

AcraDyne iAC4EGV-T Assignable I O Gen IV ACE iAC **Controller Instructions**

Home » AcraDyne » AcraDyne iAC4EGV-T Assignable I O Gen IV ACE iAC Controller Instructions





Contents

- 1 AcraDyne iAC4EGV-T Assignable I O Gen IV ACE iAC Controller
- 2 Assignable I/O
- **3 Polarity**
- 4 Width and Offset
- **5 Input Assignments**
- 6 Outputs
- 7 Polarity
- 8 Mode
- **9 Output Assignments**
- 10 Documents / Resources
 - 10.1 References
- 11 Related Posts

AcraDyne iAC4EGV-T Assignable I O Gen IV ACE iAC Controller



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.

	Supported Feature		Controllers	

	Bus	Eleme nt	Bit 0-3	Polarity N. O./N.C.	Widt h	Offse t	iEC	iAC	iP C	iB C	iBC-
Do Nothing	√	V	V				V	V	V	1	V
Start	√	V	√	1			V				
Stop	√	V	V	V			V	V	1	1	
Reverse	√	V	V	V			V				
Disable	V	V	V	V			1	1	√		
Reset Job	√	V	V	V			V	V	V	1	V
Select PSet	V	\	V		√	√	V	V	1	1	
Select Job	V	\	V		√	√	V	V	1	1	\ \ \
Select Job Sequence	\ \ \	\	V		√	V	V	V	1	1	\ \ \
Disable Assembly	1	1	V	V			1				
Set ID	1	1	V		V		1	1	1	1	V
Set ID (word swap)	1	1	V		V		V	V	V	1	V
Set Date/Time	V	V	V		V		V	V	V	1	V
Set Date/Time (word swap)	V	V	V		V		V	V	1	V	V
Verify PSet	√	√	√		√	V	1	1	1	1	√

Clear Results	√	V	√	V			V	V	√	√	√
Log Change	√	1	V		V	V	V	V	√	√	√
Decrement Batch	√	V	V	V			1	1	√	1	V
Increment Batch	V	V	V	V			V	V	√	V	√
Click Wrench	√	1	√	V			√	V	√	V	√
Bypass Stops	V	V	V	V			V	V	√	V	√
Verify Job Sequence	V	V	V		V	V	V	V	√	V	√
ASCII ID	√	V					√	V	√	V	√
Abort Job	√	1	√	V			√	V	√	V	
Remote Start	√	V	√	V			√				
Remove Lock on Reject	√	V	√	V			√	V	1	V	
Dual Start Interlocked	√	V	√	V			√				
Decrement Job	√	V	√	V			√	V	1	√	√
Increment Job	√	V	√	V			√	V	V	√	√
Decrement PSet	√	V	√	V			√	V	1	V	√
Increment PSet	√	V	√	V			√	V	√	√	√
Decrement Job Sequence	V	V	V	V			1	1	V	V	V

Increment Job Sequence	\	1	1	V			1	1	√	1	√	
------------------------	----------	---	---	---	--	--	---	---	----------	---	----------	--

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 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	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	V	√			
The "Do Nothing" assig	nment will	run do nothing	if it is active or	inactive.		
Start	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	V	√	√		
The "Start" assignment	t will run the	tool while the i	input is active.	Start is available for the	Physical	I/O bus only
Stop	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	√	√	√		
The "Stop" assignment	will stop th	e tool if it is run	ning and preve	ent it from being started.		+

Reverse	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	√	V	√	$\sqrt{}$		

The "Reverse" will put the controller in disassembly mode while the input is active.

Disable	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	√	V	V		

The "Disable" will disable the tool while the input is active. It will not stop a fastening cycle that is progress.

Reset Job	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	V	V	V		

On the transition of inactive to active the "Reset Job" assignment will reset the active job.

Select PSet	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	V	V			V

The "Select PSET" input will select the parameter set according to the input value. Uses the width parameter lim it 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 parameter set number. S electing an invalid parameter set number will disable the tool.

Select Job	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	V	V		V	V

The "Select Job" input will select the job number according to the input value. Uses the 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 number. Selecting an invalid job number will disable the tool.

