

Gen IV Controller

Assignable I/O Instructions



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1. Assignable I/O

The Gen IV controller supports assignable I/O.

Buses: The controller is divided up into buses. Each bus has a set of inputs and a set of outputs. Currently the controller supports the following buses.

Bus Number	Bus
1	Physical I/O
2	Fieldbus (Anybus module) I/O
3	Modbus TCP
4	Ethernet/IP

All assignments have a bus, element, and bit configuration to define its location in the system. The bus value needs to be set from the list above. The element and bit define the location in the bus. The first element on the bus is 0 and goes up the last legal element for the given bus. The bits in each element is referenced from 0(LSB) to 31(MSB).

Inputs

All input assignments have a Bus, Element, and Bit configuration to define its location in the system. Along with the basic configuration many also have other configuration(s) that allow its behavior to be modified to suit the application.

			Support	ed Feature			Controllers					
	Bus	Element	Bit 0-31	Polarity N.O./N.C.	Width	Offset	iEC	iAC	iPC	iBC	iBC-Z	
Do Nothing		√				ĺ						
Start		\checkmark	\checkmark				\checkmark					
Stop			\checkmark									
Reverse			\checkmark				\checkmark					
Disable			\checkmark						\checkmark			
Reset Job	\checkmark		\checkmark				\checkmark					
Select PSet					\checkmark	\checkmark						
Select Job		√									\checkmark	
Select Job Sequence		√										
Disable Assembly		√		\checkmark								
Set ID											\checkmark	
Set ID (word swap)			\checkmark		\checkmark		\checkmark				\checkmark	
Set Date/Time			\checkmark		\checkmark		\checkmark		\checkmark			
Set Date/Time (word swap)			\checkmark		\checkmark		\checkmark				\checkmark	
Verify PSet			\checkmark		\checkmark						\checkmark	
Clear Results			\checkmark				\checkmark				\checkmark	
Log Change			\checkmark		\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	
Decrement Batch	\checkmark	\checkmark	\checkmark							\checkmark	\checkmark	
Increment Batch		\checkmark	\checkmark								\checkmark	
Click Wrench			\checkmark								\checkmark	
Click Wrench NOK		\checkmark	\checkmark				\checkmark				\checkmark	
Bypass Stops											\checkmark	
Verify Job Sequence		\checkmark			\checkmark						\checkmark	
ASCII ID											\checkmark	
Abort Job		\checkmark		\checkmark								
Remote Start		\checkmark		\checkmark								
Remove Lock on Reject												
Dual Start Interlocked							\checkmark					
Decrement Job		√	√	√								
Increment Job							\checkmark	\checkmark				
Decrement PSet		\checkmark	√	√							\checkmark	
Increment PSet							\checkmark	\checkmark			\checkmark	
Decrement Job Sequence				\checkmark			\checkmark				\checkmark	
Increment Job Sequence							\checkmark	\checkmark			\checkmark	
Set Tool Home Position	\checkmark	$$	$$	√								

Polarity

When the polarity is set to N.O. the input is considered active high (24vdc for physical inputs and logic 1 for all network type buses). When the polarity is set to N.C. the input is considered active low (0vdc for physical inputs and logic 0 for all network type buses).

Width and Offset

For multiple bit inputs (for example "Select PSet") the width variable defines the number of bits the assignment will read for its input. This allows the input size to be restricted to a few bits saving space for other assignments.

The offset variable allows a fixed value to be added to the read value.

For example to use bits 4 & 5 of the physical inputs to select parameter sets 1-4 the assignment would look like...

Select PSe	Select PSet							
Bus	1	For the physical bus						
Element	0	For the first element on the bus						
Bit	4	For the starting bit location						
Width	2	To span the two bits 4 & 5						
Offset	1	Adding 1 to the read input value so we get Binary 00 = 1 Binary 01 = 2 Binary 10 = 3 Binary 11 = 4						

Input Assignments

Do Nothing	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C.	Width	Offset		
The "Do Nothing" assignment will run do nothing if it is active or inactive.								
Start	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset		
The "Start" o input is activ bus only.	-							
0	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset		
Stop		\checkmark		\checkmark				

Reverse	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset
The "Revers mode while					sassei	mbly
Disable	Bus √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset
The "Disable is active. It w progress.						t
Reset Job	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset
On the trans Job" assignment						set
Select PSet	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C.	Width √	Offset $$
After the inp added to th	ne vo	alue do				
Select Job	disc		tool.	Polarity N.O./N.C.		et
number will	disc Bus √ Job ro th imit m w put is	Element v input the wid idth is 1 s read the alue do	tool. Bit 0-32 will sele value. I th of th and the ne offse get the	Polarity N.O./N.C. Ct the job Jses the w e input bit e maximu et parame e actual jo	width √ numk vidth ts read m is 8 ter wi ob nur	offset √ ⊃cer d. II be mber.
number will Select Job The "Select according t parameter I The minimum After the inp added to the Selecting an	Bus √ Job o th imit m w but is bus √	Element V input the wid idth is 1 s read the alue do ralid job	bit 0-32 will sele value. I th of th and the ne offse get the number Bit 0-32 	Polarity N.O./N.C. Ct the job Jses the w e input bit e maximu et parame e actual jo er will disa	width numk vidth ts read m is 8 ter wi bb nur ble th	offset √ ⊃cer d. II be mber.

