

Atlas Copco Torque Tool Open Protocol

Supported Series: Torque Tool Open Protocol

HMI Settings:

Parameters	Recommended	Options	Notes
PLC type	Atlas Copco Torque Tool Open Protocol		
PLC I/F	Ethernet		
Port no.	4545		

Device address:

Command Set : Alarm

Item	Data Type	Access	Description	Object type
ALARM_STATUS	Boolean	Read Only	0 if no alarm is active, 1 if an alarm is currently active.*	Bit Lamp
ALARM_ERROR	String[2]	Read Only	Error code.	ASCII
ALARM_C_READY	Boolean	Read Only	Controller ready status.	Bit Lamp
ALARM_T_READY	Boolean	Read Only	Tool ready status.	Bit Lamp
ALARM_TIME	String[10]	Read Only	Timestamp	ASCII
ALARM_NEWDATA	Boolean	Read / Write	Set to 1 when new data arrives. Write a 0 to this flag to clear it.	Toggle Object

*The ALARM_STATUS flag may not be available, depending on the type of alarm message received.

Command Set : Flash

Item	Data Type	Access	Description	Object type
FLASH	Boolean	Write Only	Cause the green light on the tool to flash until an operator pushes	Set Bit Set On

Command Set : Identifiers

Item	Data Type	Access	Description	Object type
ID_DOWNLOAD	String[50]	Write Only	Write the identifiers to this item to send the identifiers to the controller.	Use macro and LW to write it
ID_BYPASS	Boolean	Write Only	Bypass the next identifier expected in the work order	Set Bit Set On
ID_RESET	Boolean	Write Only	Reset the latest identifier or bypassed identifier in the work order.	Set Bit Set On
ID_RESETALL	Boolean	Write Only	Reset all identifiers in the work order	Set Bit Set On
MID_TYPE*	Word	Read Only	Identifier type number	Numeric
MID_IN_ORDER*	Boolean	Read Only	Included in work order. 0 = No 1 = Yes	Bit Lamp
MID_STATUS*	Word	Read Only	Status in work order. 0 = Not accepted. 1 = Accepted. 2 = Bypassed. 3 = Reset.	Numeric
MID_ID*	String[13]	Read Only	Identifier	ASCII
MID_NEWDATA*	Boolean	Read/Write	Set to 1 when new data arrives. Write a 0 to this flag to clear it.	Toggle Object Toggle

* These items have 4 items (1 ~ 4) Ex MID_TYPE1 ~ MID_TYPE4

Command Set : Job Info

Item	Data Type	Access	Description	Object type
JOB_JOBNUM	Word	Read/Write	The selected job number. To select a different job, write a job number to this item.	Numeric
JOB_STATUS	Word	Read Only	Job batch status. 0 = Job batch not completed. 1 = Job batch OK. 2 = Job batch NOK.	Numeric
JOB_BMODE	Word	Read Only	Job batch mode. 0 = Only the OK bolts are counted. 1 = Both the OK and the NOK bolts are counted.	Numeric
JOB_BSIZE	Word	Read Only	Job batch size.	Numeric
JOB_BCOUNT	Word	Read Only	Job batch counter.	Numeric
JOB_TIME	String[10]	Read Only	Timestamp for the job info.	ASCII
JOB_NEWDATA	Boolean	Read/Write	Set to 1 when new data arrives. Write a 0 to this flag to clear it.	Toggle Object Toggle
JOB_RESTART	Word	Write only	Write a job number to this item to restart that job	Set word object/ Macro
JOB_ABORT	Boolean	Write only	Abort the current job.	Set Bit Set On

Command Set : Job Number Data

Item	Data Type	Access	Description	Object type
JOBN_COUNT	Word	Read Only	Count of the number of valid jobs	Numeric
JOBN_ID	Word[99]	Read Only	Valid job numbers (the number available is specified by JOBN_COUNT).	Numeric

