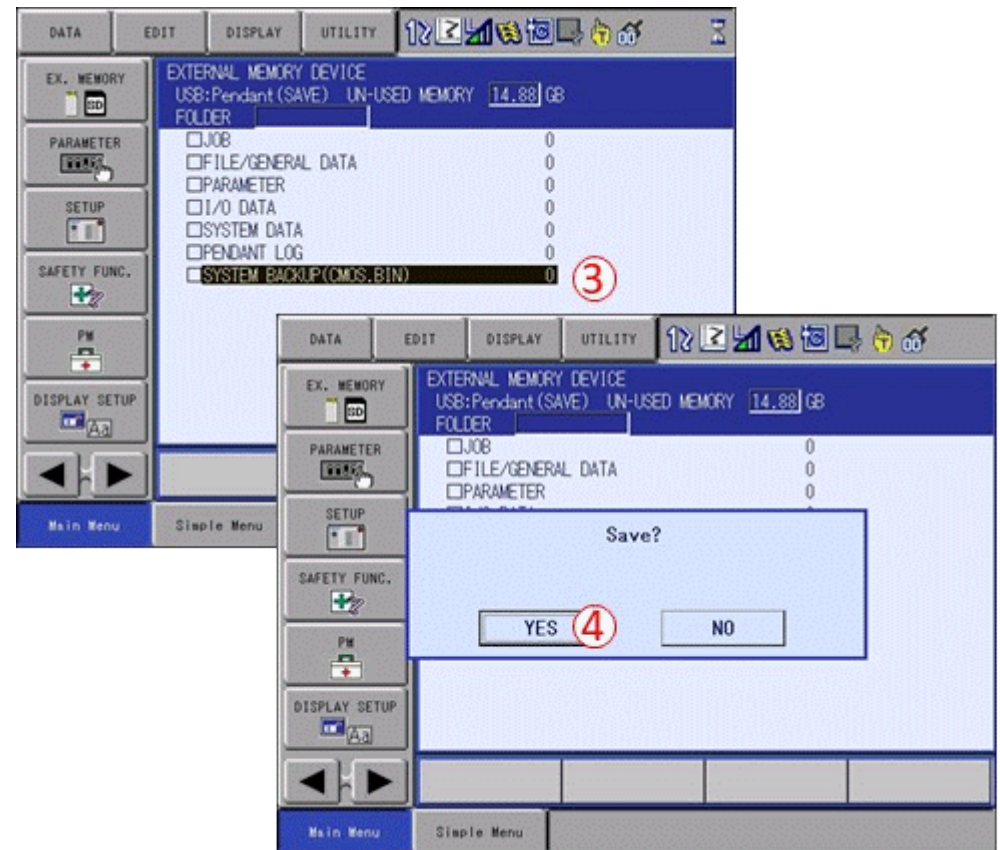


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To backup CMOS.BIN: At any security level:

Make sure you have inserted your USB Memory Device into the pendant.

1. Select EX. MEMORY / DEVICE and verify backups will go the USB:Pendant.
2. Select EX. MEMORY /Select SAVE
3. Select SYSTEM BACKUP(CMOS.BIN)
4. Press the ENTER key on the pendant, responding YES to the Save? prompt