Disable Assembly	Bus Element $$	Bit 0-32 N.O./N.C. Width Offset $\sqrt{100}$	Set Date/ Time (wordBusElementBit 0-32Polarity N.O./N.C.WidthOrswap) $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$
tool in the tool in disa	assembly dir ssembly or tu	' assignment will disable the ection. It will not disable the ube nut homing. It w ill not that is progress.	The "Set Date/Time (word swap)" assignment is the same as the "Set Date/Time" assignment except the high and low words (16bit) are swapped prior to evaluation. This is to correct
Set ID	Bus Element	Polarity Bit 0-32 N.O./N.C. Width Offset	the mixed endianness of some PLC. See the "Se Date/Time" for behavior.
The "Set ID"		$\sqrt{1-1}$ will set the ID to an integer	Verify PSet Bus Element Bit 0-32 Polarity N.O./N.C. Width Or
		The width can be set from	
value and produced The length the assignn accommo	an ASCII strin and passed of the string i nent. The strir date the ma	Ilue will read as an integer g with leading zeros will be to the ID recognition system. s based on the width of ng will always be sized to ximum value of the input. tting of 16 can have an	The "Verify PSET" input will compare the current parameter set to the input value. Uses the width parameter limit the width of the input bits read. Th minimum width is 1 and the maximum is 8. After th input is read the offset parameter will be added to the value do get the actual parameter set number If the parameter set input value does not match the
integer valu	Je of 0-65535	5 so the produced ID would always five character long).	current parameter of the controller the tool will be disabled.
Width setting	Length of ID string	ID value	Clear Results Bus Element Bit 0-32 N.O./N.C. Width Or
1 - 3	1	"0" – "n" "00" – "nn"	The "Clear Results" assignment will clear the late
4 - 6	2	"000 – "nn "000" – "nnn"	results outputs (Ok, Nok, etc.) on the same bus.
10 - 13	4	"0000" – "nnnn"	
14 - 16	5	"00000" – "nnnnn"	Log Change Bus Element Bit 0-32 N.O./N.C. Width O
17 – 19	6	"000000" – "nnnnnn"	
20 - 23	7	"0000000" – "nnnnnnn"	The "Log Change" assignment will add entries to the controller event log when the input change
24 – 26	8	"00000000" – "nnnnnnn"	
27 – 29 30 - 32	9	"000000000" – "nnnnnnnnn" "0000000000" – "nnnnnnnnn"	Decrement Batch Bus Element Bit 0-32 Polarity N.O./N.C. Width O
Set ID (word swap The "Set ID	1000000000000000000000000000000000000	Bit 0-32 N.O./N.C. Width Offset √ 3 assignment is the same	The "Decrement Batch" assignment will remove the latest OK rundown from the current running JOB. This will cause the JOB count to be reduced by one.
low words This is to co	(16bit) are sv prrect the mix	ent except the high and vapped prior to evaluation. ked endianness of some	$\begin{array}{c c} \textbf{Increment} \\ \textbf{Bus} \\ \textbf{Bus} \\ \hline \\ \textbf{V} \\ \hline \\ \textbf{V} \\ \hline \\ \textbf{V} \\ \textbf{V} \\ \textbf{V} \\ \hline \\ \textbf{V} \\ $
Set Date/ Time	Bus Element $\sqrt{1-1}$	Polarity	The "Increment Batch" assignment will insert a manual rundown into the current sequence of the current JOB. This will cause the JOB count to increment by one.
and time of from 1 to 3 get the con as the num 1, 1970 (PC	If the control 2 bits but sho rrect results. Iber of secor DSIX time or E	signment will set the date ler. The width can be set ould always be set to 32 to The input value will be read nds since 00:00:00 January (poch time). If the input non-zero the date and	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
value char	nges and it is	poch time). It the input non-zero the date and ill be set to the new value.	

nd low words (16bit) are evaluation. This is to correct ness of some PLC. See the "Set havior. Polarity ement Bit 0-32 N.O./N.C. Width Offset $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ put will compare the current ne input value. Uses the width e width of the input bits read. The and the maximum is 8. After the fset parameter will be added to ne actual parameter set number. et input value does not match the of the controller the tool will be Polarity ement Bit 0-32 N.O./N.C. Width Offset $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ ' assignment will clear the latest , Nok, etc.) on the same bus. Polarity ement Bit 0-32 N.O./N.C. Width Offset $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ " assignment will add entries to nt log when the input changes. Polarity ement Bit 0-32 N.O./N.C. Width Offset $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ Batch" assignment will remove own from the current running e the JOB count to be reduced Polarity N.O./N.C. Width Offset ement Bit 0-32 $\sqrt{}$ $\sqrt{}$ $\sqrt{}$ tch" assignment will insert a nto the current sequence of is will cause the JOB count to Polarity N.O./N.C. Width Offset ement Bit 0-32 $\sqrt{}$ $\sqrt{}$ $\sqrt{}$