Command Set : Last Tightening Results

Item	Data Type	Access	Description	Object type
LTR_CELL_ID	Word	Read only	Cell ID	Numeric
LTR_CHAN_ID	Word	Read only	Channel ID	Numeric
LTR_TC_NAME	String[13]	Read only	Torque controller name	ASCII
LTR_VIN	String[13]	Read only	Vehicle ID number	ASCII
LTR_JOB	Word	Read only	Job number	Numeric
LTR_PSET	Word	Read only	PSet number	Numeric
LTR_BATCH_SIZE	Word	Read only	Batch size	Numeric
LTR_BATCH_COUNTER	Word	Read only	Batch counter	Numeric
LTR_TIGHT_STATUS	Word	Read only	Tightening status. 0 = NOK 1 = OK	Numeric
LTR_TORQUE_STATUS	Word	Read only	Torque status. 0 = Low 1 = OK 2 = High	Numeric
LTR_ANGLE_STATUS	Word	Read only	Angle status. 0 = Low 1 = OK 2 = High	Numeric
LTR_TORQUE_MIN	Real	Read only	Torque minimum limit	Numeric
LTR_TORQUE_MAX	Real	Read only	Torque maximum limit	Numeric
LTR_TORQUE_TARGET	Real	Read only	Torque final target.	Numeric
LTR_TORQUE_VALUE	Real	Read only	Torque value.*	Numeric
LTR_ANGLE_MIN	DWord	Read only	Angle minimum value, in degrees	Numeric
LTR_ANGLE_MAX	DWord	Read only	Angle maximum value, in degrees.	Numeric
LTR_ANGLE_TARGET	DWord	Read only	Target angle value, in degrees	Numeric
LTR_ANGLE_VALUE	DWord	Read only	Turning angle value, in degrees	Numeric
LTR_TIMESTAMP	String[20]	Read only	Time stamp	ASCII
LTR_CHANGETIME	String[20]	Read only	Last change in PSet settings	ASCII
LTR_BATCH_STATUS	Word	Read only	Batch status. 0 = NOK 1 = OK 2 = Batch not used	Numeric
LTR_ID	DWord	Read/Write	Tightening ID	Numeric
LTR_STRATEGY	Word	Read only	(Rev 2) Strategy 1 = Torque control.	Numeric

Item	Data Type	Access	Description	Object type
			2 = Torque control / angle monitoring. 3 = Torque control / angle control AND. 4 = Angle control / torque monitoring. 5 = DS control. 6 = DS control torque monitoring. 7 = Reverse angle. 8 = Reverse torque. 9 = Click wrench. 10 = Rotate spindle forward. 11 = Torque control angle control OR. 12 = Rotate spindle reverse. 99 = No strategy.	
LTR_STRAT_OPT	Boolean[11]	Read only	(Rev 2) Strategy options. This item requires a bit number (0-15) Bit 0 = Torque. Bit 1 = Angle. Bit 2 = Batch. Bit 3 = PVT monitoring. Bit 4 = PVT compensate. Bit 5 = Selftap. Bit 6 = Rundown. Bit 7 = CM. Bit 8 = DS control. Bit 9 = Click wrench. Bit 10 = RBW monitoring.	Bit Lamp
LTR_RDA_STATUS	Word	Read only	(Rev 2) Rundown angle status. 0 = NOK 1 = OK 2 = High	Numeric
LTR_CMOM_STATUS	Word	Read only	(Rev 2) Current monitoring status. 0 = NOK 1 = OK 2 = High	Numeric
LTR_ST_STATUS	Word	Read only	(Rev 2) Selftap status. 0 = NOK 1 = OK 2 = High	Numeric
LTR_PTM_STATUS	Word	Read only	(Rev 2) Prevail torque monitoring status.	Numeric