Bus Element Bit 0-32 Polarity N.O./N.C. Width Offset Select Job Sequence
--

|--|

The "Select Job Sequence" input will select the job sequence number according to the input value. Uses the wi dth parameter limit the width of the input bits read. The minimum width is 1 and the maximum is 8. After the input ut is read the offset parameter will be added to the value do get the actual job sequence number. Selecting an invalid

job sequence number or a sequence that is already complete will disable the tool.

Disable A ssembly	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t
			√			

The "Disable Assembly" assignment will disa ble the tool in the assembly direction. It will n ot disable the tool in disassembly or tube nut homing. It will not stop a fastening cycle that is progress.

Set ID	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t
		√	√		√	

The "Set ID" assignment will set the ID to an i nteger value of the input value. The width can be set from 1 to 32 bits. The input value will read as an integer value and an ASCII string with leading zeros will be produced and passed to the ID recognition system.

The length of the string is based on the width of the assignment. The string will always be sized to accommodate the maximum value of the input. For example a width setting of 16 can have an integer value of 0-65535 so the produced ID would

be "00000" to "65535" (always five character long).

Width Length of

Set Dat e/ Time (word s wap)	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t	
	1	√			$\sqrt{}$		

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

the mixed endianness of some PLC. See the "Set Date/Time" for behavior.

Verify P Set	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t	
	1	1	√		1	√	

The "Verify PSET" input will compare the cu rrent parameter set to the input value. Uses the width parameter limit the width of the in put bits read. The minimum width is 1 and t he maximum is 8. After the input is read the offset parameter will be added to the value do get the actual parameter set number. If t he parameter set input value does not match the current parameter of the controller the tool will be disabled.

setting	ID	string ID value
1 – 3	1	"0" — "n"
4 – 6	2	"00" – "nn"
7 – 9	3	"000" – "nnn"
10 – 13	4	"0000" – "nnnn"
14 – 16	5	"00000" — "nnnnn"
17 – 19	6	"000000" — "nnnnnn"
20 – 23	7	"0000000" – "nnnnnnn
24 – 26	8	"0000000" — "nnnnnnn"
27 – 29	9	"00000000" — "nnnnnnnn"
30 – 32	10	"0000000000" – "nnnn nnnnnn"
	1	1

Set ID (w ord swap	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t
	√		√		√	

The "Set ID (word swap)" assignment is the s ame as the "Set ID" assignment except the hi gh and low words (16bit) are swapped prior t o evaluation. This is to correct the mixed end ianness of some PLC. See the "Set ID" for behavior.

Set Date/ Time	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t

Clear R esults	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t	
	V	V	V	√			
The "Clea			-				
	resu	lts out	-				
he latest i	resu bus.	Its out	puts (C	Polari ty N.	etc.)	on t	
he latest i	resu bus.	lts out	puts (C	Ok, Nok, Polari	etc.)	on t	

ies to the controller event log when the inpu t changes.

Decr ent E ch	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t	
	√	√	√	√			

The "Decrement Batch" assignment will re move the latest OK rundown from the curre nt running JOB. This will cause the JOB co unt to be reduced by one.

Increme nt Batc h	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W idt h	Of fse t	
	1	√	V	√			

The "Increment Batch" assignment will inse rt a manual rundown into the current seque nce of the current JOB. This will cause the JOB count to increment by one.