N.O./N.C. Width Offset

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Dual Start InterlockedBus ElementElementBit 0-32Polarity N.O./N.C.WidthOffset
The "Click Wrench NOK" assignment is the same as "Click Wrench," but the inserted manual rundown always reports a torque of 0.	The "Dual Start Interlocked" assignment will run the tool if the interlock conditions are met. Dual Start Interlock is available for the Physical IO bus only. The Dual Start Interlocked input works in combination
Bypass StopsBusElementBit 0-32Polarity N.O./N.C.WidthOffset	with the Physical input assigned to the 'Start' input. The Dual Start Interlocked is only available for iEC controllers.
The "Bypass Stops" assignment removes most stop conditions, allowing the tool to be ran in an override type condition. Hardware faults, stop and disable inputs are not removed.	 Setup Only 1 Start Input and 1 Dual Start Interlocked Input should be assigned. Controller->Tool Setup -> Start Input
Verify Job SequenceBus $$ Element $$ Bit 0-32 $$ Polarity N.O./N.C.Width $$ Offset $$	 Configuration: The Start Input Source Must be set to 'Start From IO'. Latching throttle is disabled for Dual
The "Verify Job Sequence" input will compare the current Job sequence to the input value. Uses the width a grameter limit the width of the input bits	Interlocked Start.
width parameter limit the width of the input bits read. The minimum width is 1 and the maximum is 8. After the input is read the offset parameter will be added to the value do get the actual Job sequence number. If the Job sequence input value does not match the current Job sequence of the controller the tool will be disabled.	 Dual Start Interlocked - Operation The tool will not run unless both inputs are activated within two seconds of each other. If the two second timer times out, both inputs must be deactivated to reset the timer. If either input is deactivated the tool stops. To restart the tool, both inputs must be
ASCII ID Bus Element Bit 0-32 Polarity N.O./N.C. Width Offset	deactivated then reactivated within two seconds of each other.
The "ASCII ID" assignment will set the ID to the of the input (ASCII) value. This assignment consumes the entire element so the Bit is not used. It also has a length parameter to set the length of the input in bytes. The input value will be passed directly to the ID recognition system.	 Tubenut Tool Homing Exceptions for Dual Start Interlocked functionality If controller's tubenut homing configuration is set to RELEASE: Deactivating either, or both, of the inputs will initiate the homing sequence. Homing will continue until sequence is
Abort JobBusElementBit 0-32Polarity N.O./N.C.WidthOffset $$ </td <td> complete. If controller's tubenut homing configuration is set to RELEASE AND REPRESS: </td>	 complete. If controller's tubenut homing configuration is set to RELEASE AND REPRESS:
The "Abort Job" assignment aborts the job and disables the tool. A job reset is required to enable the tool for the next job.	 Deactivating either of the inputs, then activating both inputs will initiate the homing sequence. Homing will continue while both inputs are active.
Remote StartBusElementBit 0-32Polarity N.O./N.C.WidthOffset $$	 If either input is deactivated, before homing is complete, the tool will stop, and homing will pause until both inputs are
The "Remote Start" assignment will run the tool while the input is active. Remote Start is available for non-physical I/O buses.	 reactivated. To restart tool, after homing is complete, both inputs must be deactivated, then reactivated within two seconds of each
Remove Lock on RejectBusElementBit 0-32Polarity N.O./N.C.WidthOffset	other.
The "Remove Lock on Reject" assignment unlocks the tool if locked on reject, re-enabling the tool.	

Decrement Job	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset	
The "Decrer the Job Nun decrementi	nber	, selecti	ng the l	ast job if	reme	nt	
Increment Job	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset	
The "Increment Job" assignment will increment the Job Number, selecting the first job if incrementing past the last one.							
Decrement PSet	B∪s √	Element	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset	
The "Decrer the PSet Nur decrementi	nbe	r, select	ing the	last PSet if	creme	ent	
Increment PSet	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset	
The "Increment PSet" assignment will increment the PSet Number, selecting the first PSet if incrementing past the last one.							
Decrement Job Sequence	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset	
The "Decrer decrement sequence if	the . dec	Job sequ rementi	Jence,	selecting t the first or	he las		
Increment Job Sequence		Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset	
The "Increm increment th incrementing	ne Jo	Job Seq ob sequ	uence" ence, se	assignme		job if	
Set Tool Home Position	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. √	Width	Offset	
The "Set Toc home positic This can be stage to brin position.	on to usec	o the too I in conji	ol's curre unction	ent angula with the H	r loca Ioming	tion. g	

Outputs

All output assignments have a Bus, Element, and Bit configuration to define its location in the system. Along with the basic configuration many also have other configuration(s) that allow its behavior to be modified to suit the application.