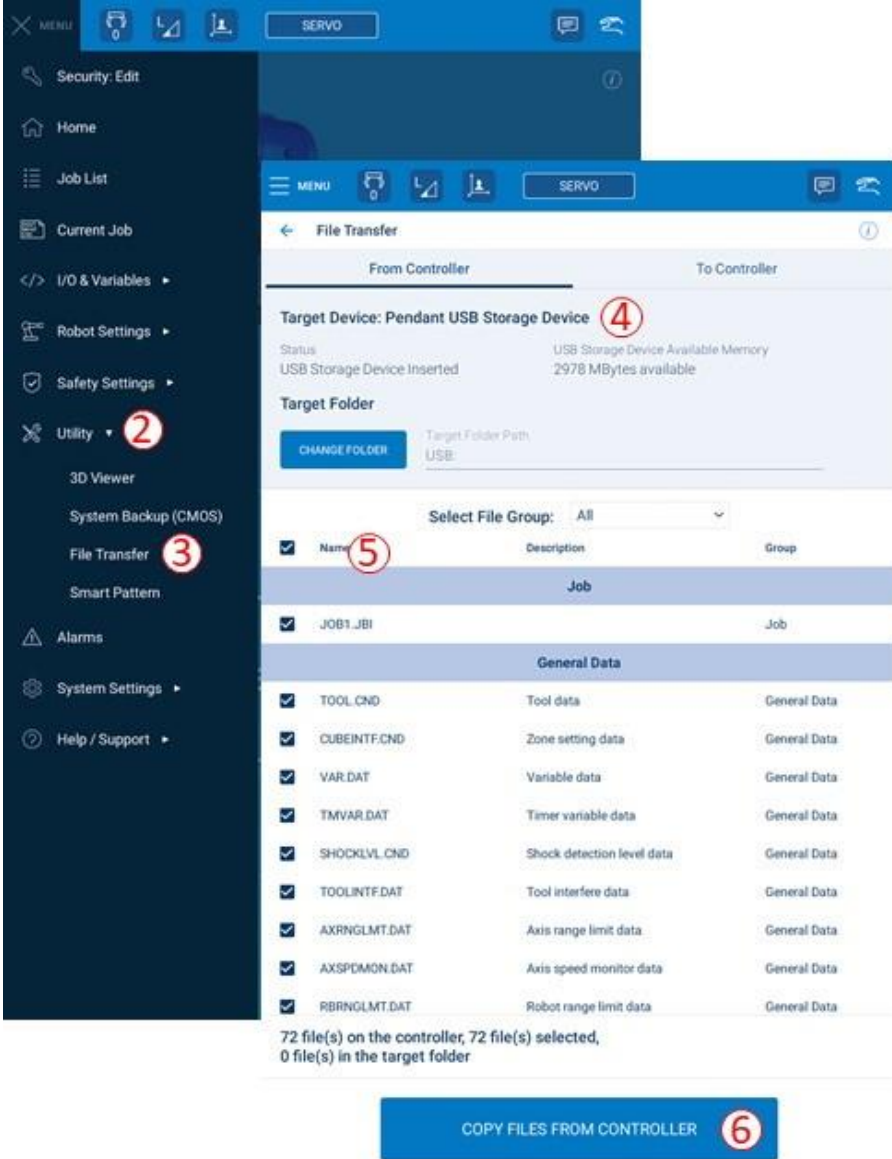
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## Backup Procedures Using Smart Pendant


To backup all files individually: At any security level:

Make sure you have inserted your USB Memory Device into the pendant.

1. Select 
2. Select Utility
3. Select File Transfer
4. Verify the target device is “Pendant USB Storage Device”.
5. Click in the checkbox next to “Name” to select all files.
6. Click on the “COPY FILES FROM CONTROLLER” button




72 file(s) on the controller, 72 file(s) selected,  
0 file(s) in the target folder