	V	1 1	√		1									
The "Set date and can be set to nput value seconds so OSIX time changes a	time t fro 32 will since or and	e of the om 1 to to get Il be re e 00:00 Epoch it is no	control 32 bit the co ad as 0:00 Ja time).	oller. The state of the numer anuary 1. If the date of	e wid ould sults ber o , 197 put v	th alway The i of 70 (P value d time	Click W rench $\begin{vmatrix} B & Ele \\ u & me \\ s & nt \end{vmatrix} = \begin{vmatrix} Blt & ty N. & W & Or \\ 0-3 & O./N. & idt & fset \\ C. & h & t \end{vmatrix}$ The "Click Wrench" assignment is the same					fse		
of the cor	itroll	er will	be set	to the n	ew v	alue.	e as "Increment Batch" with the addition of a programmable torque value.							
Bypass Stops	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W id th	Of fse t	Dual St u me 0-3 O./N. id fse art Inter locked s nt 2 C. th t							
	1	1	1	√					√	√	√	√		
wost stop e ran in a override t op and dis Verify J ob Sequen ce	n ype	condit	ion. Ha	ardware	fault	s, st	met. Dual Start Interlock is available for the Physical IO bus only. The Dual Start Interlocked input works in combination with the Physical input assigned to the 'Start' input. The Dual Start Interlocked is only available for the interlocked is only available for the interlocked input assigned to the 'Start' input. The Dual Start Interlocked is only available for the interlocked in interlocked in interlocked in interlocked in interlocked in interlocked in interlock conditions are interlocked in interlock conditions are interlock conditions are interlock conditions are interlock conditions are interlocked in interlock conditions are interlocked in interlock conditions are interlocked in interlock in available for the interlocked in interlocked in interlocked in interlock is available for the interlocked in interlocked interlocked in interlocked interlocke							
The "Verificompare input value he width on width is is 8. After eter will be ctual Job uence input Job see ill be disa	the of the state according to the state accor	current ses the end input dided to uence alue of	t Job se width t bits reaction the value of	sequence on parame ead. The mum If the offs alue do ger. If the of match	e to teter lie mine et paget the Job the control of	aram ne a seq curre	 Only 1 Start Input and 1 Dual Start Interlocked Input should be assigned. Controller->Tool Setup -> Start Input Configuration: The Start Input Source Must be set to 'S tart From IO'. Latching throttle is disabled for Dual Interlocked Start. 							
ASCII I D	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W id th	Of fse t	• ar	ual Start The too re activate er.	l wi	ill not r	un un	ess both	-	- 1

	V	V					If the two second timer times out, both i nputs must be deactivated to reset the time	
The "ASC the of the assignme o the Bit is rameter to es. The in o the ID re	inpu nt co s no sei put	ut (ASConsum t used t the le	CII) values the literal the li	lue. This entire e o has a l of the inp passed	leme engt ut in	ent s h pa byt	 r. If either input is deactivated the tool stops. To restart the tool, both inputs must be deactivated then reactivated within two seconds of each other. 	
Abort J ob	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W id th	Of fse t	Tubenut Tool Homing Exceptions for Dual S tart Interlocked functionality If controller's tubenut homing configuration is	
The "Abor and disab d to enabl	les 1	the too	ıl. A jol	b reset is	s req	- 1	set to RELEASE: O Deactivating either, or both, of the input s will initiate the homing sequence.	
Remote Start	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W id th	Of fse t	 Homing will continue until sequence is complete. If controller's tubenut homing configuration is set to RELEASE AND REPRESS: Deactivating either of the inputs, then 	
The "Rem tool while s available	the	input i	s activ	e. Remo	te S		activating both inputs will initiate the homin g sequence. O Homing will continue while both inputs a	
Remove Lock on Reject	B u s	Ele me nt	Bit 0-3 2	Polari ty N. O./N. C.	W id th	Of fse t	re active. If either input is deactivated, before homing is complete, the tool will stop, and homing will pause until both inputs are reactivated. To restart tool, after homing is complete,	
The "Rem unlocks th	e to		-		-	I .	both inputs must be deactivated, then react ivated within two seconds of each other.	

Decrement Job	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	V	√		V		

The "Decrement Job" assignment will decrement the Job Number, selecting the last job if decrementing past the first one.									
Increment Job	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset			
	√	V	V	V					
The "Increment Job" assig ast one.	gnment w	ill increment the	Job Number, se	electing the first job if	incrementir	ng past the I			
Decrement PSet	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset			
	V	V	V	V					
The "Decrement PSet" as t the first one.	signment	will decrement t	the PSet Numbe	er, selecting the last F	Set if decre	ementing pas			
Increment PSet	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset			
	√	V	V	√					
The "Increment PSet" ass he last one.	ignment v	will increment the	e PSet Number,	selecting the first PS	set if increm	enting past t			
Decrement Job Sequence	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset			

V	V	√	V	

The "Decrement Job Sequence" assignment will decrement the Job sequence, selecting the last job sequence if decrementing past the first one.

Increment Job Sequen	Bus	Element	Bit 0-32	Polarity N.O./N.C.	Width	Offset
	√		\checkmark	\checkmark		

The "Increment Job Sequence" assignment will increment the Job sequence, selecting the first job if incrementing past the last one.

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.