					Suppor	ted Fe	ature						C	ontro	oller	
					Mode			Offset	Input	Input	Input	ifC				iBC-Z
				Polarity	Normal,				BUS	Element						
			Bit	N.O./	Timed,											
	Bus	Element	0-32	N.C.	Flashed				ļ							
Ok		V	V	V	V									V		
Nok		√														
Torque Ok		\ √	$\sqrt{1}$	$\overline{\mathbf{v}}$	N N							$\sqrt{}$				$\sqrt{1}$
Torque Nok Low Torque		 √	N V	N N	N N							N N	N N		N V	$\sqrt{1}$
High Torque	V	V	V	V	V							V			V	
Angle Ok	$\overline{}$	V	V	V	V							V			V	
Angle Nok	Ń	V	Ń	Ń	Ń							Ń	Ń			Ń
Low Angle																
High Angle																
Fastening		\checkmark		\checkmark	\checkmark											
Complete															V	V
In Cycle																
Fastening Aborted		\ 	V	V	√										N	
Fastening Stopped		\ √	V	V	√ 							$\sqrt{\frac{1}{\sqrt{2}}}$	V			
Batch Complete Job Complete	$\frac{N}{}$	N N	$\sqrt{1}$	$\overline{\mathbf{v}}$	√							$\sqrt{1}$				
Error	N N	N V	N N	N N	N N							√	N N	 √	N N	$\sqrt{1}$
Tool Start Switch	V	V	V	V	V							V	Y	Y		Y
Tool Push to Start																
Switch		\checkmark		\checkmark	\checkmark											
Tool MFB																
Tool Enabled		V			V											
Tool Running																
Service Indicator	Ń	√													L	
ToolsNet			\checkmark	\checkmark	\checkmark											\checkmark
Connected															· ·	
Open Protocol		\checkmark	\checkmark	\checkmark	\checkmark											\checkmark
Connected PFCS Connected		V		V	V											
Running PSet				N	N											
Number		\checkmark					\checkmark	\checkmark								\checkmark
Running Job	,	,	,				,	,				,	,	,		,
Number		\checkmark					\checkmark	\checkmark								\checkmark
External Controlled										V						
Tool In CCW	Ń	Ń	Ń									Ń	Ń	Ń		
Tool In CW																
Torque																
Torque (x10)		V	V													
Torque (x100)	N	V											V			N
Angle Rundown Saved to		V														√
FTP Server	\checkmark	\checkmark	\checkmark				\checkmark						\checkmark	\checkmark		\checkmark
FIP Server Fastener Removed		√		V	N											
Spindle Ok	V	V										V	V	V		
Spindle NOk	$\sqrt{1}$	↓ v √	V	V	V							$\sqrt{\frac{1}{\sqrt{2}}}$				
Spindle Fastening	,			,	,							,				
Complete	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark											
Pulses																
Pulses High																
Pulses Low	N	V	V		N											
Pulses NOk																
Pulses Ok			V		√								V			
ON Jala Albertad		√			√							V			V	
Job Aborted		N N	$\sqrt{1}$	√	V											
Tool In Use Barcode Scanned	$\sqrt{\frac{1}{\sqrt{2}}}$	N V	N V	N V		V						$\sqrt{\frac{1}{\sqrt{2}}}$	N V	$\sqrt{\frac{1}{\sqrt{2}}}$	$\sqrt{\frac{N}{\sqrt{2}}}$	$\frac{N}{}$
Start Trigger Active	V	V	V	V								V	V	V	V	N
Bian ingger Active	V	N N	V	V								V				

Polarity

When the polarity is set to N.O. the output will be high when it is active (24vdc for physical outputs and logic 1 for all network type buses). When the polarity is set to N.C. the output will be low for active (0vdc for physical inputs and logic 0 for all network type buses).

Mode

Normal

In the "Normal" mode the output will track the state of the assignment (while still observing the polarity setting). If the polarity is set N.O. and the assignment has an active output the output will be on and stay on till the assignment goes to inactive.



Figure 1: Normal Mode

Timed

In the "Timed" mode the output will come on when the assignments state goes active and go off based on the time value or the assignment state going inactive (while still observing the polarity setting).



Figure 2 Timed Mode



Figure 3: Timed Mode (assignment deactivates before time expires)

Flash

In the "flash" mode the output will flash at the time rate while the assignments state is active (while still observing the polarity setting).



Figure 3 Flash Mode

Width and Offset

For multiple bit outputs (for example "Running PSet Number") the width variable defines the number of bits the assignment will output. This allows the output size to be restricted to a few bits saving space for other assignments.

The offset variable allows a fixed value to be added to the value before it is output.

For example to use bits 4 & 5 of the physical outputs to indicate the selected parameter set number 1-4 as binary 0-3 the assignment would look like...

Running PSet Number						
Bus	1	For the physical bus				
Element	0	For the first element on the bus				
Bit	4	For the starting bit location				
Width	2	To span the two bits 4 & 5				
Offset	-1	Adding -1 to the read input value so we get 1 = Binary 00 2 = Binary 01 3 = Binary 10 4 = Binary 11				

Output Assignments

01/	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal,	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
OK	√ tro	√ It assign	√ Mont 1	√ vill ac active a	$\frac{}{}$	tion of an	~~~~	ntab	la fact	oning It		hive a
	•	•		will go active a Irted (the torqu				•		•	will go inac	live
Nok	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
				will go active ning is started (
Torque Ok	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
				ment will go ac the next fastenii								
Torque Nok	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
	able	torque	value.	gnment will go It will go inactiv et.								е
Low Torque	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
			-	gnment will go o the next faster		•			<u> </u>		•	
High Torque	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
				nment will go c at fastening is sto								esults.
Angle Ok	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
-		-	-	ment will go ac when the next					-			
Angle Nok	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
	ts. It			nment will go o e when the nex								
Low Angle	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$	Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
				nment will go a xt fastening is s								
High Angle	\checkmark	\checkmark	\checkmark	Polarity N.O./N.C. $$	\checkmark							
				nment will go c fastening is sta								sults. It