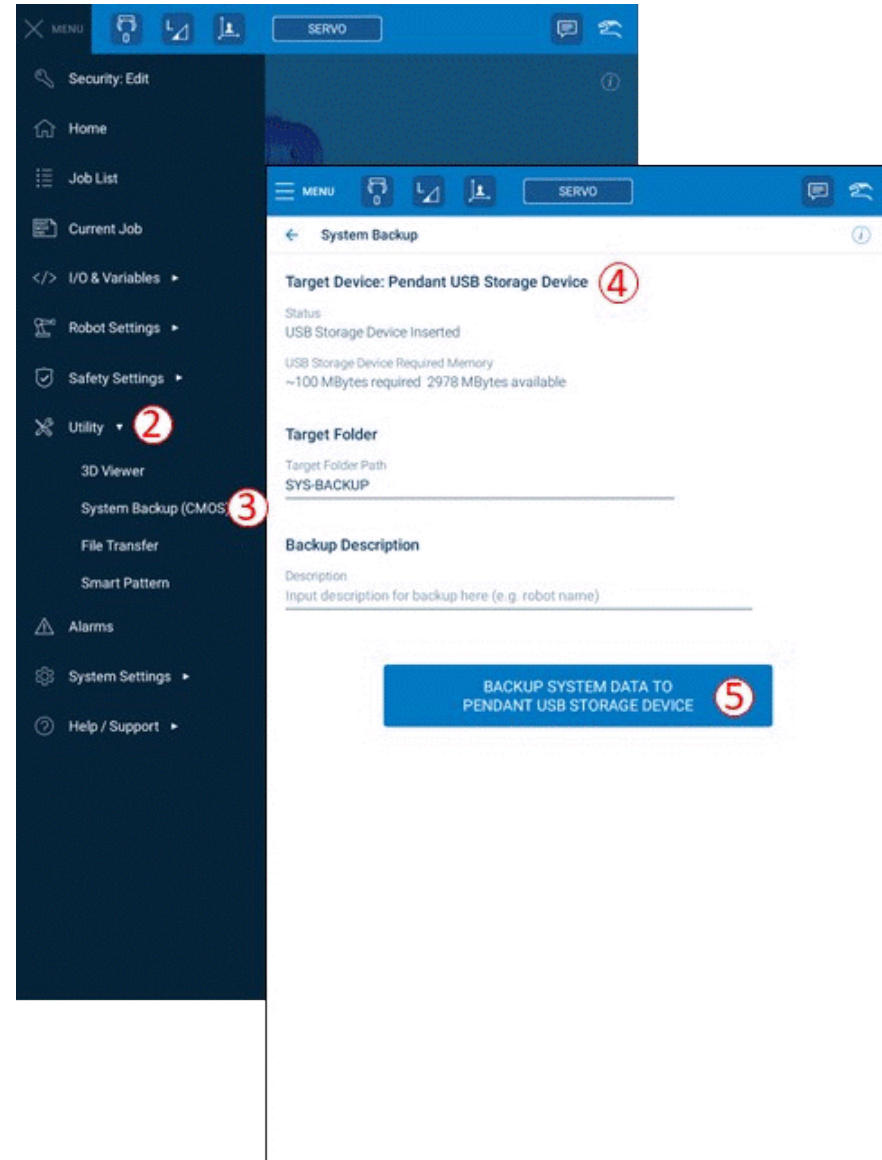
COPY FILES FROM CONTROLLER 

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To backup CMOS.BIN: At any security level:

Make sure you have inserted your USB Memory Device into the pendant.

1. Select 
2. Select Utility
3. Select System Backup (CMOS)
4. Verify the target device is “Pendant USB Storage Device”.
5. Click in the button labelled “BACKUP SYSTEM DATA TO PENDANT USB STORAGE DEVICE.”



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## How to Restore (Load) Files to Another Controller

Should you need to restore files from a backup, the procedure is basically the reverse of a backup. From the standard pendant, select EXT MEMORY, LOAD, and select the files you wish to restore. On the Smart Pendant, select UTILITYU, FILE TRANSFER, then make sure TO CONTROLLER is selected.

A few caveats:

CMOS.BIN can only be restored while in MAINTENANCE MODE. (Hold the MAIN MENU key while powering on the controller.

It is not safe to copy files from one controller to another, even if they are configured the same. Job (JBI) files may be copied in many cases, with the understanding that there will be work to do on the target system to re-teach points, adapt to different signal addressing, etc. Contact Yaskawa Technical Support for advice on replicated configuration information from one controller to another.

## Files Available to Save and Load

Following is a list of files typically found on the controller. This may vary depending on the application configuration and features that were included with the system. Also described are the permissions at each security mode (e.g., Operation, Editing, Management, Safety) required to save or load the files.