					Support e	ted F	eatur						Coi	ntroll	er	
						Ti m e	Wid th	Offs et	Inp ut Bus	Input Eleme nt	Inp ut Bit	iE C	iA C	iP C	iB C	iBC -Z
					Mode Norm al, Ti											
	B u s	Elem ent	Bit 0- 32	Polar ity N. O./ N.C.	med, Flashe d											
Ok	√	V	√	V	V							V	V	V	√	V

Nok	1	V	1	√	V				V	1	1	V	V
Torque Ok	1	√	V	√	√				√	√	V	V	√
Torque Nok	1	V	1	V	√				√	√	V	V	V
Low Torque	1	V	1	V	V				√	√	V	V	V
High Torque	1	V	1	V	√				√	√	V	V	V
Angle Ok	1	√	1	1	V				√	√	V	V	V
Angle Nok	1	V	V	V	√				V	V	V	V	V
Low Angle	1	V	V	V	√				V	V	V	V	V
High Angle	1	√	1	1	V				√	√	V	√	V
Fastening Complete	1	V	V	V	V				V	V	V	√	√
In Cycle	1	V	1	√	√				√	√	V		
Fastening Abort ed	1	V	√	√	V				√	√	√	√	V
Fastening Stop ped	1	V	V	√	V				V	V	√	V	√
Batch Complet e	1	V	V	√	1				√	√	V	√	V

Job Complete	1	√	√	√	√				V	V	1	V	V
Error	1	√	V	V	√				√	V	√	1	V
Tool Start Switc	1	V	1	√	V				V				
Tool Push to St art Switch	1	V	V	V	V				V				
Tool MFB	1	V	V	√	√				√				
Tool Enabled	1	√	1	√	√				√	√	√	√	V
Tool Running	1	V	V	V	√				√				
Service Indicat or	V	V	V	√	V				√	√	√		V
ToolsNet Connected	1	V	√	V	V				V	V	√	V	√ ·
Open Protocol Connected	1	V	V	V	V				V	V	V	V	V
PFCS Connect ed	V	1	V	√	V				V	V	V	V	V

Running PSet Number	V	V	√			V	V				V	√	V	V	V
Running Job Number	V	√	√			V	√				1	1	√	√	V
External Contro Iled	1	V	V					V	1	√	√	V	V	√	V
Tool In CCW	1	√	V	V	√						V				
Tool In CW	1	V	1	√	√						√				
Torque	1	√	V			1					√	V	V	√	√
Torque (x10)	1	√	V			√					V	V	1	√	√
Torque (x100)	1	√	V			√					V	V	1	√	√
Angle	1	√	V			√					V	V	1	√	√
Rundown Save d to FTP Server	V	V	V			V					1	V	V	1	V
Fastener Remo ved	V	V	V	√	1						√	√	V		
Spindle Ok	1	√	V	√	√						√				
Spindle NOk	1	1	1	V	V						√				

Spindle Fasteni ng Complete	1	V	V	V	V					V				
Pulses	1	V	V				√				V	V		V
Pulses High	1	V	V	V	V						1	V		V
Pulses Low	1	V	V	V	V						√	V		V
Pulses NOk	1	V	√	√	V						V	V		√
Pulses Ok	1	V	√	√	V						V	V		V
ON	1	V	1	V	V					1	√	1	√	V
Job Aborted	1	V	V	V	V					√	V	1	1	
Tool In Use	1	√	√	√		√				√	√	V	√	√
Barcode Scann ed	1	V	1	√						V	V	V	V	V
Start Trigger Ac tive	1	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.

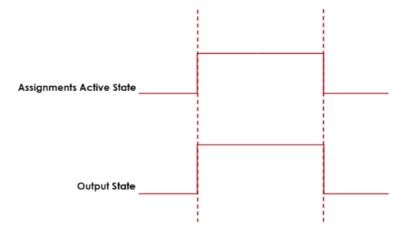


Figure 1: Normal Mode

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).