he "Fastening Complete" output assignment will go active at the completion of a tastening, it will go active when the next fastening is started (the torque exceeds the threshold value) or a Job reset. a cycle Bus Element Bit 032 Polarity No./N.C. Made: Normal, Timed, Fash, Time Width Offset Input Bus Input Element Input B A v v v v v v v v v v v v v v v v v v	Fastening	B∪s √	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal, Time	d, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
A Cycle Bus Bernent Bit 0.32 Polarity N.O./N.C. Mode: Normal, Timed, Rish, Time, Width, Offset, Input Bus, Input Element, Input B he "In Cycle" output assignment will go active at the start of the fastening cycle (the torque exceeds the hreshold value). It will go inactive when the fastening cycle ands. Immed Width, Offset, Input Bus, Input Element, Input B aborted N <		ning											
In Cycle V V V he "In Cycle" output assignment will go active at the start of the fastening cycle (the torque exceeds the hreshold value). It will go inactive when the fastening cycle ends. ratening Bus Bement Bit 0-32 Polanty N.O./N.C. Made: Normal, Timed, Riash Time Width Offset Input Bus Input Bement Input B topted whe "Fastening Aborded" output assignment will go active at the completion of a fastening that was aborted by the system. It will go inactive when the next fastening is started (the forque exceeds the threshold value) or J ob reset. ratening Bus Bement Bit 0-32 Polanty N.O./N.C. Made: Normal, Timed, Riash Time Width Offset Input Bus Input Bement Input B topped d <td< td=""><td>inactive w</td><td>hen</td><td>the nex</td><td>t faster</td><td>ning is started (1</td><td>he torque excee</td><td>ds the t</td><td>thres</td><td>shold</td><td>value</td><td>) or a Jol</td><td>o reset.</td><td></td></td<>	inactive w	hen	the nex	t faster	ning is started (1	he torque excee	ds the t	thres	shold	value) or a Jol	o reset.	
hreshold value). If will go inactive when the fastening cycle ends. catening Bus [Bameni] Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Rash Time Width Offset Input Bus Input Berneni Input B Normal Input Box V V V V Normal Bus [Bameni] Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Rash Time Width Offset Input Bus Input Berneni Input B Normal Bus [Bameni] Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Rash Time Width Offset Input Bus Input Berneni Input B Stepped V V V V V he "Fastening Stopped" output assignment will go active at the completion of a fastening that was stopped by the use. If will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job sester. Stopped V V V V Participa Bus [Bament] Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Bash Time Width Offset Input Bus Input Bernent Input B Complete V	In Cycle	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 1	Time	Width	Offset	Input Bus	Input Element	Input Bit
Aborted V V V V V he "Fastening Aborted" output assignment will go active at the completion of a fastening that was aborted by the system. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset. catening Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Inpu	,		•	•	•			steni	ng cy	/cle (t	he torqu	e exceeds t	he
by the system. It will go inactive when the next fastening is started (the torque exceeds the threshold value) of a Job reset. datening Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus	Fastening Aborted		Element √	Bi† 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 🔤	Time	Width	Offset	Input Bus	Input Element	Input Bit
Hopped V V V he "Fastening Stopped" output assignment will go active at the completion of a fastening that was stopped by he user. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job eset. katch Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input Bus Input	by the syst	em.											
he user. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job eset. statch Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Bus Input Element Input Statisfies the polarity N.O./N.C. Complete V	Fastening Stopped		Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 1	Time	Width	Offset	Input Bus	Input Element	Input Bit
Complete $\sqrt{1}$ \sqrt													
bolt count of a Job sequence. It will go inactive when the next fastening is started (the forque exceeds the hreshold value) or the job is reset. Input Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input B Complete $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ he "Job Complete" output assignment will go active at the completion of a fastening that satisfies all the equences. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or he job is reset. Error Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input B the "Error" output assignment will be active while the controller has an error. Col Start Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input B witch $\sqrt{1}$ \sqrt	Batch Complete		Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 1	Time	Width	Offset	Input Bus	Input Element	Input Bit
Complete $\sqrt{1}$ \sqrt	bolt count	of a	Job see	quence	e. It will go inac								
equences. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or he job is reset. From Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input B v v v v v v v v v v v v v v v v v v v	Job Complete		Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 1	Time	Width	Offset	Input Bus	Input Element	Input Bit
Interfor V V V V V in the "Error" output assignment will be active while the controller has an error. in the "Error" output assignment will be active while the controller has an error. in the "Error" output assignment will be active while the controller has an error. in the "Tool Start Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input B in the "Tool Start Switch" output assignment will reflect the state of the tools start lever. in the "Tool Push to Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input B in the "Tool Push to Start Switch" output assignment will reflect the state of the tools push to start switch. in the "Tool Push to Start Switch" output assignment will reflect the state of the tools push to start switch. in the "Tool Push to Start Switch" output assignment will reflect the state of the tools push to start switch. in the "Tool Push to Start Switch" output assignment will reflect the state of the tools push to start switch. in the "Tool MFB" Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input Bu in the "Tool MFB" Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input Bu in the "Tool MFB" Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offse	sequences	s. It v	vill go in										
Cool Start SwitchBus VElement VBit 0-32 VPolarity N.O./N.C. VMode: Normal, Timed, Flash VTime WidthWidth OffsetInput Bus Input BusInput Element Input ElementInput Element Input BusSwitchVVVVVVVthe "Tool Start Switch" output assignment will reflect the state of the tools start lever.Sol Push to Start SwitchBus VElement VBit 0-32 VPolarity N.O./N.C. VMode: Normal, Timed, Flash VTime VWidth VOffset Input Bus VInput Element Input ElementStart SwitchVVVVVVThe "Tool Push to Start Switch" output assignment will reflect the state of the tools push to start switch.Sol MFBBus VElement VBit 0-32 VPolarity N.O./N.C. VMode: Normal, Timed, Flash VTime VWidth VOffset Input Bus Input Element Input ElementSol MFBBus VElement VBit 0-32 VPolarity N.O./N.C. VMode: Normal, Timed, Flash VTime VWidth VOffset Input Bus Input ElementInput Element Input Bus VSolBus Element VBit 0-32 VPolarity N.O./N.C. VMode: Normal, Timed, Flash VTime VWidth VOffset Input Bus Input Element Input Element VSolBus VVVVVVVVSolBus VVVV	Error	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 🔤	Time	Width	Offset	Input Bus	Input Element	Input Bi
Switch J <td>The "Error"</td> <td>' outp</td> <td>out assig</td> <td>gnmen</td> <td>t will be active</td> <td>while the control</td> <td>ler has a</td> <td>an e</td> <td>rror.</td> <td></td> <td></td> <td></td> <td></td>	The "Error"	' outp	out assig	gnmen	t will be active	while the control	ler has a	an e	rror.				
Cool Push to Bus Element $\sqrt{1}$ Bit 0-32 $\sqrt{1}$ Polarity N.O./N.C. $\sqrt{1}$ Mode: Normal, Timed, Flash $\sqrt{1}$ Time WidthWidth Offset Input Bus 	Tool Start Switch	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 1	Time	Width	Offset	Input Bus	Input Element	Input Bit
Start Switch V <t< td=""><td>The "Tool S</td><td>Start</td><td>Switch"</td><td>output</td><td>t assignment wi</td><td>Il reflect the state</td><td>of the</td><td>tool</td><td>s star</td><td>lever</td><td></td><td></td><td></td></t<>	The "Tool S	Start	Switch"	output	t assignment wi	Il reflect the state	of the	tool	s star	lever			
Cool MFBBus $$ Element $$ Bit 0-32 $$ Polarity N.O./N.C. $$ Mode: Normal, Timed, Flash $$ Time $$ Width $$ Offset $$ Input Bus Input Element Input Element Input EThe "Tool MFB" output assignment will reflect the state of the tools multifunction button.Bus Element 	Tool Push to Start Switch		Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $$	d, Flash 1	Time	Width	Offset	Input Bus	Input Element	Input Bit
OOLMFB V <td>The "Tool F</td> <td>Push</td> <td>to Start</td> <td>Switch</td> <td>" output assign</td> <td>ment will reflect t</td> <td>he state</td> <td>e of</td> <td>the to</td> <td>ools pi</td> <td>ush to sto</td> <td>art switch.</td> <td></td>	The "Tool F	Push	to Start	Switch	" output assign	ment will reflect t	he state	e of	the to	ools pi	ush to sto	art switch.	
The "Tool MFB" output assignment will reflect the state of the tools multifunction button. Bus Element Bit 0-32 Polarity N.O./N.C. Mode: Normal, Timed, Flash Time Width Offset Input Bus Input Element Input B Enabled $\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{$	Tool MFB		Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Time $\sqrt[]{}$	d, Flash 1	Time	Width	Offset	Input Bus	Input Element	Input Bit
nabled $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$ $\sqrt{1}$	The "Tool N		output	assignr	ment will reflec	t the state of the	tools m	ultifu	unctic	on but	ton.	1	
	Tool Enabled		Element √	,	Polarity N.O./N.C. √	Mode: Normal, Time $$	d, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
			led" ou		signment will b	e active if the too	ol is ena	blec	d.			1	