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Data Classification		File Name (Saved Data)	Save				Load			
			OPN	EDT	MNG	SFT	OPN	EDT	MNG	SFT
SYSTEM BACKUP (CMOS.BIN)		CMOS.BIN	○	○	○	○	X	X	X	X
1. JOB	Single job	JOBNAME.JBI	○	○	○	○	X	○	○	○
	Related job (Job+Condition)	JOBNAME.JBR	○	○	○	○	X	○	○	○
2 FILE/ GENERAL DATA	Tool data	TOOL.CND	○	○	○	○	X	○	○	○
	Weaving data	WEAV.CND	○	○	○	○	X	○	○	○
	User coordinate data	UFRAME.CND	○	○	○	○	X	○	○	○
	Variable data	VAR.DAT	○	○	○	○	X	○	○	○
	Arc start condition data	ARCSRT.CND	○	○	○	○	X	○	○	○
	Arc end condition data	ARCEND.CND	○	○	○	○	X	○	○	○
	Welding condition auxiliary data	ARCSUP.DAT	○	○	○	○	X	○	○	○
	Welder characteristic data	WELDER.DAT	○	○	○	○	X	○	○	○
	Welder characteristic definition data	WELDUDEF.DAT	○	○	○	○	X	○	○	○
	Shock detection level data	SHOCKLVL.CND	○	○	○	○	X	○	○	○
	Job registration data	JET.DAT	○	○	○	○	X	○	○	○
	Interference area file	CUBEINTF.CND	○	○	○	○	X	○	○	○
	Motor Gun Pressure Data	SGPRS.CND	○	○	○	○	X	○	○	○
	Motor Gun Dry Pressure Data	SGPRSCL.CND	○	○	○	○	X	○	○	○
	Spot Gun Condition Data	SGSPEC.DAT	○	○	○	○	X	○	○	○
	Spot Welder I/F Data	SGWELDIF.DAT	○	○	○	○	X	○	○	○
	Gun Open Position Data	STROKE.DAT	○	○	○	○	X	○	○	○
	Spot I/O Allocation Data	SGIO.DAT	○	○	○	○	X	○	○	○
	Spot Welding Condition Data	SPOTWELD.DAT	○	○	○	○	X	○	○	○
	Clearance Setting Data	SGCLARNC.DAT	○	○	○	○	X	○	○	○
	Motor Gun Auto Tuning Data	SGUNAUTO.DAT	○	○	○	○	X	○	○	○
	Gun Detail Setting Data	SGDTL.DAT	○	○	○	○	X	○	○	○
	Spot Management Data	SGSPTMNG.DAT	○	○	○	○	X	○	○	○
	Manual Press Condition Data	SGMNLPRS.CND	○	○	○	○	X	○	○	○
	Tip Dress Condition Data	SGTIPDRS.CND	○	○	○	○	X	○	○	○
	Airgun condition data	AIRGUN.DAT	○	○	○	○	X	○	○	○
User menu data	USERMENU.DAT	○	○	○	○	X	○	○	○	
Timer variable data	TMVAR.DAT	○	○	○	○	X	○	○	○	
Paint condition	PNTCND.CND	○	○	○	○	X	○	○	○	
Paint calibration set	PNTCLB.DAT	○	○	○	○	X	○	○	○	
Paint time chart	PNTTC.DAT	○	○	○	○	X	○	○	○	
Paint data set	PNTDATA.DAT	○	○	○	○	X	○	○	○	