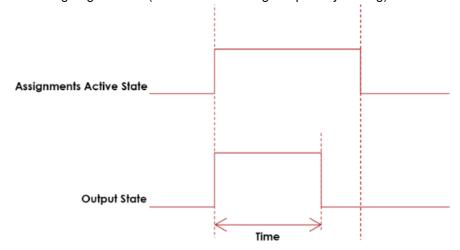


Figure 2 Timed Mode

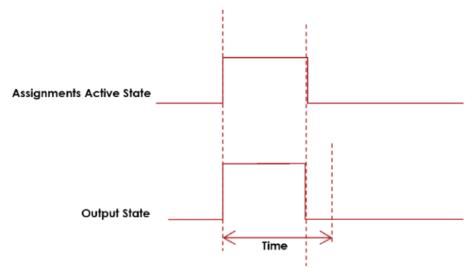


Figure 3: Timed Mode (assignment deactivates before time expires)

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).

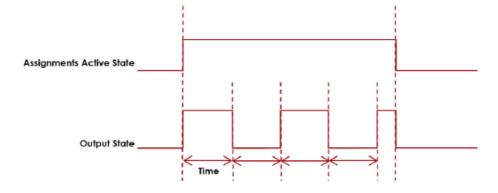


Figure 3 Flash Mode

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 N	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
		Adding -1 to the read input value so we get
		1 = Binary 00
Offset	-1	2 = Binary 01
		3 = Binary 10
		4 = Binary 11

Output Assignments

ОК	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	√	V	V	√							

The "Ok" output assignment will go active at the completion of an acceptable fastening. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Nok	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	V	V	V	\checkmark							

The "Nok" output assignment will go active at the completion of an unacceptable fastening. It will go inactive wh en the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Torque O k	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√										

The "Torque Ok" output assignment will go active at the completion of a fastening that has an acceptable torque value. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job res et.

Torque N ok	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√	V	√							

The "Torque Nok" output assignment will go active at the completion of a fastening that has an unacceptable tor que value. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Low Tor que	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√	√	V							

The "Low Torque" output assignment will go active at the completion of a fastening that has a low torque results . It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

High Tor que	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√	V								

The "High Torque" output assignment will go active at the completion of a fastening that has a high torque result s. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Angle Ok	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	V	√	V	√							

The "Angle Ok" output assignment will go active at the completion of a fastening that has an acceptable angle r esults. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job res et.

Angle No k	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	1		\checkmark							

The "Angle Nok" output assignment will go active at the completion of a fastening that has an unacceptable angle results. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Low Ang le	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	V	√	V	\checkmark							

The "Low Angle" output assignment will go active at the completion of a fastening that has a low angle results. I t will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

High Angle	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	1	V	1	V	V						

The "High Angle" output assignment will go active at the completion of a fastening that has high angle results. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Fastenin g Compl ete	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√	\checkmark	\checkmark							

The "Fastening Complete" output assignment will go active at the completion of a fastening. It will go inactive w hen the next fastening is started (the torque exceeds the threshold value) or a Job reset.

In Cycle	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√	√	√							

The "In Cycle" output assignment will go active at the start of the fastening cycle (the torque exceeds the thresh old value). It will go inactive when the fastening cycle ends.

Fastenin g Aborte	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	1	\ \ \	V	V							

The "Fastening Aborted" output assignment will go active at the completion of a fastening that was aborted by t he system. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Jo b reset.

Fastenin g Stoppe	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
u d	√	√	1		√						

The "Fastening Stopped" output assignment will go active at the completion of a fastening that was stopped by t he user. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job r eset.

Batch Co mplete	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	V	1	√	√	\checkmark							

The "Batch Complete" output assignment will go active at the completion of a fastening that satisfies the bolt co unt of a Job sequence. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or the job is reset.

Job Com	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	√	√	1		√						

The "Job Complete" output assignment will go active at the completion of a fastening that satisfies all the seque nces. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or the job is r eset.

Error	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	1	√	1	V							

The "Error" output assignment will be active while the controller has an error.

Tool Star t Switch	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	√	√	√	√	√						

The "Tool Start Switch" output assignment will reflect the state of the tools start lever.

Tool Pus h to Start Switch	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
ownon'	√	√	1									

The "Tool Push to Start Switch" output assignment will reflect the state of the tools push to start switch.

Tool MF B	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√	\								

The "Tool MFB" output assignment will reflect the state of the tools multifunction button.

Tool Ena bled	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	V	V									

The "Tool Enabled" output assignment will be active if the tool is enabled.