Tool Running	Bus √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Tir $$	ned, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
The "Tool R	ใบทท	ing" ou	tput as	signment will be	e active while t	he tool is	runr	ning.			<u>.</u>	
Service Indicator	Bus √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Tir $$	ned, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
The "Servic	e In	dicator'	' outpu	ut assignment w	vill be active if t	he syster	n is ir	n nee	d of se	ervice.		
ToolsNet Connected	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Tir $$	ned, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
The "ToolsN ToolsNet se			ted" o	utput assignme	nt will be active	e if the co	ontro	oller h	as an	active co	onnection t	ра
Open Protocol	B∪s √	Element	Bit 0-32	Polarity N.O./N.C. √	Mode: Normal, Tir √	ned, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
Connected The "Open	ľ.			ted" output ass	•	e active if	f the	 contr	roller h	nas an ac	tive Open	
protocol c					0						·	
PFCS Connected	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Tir $$	ned, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
The "PFCS	Cor	inected	" outpi	ut assignment v	vill be active if	the contr	oller	has c	an act	ive PFCS	connectior	1.
Running PSet	B∪s √	Element	Bit 0-32 √	Polarity N.O./N.C.	Mode: Normal, Tir	ned, Flash	Time	Width √	Offset √	Input Bus	Input Element	Input Bit
Number The "Runni	ng F	'Set Nur	nber" a	output assignme	ent will output t	he curre	nt PS	iet nu	mber.			
Running	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal, Tir	ned, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
Job Number	\checkmark		\checkmark					\checkmark	\checkmark			
The "Runni	ng J	ob Num	nber" o	output assignme	ent will output t	he currer	nt Jo	b nun	nber.			
External Controlled	B∪s √	Element √	Bit 0-32 √	Polarity N.O./N.C.	Mode: Normal, Tir	ned, Flash	Time	Width	Offset	Input Bus $$	Input Element $$	Input Bit √
				put assignment pecify the inpu		state of	an ir	iput. l	Jse the	e "Input I	Bus, "Input	
Tool in CCW	B∪s √	Element	Bit 0-32	Polarity N.O./N.C. $$	Mode: Normal, Tir	ned, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
The "Tool Ir tool is in as			-	ignment will be	e active if the to	pol is put	into	disass	sembly	/ mode c	and inactive	if the
							Time e		Offeet			
Tool in CW	\checkmark	\checkmark	\checkmark	Polarity N.O./N.C. √	\checkmark							
The "Tool Ir into disasse				nment will be c	active when the	e is in ass	emb	ly mo	de an	id inactiv	e if the tool	is put
Torque	Bus √	Element √	Bit 0-32 √	Polarity N.O./N.C.	Mode: Normal, Tir	ned, Flash	Time	Width √	Offset	Input Bus	Input Element	Input Bit
recent rund value of th	dow e se	n. If a sp lected s	becific stage. I	ne "Torque" out Stage is selecte In both cases, t the fastening c	ed, the "Torque he value will be	" output e clearec	assig to C	gnme) at th	nt will ne star	output th t of a nev	ne final torq w fastening	ue cycle

