Tel +1 (717) 767-6511
Fax +1 (717) 764-0839
www.redlion.net

Yaskawa FSP Drive

Information Sheet for Crimson v2.0

Compatible Devices

- Yaskawa FSP Drives

Verified Devices

- Yaskawa FSP-01BMC

NOTE: The driver does not verify the correctness of any data sent to the drive. It is the programmer's responsibility to ensure that written values are within safe limits.

Accessible Data

Prefix	Description	Read Var/Par or Function	Read Opcode	Write Opcode
			(ERROR help)	
VARI	VARIABLE		72	81
PARI	PARAMETER (See Note 1)		85	80
POLI	POLLING (Status)		0	0
ACCI	ACCELERATION	Variable 5		64
CONI	CONTROL			69
GAII	GAIN	Variable 27		71
GFAI	GET FROM ARRAY		160	
GTVI	GET VERSION		63	
JRKI	JERK TIME	Variable 7		74
RFAI	Set Variable = ARRAY[Index]	Send RFAI1+RFAI2		159
RFAI1	READ FROM ARRAY - Index		Internal	Internal
RFAI2	READ FROM ARRAY - Variable		Internal	Internal
RUNI	RUN			78
S1OI	SET OUTPUT	Send S1OI1+S1OI2		79
S1OI1	SET OUTPUT - Number		Internal	Internal
S1OI2	SET OUTPUT - State		Internal	Internal
SNOI	SET OUTPUTS	Send SNOI1+SNOI2		107
SNOI1	SET OUTPUTS - Mask		Internal	Internal

SNOI2	SET OUTPUTS - State		Internal	Internal
SZAI	SET ZERO POSITION	Variable 9		95
SPDI	SPEED	Variable 3		83
STAI	START			82
STXI	STOP EX	Send STXI1+STXI2		153
STXI1	STOP EX –Type		Internal	Internal
STXI2	STOP EX - Servo State		Internal	Internal
TQLI	TORQUE LIMITS	Send TQLI1+TQLI2		87
TQLI1	TORQUE LIMIT - Forward	Parameter 402 (Hex)	Internal	Internal
TQLI2	TORQUE LIMIT - Reverse	Parameter 403 (Hex)	Internal	Internal
WRII	Set ARRAY[Index] = Value	Send WRII1+WRII2		158
WRII1	WRITE TO ARRAY - Index		Internal	Internal
WRII2	WRITE TO ARRAY - Value		Internal	Internal
ERROR	Fault Response <Command Word><Fault Word>		Internal	Internal

Note 1: Parameter selections are entered in Hexadecimal numbers as shown in the Yaskawa FlexWorks User Manual.

Items with no entry in the Read Opcode column are Write-Only.
Items with no entry in the Write Opcode column are Read-Only.

INTERNAL (Cached) Values –Some of the commands above are marked internal, as multiple data values must be sent by a command. The programmer must arrange to store the correct data into the internal items before executing the base command. For example, RFAI1 and RFAI2 must be selected before setting RFAI to the desired value.

INDIRECT WRITE OPERATIONS

RFAI, S1OI, SNOI, WRII support writing data as a variable number instead of as an integer. The programmer can choose this by proper choice of the data that is sent when executing the command. When selected, the dialog box displays the options. Writing a value that is not listed will treat all data as integers.

RFAI displays in the upper right of the dialog box:
Data = 1 -> Index = Integer
Data = 2 -> Index = Variable Number

S1OI displays in the upper right of the dialog box:
Data = 1 -> State = Integer
Data = 2 -> State = Variable Number

SNOI displays in the upper right of the dialog box:

Data = 1 -> Mask + State = Integers
Data = 2 -> Mask = Variable Number (State = Integer)
Data = 3 -> State = Variable Number (Mask = Integer)
Data = 4 -> Mask + State = Variable Numbers

WRII displays in the upper right of the dialog box:

Data = 1 -> Index + Value = Integers
Data = 2 -> Index = Variable Number (Value = Integer)
Data = 3 -> Value = Variable Number (Index = Integer)
Data = 4 -> Index + Value = Variable Numbers

READ VAR/PAR or Function – For the programmer's convenience, this column provides the Variable number or Parameter Number where the written data is stored, or, for multiple parameter writes, the commands sent when the command, e.g. RFAI (uses RFAI1, RFAI2) is set to the desired value.

ERROR – Fault Response: This item returns the opcode number and error code for the most recent command or data access that could not be executed by the drive. A write of any value to ERROR resets the value to 0.

The high 16-bit word contains the opcode number listed in the Write or Read column. The low 16-bit word contains the error number returned by the servo. A value is kept until a subsequent value is received.
See the Yaskawa FlexWorks User Manual for error code explanations.

For example:
Two integer tag items, ERRORCmd and ERRORVal might be created for evaluating a non-zero result:
Set ERRORCmd = ERROR >> 16 and set ERRORVal = ERROR & 0xFFFF.
An error display might be ERRORCmd = 81, ERRORVal = 6. This would mean command 81 – Set Variable could not be executed because the Variable number chosen was out of range.