	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
--	-------------	-------------	-----------------	------------------------	--------------------------------	--------------	-----------	------------	--------------	-------------------	--------------	--

	√	1	V	√	√						
The "Tool F	Runr	ning" ou	tput as	ssignment will b	e active while the tool is	s runr	ning.				
Service I ndicator	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Inpu Bit
	V	V	V	√	√						
The "Servi	ce Ir	dicator'	' outpu	ıt assignment w	ill be active if the syster	m is i	n nee	d of s	ervice.		
ToolsNet Connect ed	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Inpu Bit
eu	1	V	1	V	V						
Open Pr otocol C onnected	B u s	Elem	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Inpu Bit
-	√ Pro	tocol Co	√ onnect	ed" output assi	√ gnment will be active if t	the co	ontroll	er ha	s an activ	ve Open prot	tocol c
onnection.			I	T		I	I	I		T	1
PFCS Connect	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Inpu Bit
eu	√	1	V	V	V						
The "PFCS	Co	nnected	l" outp	ut assignment v	vill be active if the contr	oller	has a	n activ	ve PFCS	connection.	
	В	Elem	Bit	Polarity N.O.	Mode: Normal, Time	Ti m	Wi	Off	Input	Input Ele	Inpu
Running	u s	ent	0-3	/N.C.	d, Flash	е	atri	Set	Bus	ment	Bit

	√	1	√				√	√			
The "Runn	ing I	PSet Nu	ımber"	output assignm	nent will output the curre	ent P	Set nu	ımber			
Running Job Num	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Inpu ⁻ Bit
ber	√	V	V				1	1			
The "Runn	ing .	Job Nun	nber" o	output assignme	ent will output the currer	nt Job	num	ber.			
External Controlle	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Inpu Bit
u	\\	√	√						√	√	√
	nal (tput assignment	will reflect the state of	an in	put. U	se the	e "Input I	⊔ Bus, "Input E	lemen
	nal (an in	put. U Wi dth	Off set	Input	Bus, "Input E	Input Bit
", and "Inpo	nal (ut Bi B u	t" to spe	Bit 0-3	Polarity N.O.	t. Mode: Normal, Time	Ti m	Wi	Off	Input	Input Ele	Inpu
", and "Inpo Tool in C CW	nal (ut Bi	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off	Input Bus	Input Ele ment	Inpu Bit
", and "Inpo Tool in C CW	nal (ut Bi	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off	Input Bus	Input Ele ment	Inpu Bit
Tool in C CW The "Tool I ol is in ass	nal (ut Bi B u s	Elem ent CW" out	Bit 0-3 2 v	Polarity N.O. /N.C. Polarity N.O. Polarity N.O.	Mode: Normal, Time d, Flash active if the tool is put Mode: Normal, Time	Ti m e	Wi dth disass	Off set	Input Bus y mode a	Input Ele ment and inactive i	Inpu Bit if the to
Tool in C CW The "Tool I ol is in ass	nal (ut Bi B u s √ P n C(emb)	Elem ent CW" out	Bit 0-3 2 where the control of the c	Polarity N.O. /N.C. Polarity N.O. /N.C.	Mode: Normal, Time d, Flash Mode: Normal, Time de active if the tool is put Mode: Normal, Time d, Flash	Ti m e	Wi dth disass	Off set	Input Bus y mode a	Input Ele ment Input Ele ment	Inpu Bit Inpu Bit

√	√	V		V		

The "Torque" output assignment will output the final torque value of the most recent rundown. The value will be cleared to 0 at the start of a new fastening cycle or a Job reset. At the end of the fastening cycle the final torque will be truncated to an integer and output.

Torque (x10)	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√				√					

The "Torque (x10)" output assignment will output the final torque value of the most recent rundown. The value will be cleared to 0 at the start of a new fastening cycle or a Job reset. At the end of the fastening cycle the final torque will be multiplied by 10, truncated to an integer and output.

Torque (x100)	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	V	V	√				√					

The "Torque (x100)" output assignment will output the final torque value of the most recent rundown. The value will be cleared to 0 at the start of a new fastening cycle or a Job reset. At the end of the fastening cycle the final torque will be multiplied by 100, truncated to an integer and output.

Angle	E U		Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	V	J	√	√				1				

The "Angle" output assignment will output the final angle value of the most recent rundown. The value will be cleared to 0 at the start of a new fastening cycle or a Job reset.