Torque Bus I	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal,	. Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
(x10) √ If Stage Default	√ is selec	√ ted, th	ne "Torque (x10)" output ass	ianment w	rill ou	√ t tuqt	he fina	al torque	value of the	e
most recent run	down. I	f a spe	ecific Stage is s	elected, the	"Torque (x1	10)" (outpu	t assig	nment w	vill output the	e
final torque valu fastening cycle	or a Jo	b reset	t. At the end o								~~
truncated to an	intege	r and o	output.								
	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal,	. Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
(x100) √ If Stage Default	$\frac{v}{\text{is selec}}$	ted, th	ne "Torque (x10	0)" output a	ssignment	vill o	 utput	the fir	nal torqu	e value of th	ne
most recent run final torque valu	down. I	f a spe	ecific Stage is s	elected, the	"Torque (x	100)"	outp	ut ass	ignment	will output tl	ne
fastening cycle	or a Jo	b reset	t. At the end o								
truncated to an	intege	r and o	output.								
	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal,	. Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
If Stage Default	is selec	ted, th	ne "Angle" out	ut assignme	ent will outp	out th	e finc	l angl	e value (of the most r	ecent
rundown. If a sp the selected sta		<u> </u>		. .	•			•		•	
reset.	igo. in c							ano	W lastern	ng cyclo of	
Rundown Bus I	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal,	. Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
Saved to FTP Server √	\checkmark	\checkmark					\checkmark				
The "Rundown S		o FTP S	Server" output	assignment v	vill output th	ne ID	of th	e last	rundown	that was so	ved
to the FTP server											
FastenerB∪sRemoved√	Element √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, $$. Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
The "Fastener Re											
controller must k fastening is start		•						vili go	Inactive	when the he	ext
Bus	Flement	Bit 0-32	Polarity N.O./N.C.	Mode: Normal	Timed Flash	Time	Width	Offset	Input Rus	Input Flement	Innut Bit
Spindle OK $\sqrt{1000}$	√	√	√ V	√		mine	Main	Oliser			
The "Spindle Ok' an OK. It will go i	•	•	•		•		•		•	•	
Spindle Bus	Floment	Bit 0-32	Polarity N.O./N.C.	Mode: Normal	Timed Elash	Time	Width	Offsat	Input Bus	Input Flement	Input Bit
SpindleBusNOk√	√	√ √	1 oldiny N.O./N.C. √	√	, nimea, nasn	IIIIe	WIGHT	Olisei			
The "Spindle NC more of the spir											
the threshold vo						10,510	211119				0 0.0
Spindle Bus I	Element	Bit 0-32	Polarity N.O./N.C.	Mode: Normal,	. Timed, Flash	Time	Width	Offset	Input Bus	Input Element	Input Bit
Fastening Complete √	\checkmark	\checkmark		\checkmark							
The "Spindle Fas											
It will go inactive	when	the ne	xt tastening is s	tarted (the to	orque excee	eds ti	ne thr	esholo	d value) d	or a Job rese	t.
Pulses	Element $$	Bit 0-32 √	Polarity N.O./N.C.	Mode: Normal,	. Timed, Flash	Time	Width √	Offset	Input Bus	Input Element	Input Bit
The "Pulses" out							nost r	ecent	rundow	n. The value	will
be cleared to 0	at the s	start of	t a new fasteni	ng cycle or c	a Job reset.						