\* ○: Can be done, X: Cannot be done

OPN: Operation mode, EDT: Edit mode, MNG: Management mode, SFT: Safety mode

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Data Classification	File Name (Saved Data)	Save				Load				
		OPN	EDT	MNG	SFT	OPN	EDT	MNG	SFT	
3. PARAMETER	ALL.PRM	○	○	○	○	X	X	○	○	
3. PARA-METER	Robot matching parameter	RC.PRM	○	○	○	○	X	X	○	○
	System definition parameter	SD.PRM	○	○	○	○	X	X	○	○
	Coordinate home position parameter	RO.PRM	○	○	○	○	X	X	○	○
	System matching parameter	SC.PRM	○	○	○	○	X	X	○	○
	CIO parameter	CIO.PRM	○	○	○	○	X	X	○	○
	Function definition parameter	FD.PRM	○	○	○	○	X	X	○	○
	Application parameter	AP.PRM	○	○	○	○	X	X	○	○
	Transmission (general) parameter	RS.PRM	○	○	○	○	X	X	○	○
	Sensor parameter	SE.PRM	○	○	○	○	X	X	○	○
	Servo parameter	SV.PRM	○	○	○	○	X	X	○	○
	Servomotor parameter	SVM.PRM	○	○	○	○	X	X	○	○
	Operation control parameter	AMC.PRM	○	○	○	○	X	X	○	○
	Servo power block parameter	SVP.PRM	○	○	○	○	X	X	○	○
	Motion function parameter	MF.PRM	○	○	○	○	X	X	○	○
	SERVOPACK parameter	SVS.PRM	○	○	○	○	X	X	○	○
	Converter parameter	SVC.PRM	○	○	○	○	X	X	○	○
Robot control expand parameter	RE.PRM	○	○	○	○	X	X	○	○	
Safety function parameter	FMS.PRM	○	○	○	○	X	X	○	○	
4. I/O DATA	CIO program	CIOPRG.LST	○	○	○	○	X	X	○	○
	I/O name data	IONAME.DAT	○	○	○	○	X	X	○	○
	Pseudo input signals	PSEUDOIN.DAT	○	○	○	○	X	X	○	○
	External I/O name data	EXIONAME.DAT	○	○	○	○	X	X	○	○
	Register name data	IOMNAME.DAT	○	○	○	○	X	X	X	X
	YSF logic file	YSFLOGIC.DAT	○	○	○	○	X	X	○	○

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			OPN	EDT	MNG	SFT	OPN	EDT	MNG	SFT
5. SYSTEM DATA	Second home position	HOME2.DAT	○	○	○	○	X	X	○	○
	User word	UWORD.DAT	○	○	○	○	X	X	○	○
	SV monitor signal	SVMON.DAT	○	○	○	○	X	X	○	○
	Variable name	VARNAME.DAT	○	○	○	○	X	X	○	○
	Alarm history data	ALMHIST.DAT	○	○	○	○	X	X	X	X
	Home position calibrating data	ABSO.DAT	○	○	○	○	X	X	○	○
	System information	SYSTEM.SYS	○	○	○	○	X	X	X	X
	Controller information	PANELBOX.LOG	○	○	○	○	X	X	X	X
	Work home position data	OPEORG.DAT	○	○	○	○	X	X	○	○
	I/O message history data	IOMSGHST.DAT	○	○	○	○	X	X	X	X
	Function key allocation data	KEYALLOC.DAT	○	○	○	○	X	X	○	○
	Arc monitor data	ARCMON.DAT	○	○	○	○	X	X	X	X
	Wear detection base position data	SGWEARBP.DAT	○	○	○	○	X	X	○	○
	External IO ALLOC data	EIOALLOC.DAT	○	○	○	○	X	X	○	○
	Max/ Min torque data	TRQDAT.DAT	○	○	○	○	X	X	○	○
	Logdata	LOGDATA.DAT	○	○	○	○	X	X	X	X
	PM (reducer) file	PMTRQDB.DAT	○	○	○	○	X	X	○	○
	PM (reducer) condition	PMCOND.CND	○	○	○	○	X	X	○	○
	Encoder maintenance	ENCHEAT.DAT	○	○	○	○	X	X	X	X
	Inspection record file	PMLOG.DAT	○	○	○	○	X	X	X	X
Robot stop FACTR file	RBSTPFCT.DAT	○	○	○	○	X	X	X	X	
SETTM setup file	SETTM.DAT	○	○	○	○	X	X	○	○	
Timer variable name	TMNAME.DAT	○	○	○	○	X	X	○	○	
Paint system	PNTSYS.DAT	○	○	○	○	X	X	○	○	
Paint special	PNTSPCL.DAT	○	○	○	○	X	X	○	○	
Paint time chart set	PNTTCSET.DAT	○	○	○	○	X	X	○	○	

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