Rundow n Saved to FTP S	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
erver	√	√	V				√					

The "Rundown Saved to FTP Server" output assignment will output the ID of the last rundown that was saved to the FTP server.

Fastener Removed	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	1	V	V	V								

The "Fastener Removed" output assignment will go active when a fastener is removed by the operator. The controller must be configured to report disassembly for this output to work. It will go inactive when the next faste ning is started (the torque exceeds the threshold value) or a Job reset.

Spindle OK	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	1	√	1								

The "Spindle Ok" output assignment will go active at the completion of multi-spindle fastening if all spindles hav e an OK. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job r eset.

Spindle NOk	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	1	√	V	V	\checkmark							

The "Spindle NOk" output assignment will go active at the completion of multi-spindle fastening if one or more of the spindles have an NOK. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Spindle Fastenin g Compl	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
ete	1	√	\	V	$\sqrt{}$							

The "Spindle Fastening Complete" output assignment will go active at the completion of multi-spindle fastening. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Pulses	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√	√				√					

The "Pulses" output assignment will output the pulse count value of the most recent rundown. The value will be cleared to 0 at the start of a new fastening cycle or a Job reset.

Pulses H	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	√	√	1								

The "Pulses High" output assignment will go active at the completion of a fastening that has an pulse count that exceeds the high limit. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

Pulses L ow	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	1	V	V	V	\checkmark							

The "Pulses Low" output assignment will go active at the completion of a fastening that has an pulse count that falls below the low limit. It will go inactive when the next fastening is started (the torque exceeds the threshold v alue) or a Job reset.

Pulses N Ok	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit
	√	√	√	√	√						

The "Pulses Ok" output assignment will go active at the completion of a fastening that has an acceptable pulse count. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job res et.

Pulses O k	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	√		√	$\sqrt{}$							

The "Pulses NOk" output assignment will go active at the completion of a fastening that has an unacceptable pulse count. It will go inactive when the next fastening is started (the torque exceeds the threshold value) or a Job reset.

ON	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	√	V	\	V	\checkmark							

The "ON" output assignment will be active when the controller is powered up and remains active until power do wn.

Job Aborted	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
Aborted	1	√	\	V								

The "Job Aborted" output assignment will go active if a Job is aborted. It will go inactive when the job is reset.

Tool In U	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
-----------	-------------	-------------	-----------------	------------------------	--------------------------------	--------------	-----------	------------	--------------	-------------------	--------------	--

V	V	V	V	V			

The "Tool In Use" output assignment will go active when the trigger is pressed, whereupon a timer will restart. It will go inactive when the specified time is reached without becoming active in between.

Barcode Scanned	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	1	√	\	√								

The "Barcode Scanned" output assignment will go active when a barcode is scanned. The ID # (1-4) will activat e the corresponding bit, if it is covered by the number of bits configured. The maximum size is 4 bits. All bits will go inactive when a tool reaches the InCycle threshold of a rundown or when they are reset.

Start Trig ger Activ e	B u s	Elem ent	Bit 0-3 2	Polarity N.O. /N.C.	Mode: Normal, Time d, Flash	Ti m e	Wi dth	Off set	Input Bus	Input Ele ment	Input Bit	
	V	V	√	V								

The 'Start Trigger Active' assignment will reflect the state of the active Start Input configured to run the tool.

The 'Start Trigger Active' assignment will reflect the state of the active Start Input configured to run the tool.

Possible Start Inputs include:

- Start from IO
 - Start
 - Dual Start Interlocked
- Start from Tool Buttons
 - 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.

Phone: (503) 254–6600 **Toll Free:** 1-800-852-1368

AIMCO CORPORATION DE MEXICO SA DE CV Ave. Cristobal Colon 14529

Chihuahua, Chihuahua. 31125

Mexico

Phone: (01-614) 380-1010

Documents / Resources



AcraDyne iAC4EGV-T Assignable I O Gen IV ACE iAC Controller [pdf] Instructions iAC4EGV-T, Assignable I O Gen IV ACE iAC Controller, iAC4EGV-T Assignable I O Gen IV ACE iAC Controller, Controller, Controller

References

• Aimco-Global | Tough tools Made in the USA.

Manuals+,