Pulses High	Bus Element $$	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Timed, Flash $$	Time	Width	Offset	Input Bus	Input Element	Input Bit
	ds the high	limit. It	will go inactive	active at the completic when the next fastenir						
Pulses Low	Bus Element $$	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Timed, Flash $$	Time	Width	Offset	Input Bus	Input Element	Input Bit
	elow the lov	v limit. I	t will go inactiv	active at the completio e when the next fasten						
Pulses NOk	Bus Element $$	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Timed, Flash $$	Time	Width	Offset	Input Bus	Input Element	Input Bit
				ve at the completion of ng is started (the torque						
Pulses Ok	Bus Element $\sqrt{1-1}$	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Timed, Flash $$	Time	Width	Offset	Input Bus	Input Element	Input Bit
		0	0	ctive at the completion of astening is started (the to			0			
ON	Bus Element √ √	Bit 0-32 √	Polarity N.O./N.C. $$	Mode: Normal, Timed, Flash $$	Time	Width	Offset	Input Bus	Input Element	Input Bit
	$\sqrt{\sqrt{1-1}}$	\checkmark		Mode: Normal, Timed, Flash $\sqrt[]{}$						
The "ON" o	√ √ utput assigr	√ Iment v	vill be active wh	\checkmark	ered	up an	d rem	ains activ	e until powe	er
The "ON" o down. Job Aborted	√ √ utput assign Bus Element √ √	√ Iment v Bit 0-32 √	$\sqrt[]{ill be active wh}$ Polarity N.O./N.C. $\sqrt[]{}$	en the controller is powe	Time	up an Width	d rem Offset	ains activ Input Bus	re until powe	er Input Bit
The "ON" o down. Job Aborted	 √ √ utput assign Bus Element √ √ borted" ou 	√ Iment w Bit 0-32 √ tput as	 vill be active wh Polarity N.O./N.C. signment will go	hen the controller is powe Mode: Normal, Timed, Flash 	Time	up an Width t will ç	d rem Offset go ina	ains activ Input Bus ctive wh	re until powe	Input Bit
The "ON" o down. Job Aborted The "Job A Tool In Use The "Tool In	$\begin{array}{c c c c c c c } \sqrt{\sqrt{2}} & \sqrt{2} \\ \hline & & & & \\ \hline & & & & \\ \hline & & & & \\ \hline & & & &$	√ ment v Bit 0-32 √ tput as: bit 0-32 √ ut assig	 vill be active wh Polarity N.O./N.C. signment will go Polarity N.O./N.C. nment will go c	nen the controller is power Mode: Normal, Timed, Flash o active if a Job is abor	Time Time ted. I	Width t will (Width essed,	d rem Offset go ina Offset where	ains activ Input Bus ctive wh Input Bus eupon a	re until powe Input Element en the job is	Input Bit s reset.
The "ON" o down. Job Aborted The "Job A Tool In Use The "Tool In	√ √ utput assign Bus Element √ √ borted" ou Bus Element √ √ bus Element √ √ bus Element √ √ bus Element √ √ use" output tive when t	v ment v Bit 0-32 √ tput as: bit 0-32 √ ut assig he spe	√ vill be active wh Polarity N.O./N.C. √ signment will go Polarity N.O./N.C. √ nment will go c cified time is re	√ nen the controller is powe Mode: Normal, Timed, Flash √ Do active if a Job is abor Mode: Normal, Timed, Flash active when the trigger	Time ted. I Time √ is pre	Width t will (Width essed, ctive	d rem Offset go ina Offset where in bet	ains activ Input Bus ctive wh Input Bus eupon a ween.	re until powe Input Element en the job is Input Element timer will res	Input Bit s reset. Input Bit start. It
The "ON" o down. Job Aborted The "Job A Tool In Use The "Tool In will go inact Barcode Scanned The "Barco activate th	√ √ utput assign Bus Element √ √ borted" ou Bus Element √ √ n Use" output tive when t Bus Element √ √ a Use "output tive when t de Scanne e corresponde	viment v Bit 0-32 √ tput as: Bit 0-32 √ ut assig he spe Bit 0-32 √ ut assig he spe d'' outp nding b	 vill be active wh Polarity N.O./N.C. signment will go Polarity N.O./N.C. nment will go c cified time is re Polarity N.O./N.C. polarity N.O./N.C. polarity n.O./N.C. 	√ nen the controller is power Mode: Normal, Timed, Flash √ D active if a Job is abor Mode: Normal, Timed, Flash active when the trigger ached without becomi	Time Time ted. I Time √ is pre ng a Time Darco	Width t will (Width essed, ctive Width ode is figure	d rem Offset go ina Offset where in bet Offset scanr d. The	ains activ Input Bus ctive wh Input Bus eupon a ween. Input Bus ned. The l	re until powe Input Element en the job is Input Element timer will res Input Element D # (1-4) wi um size is 4 b	Input Bit s reset. Input Bit start. It Input Bit
The "ON" o down. Job Aborted The "Job A Tool In Use The "Tool In will go inact Barcode Scanned The "Barco activate th	$$ Utput assignBusBusElement $$ $$ Duse" outputtive when the second	√ Bit 0-32 √ tput assig bit 0-32 √ ut assig bit 0-32 √ ut assig bit 0-32 √ ut assig bit 0-32 √ d'' outp nding b en a to	 vill be active where $$ Polarity N.O./N.C. signment will go a cified time is reprised time is reprised time is reprised to a signment of the	√ nen the controller is power Mode: Normal, Timed, Flash √ D active if a Job is abor Mode: Normal, Timed, Flash active when the trigger ached without becomi Mode: Normal, Timed, Flash will go active when a k od by the number of bits	Time Time ted. I Time √ is pre ng a Time Time con rundo	Width t will (Width ctive i Width ode is figure own c	d rem Offset go ina Offset where in bet Offset scanr d. The or whe	ains activ Input Bus ctive wh Input Bus eupon a ween. Input Bus eed. The l e maximu en they a	re until powe Input Element en the job is Input Element timer will res Input Element D # (1-4) wi um size is 4 b re reset.	Input Bit s reset. Input Bit start. It Input Bit Il its. All

Possible Start Inputs include:

- Start from IO
 - Start

- Start from Tool Buttons
- Dual Start Interlocked
- Lever and/or PTS
 - Dual Levers Interlocked
 - Start from Master Tool

 - Start from Remote Start
 - Latched Throttle
- Start Trigger Active is available for the iEC Controller Only.



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