Item	Data Type	Access	Description	Object type
			0 = NOK 1 = OK 2 = High	
LTR_PTC_STATUS	Word	Read only	(Rev 2) Prevail torque compensate status. 0 = NOK 1 = OK 2 = High	Numeric
LTR_TERR_STATUS	Boolean[23]	Read only	(Rev 2) Tightening error status. This item requires a bit number (0-31) Bit 0 Rundown angle max shut off. Bit 1 Rundown angle min shut off. Bit 2 Torque max shut off. Bit 3 Angle max shut off. Bit 4 Selftap torque max. shut off. Bit 5 Selftap torque min. shut off. Bit 6 Prevail torque max. shut off. Bit 7 Prevail torque min. shut off. Bit 8 Prevail torque compensate overflow. Bit 9 = Current monitoring max shut off. Bit 10 = Post view torque min. torque shut off. Bit 11 = Post view torque max. torque shut off. Bit 12 = Post view torque angle too small. Bit 13 = Trigger lost. Bit 14 = Torque less than target. Bit 15 = Tool hot. Bit 16 = Multistage abort. Bit 17 = Rehit. Bit 18 = DS measure failed. Bit 19 = Current limit reached. Bit 20 = End time out shutoff. Bit 21 = Remove fastener limit exceeded. Bit 22 = Disable drive.	Bit Lamp
LTR_RDA_MIN	DWord	Read only	(Rev 2) Rundown angle minimum value, in degrees	Numeric
LTR_RDA_MAX	DWord	Read only	(Rev 2) Rundown angle maximum value,	Numeric

Item	Data Type	Access	Description	Object type
			in degrees	
LTR_RDA_VALUE	DWord	Read only	(Rev 2) Rundown angle value reached, in degrees	Numeric
LTR_CM_MIN	Word	Read only	(Rev 2) Current monitoring minimum limit	Numeric
LTR_CM_MAX	Word	Read only	(Rev 2) Current monitoring maximum limit	Numeric
LTR_CM_VALUE	Word	Read only	(Rev 2) Current monitoring value in percent.	Numeric
LTR_ST_MIN	Real	Read only	(Rev 2) Selftap minimum limit.	Numeric
LTR_ST_MAX	Real	Read only	(Rev 2) Selftap maximum limit	Numeric
LTR_ST_TORQUE	Real	Read only	(Rev 2) Selftap torque	Numeric
LTR_PTM_MIN	Real	Read only	(Rev 2) Prevail torque monitoring minimum limit	Numeric
LTR_PTM_MAX	Real	Read only	(Rev 2) Prevail torque monitoring maximum limit	Numeric
LTR_PT	Real	Read only	(Rev 2) Prevail torque value	Numeric
LTR_JOB_SEQ_NUM	Word	Read only	(Rev 2) Job sequence number	Numeric
LTR_STID	Word	Read only	(Rev 2) Synch tightening ID	Numeric
LTR_SERIAL_NUM	String[7]	Read only	(Rev 2) Tool serial number	ASCII
LTR_PSET_NAME	String[13]	Read only	(Rev 3) Parameter set name	ASCII
LTR_UNITS	Word	Read only	(Rev 3) Torque value units. 1 = Nm 2 = Lbf.ft 3 = Lbf.In 4 = Kpm	Numeric
LTR_RESULT_TYPE	Word	Read only	(Rev 3) Result type. 1 = Tightening. 2 = Loosening. 3 = Batch Increment. 4 = Batch decrement. 5 = Bypass pset result. 6 = Abort job result. 7 = Sync tightening.	Numeric
LTR_IDR2	String[13]	Read only	(Rev 4) Identifier result part 2.	ASCII
LTR_IDR3	String[13]	Read only	(Rev 4) Identifier result part 3	ASCII
LTR_IDR4	String[13]	Read only	(Rev 4) Identifier result part 4	ASCII
LTR_CUSTOM_ERR	String[2]	Read only	(Rev 5) Customer tightening error code	ASCII

Item	Data Type	Access	Description	Object type
LTR_NEWDATA	Boolean	Read/Write	Set to 1 when new data arrives. Write a 0 to this flag to clear	Toggle Object Toggle

Command Set : Multi Spindle Results

Item	Data Type	Access	Description	Object type
MS_NUMBER	Word	Read Only	Number of running spindles	Numeric
MS_VIN	String[13]	Read Only	Vehicle ID number	ASCII
MS_JOBNUM	Word	Read Only	Job number (Link Group).	Numeric
MS_PSET	Word	Read Only	Parameter set (App)	Numeric
MS_BSIZE	Word	Read Only	Batch size	Numeric
MS_BCOUNT	Word	Read Only	Batch counter	Numeric
MS_BSTATUS	Word	Read Only	Batch status 0 = NOK 1 = OK 2 = Batch not used	Numeric
MS_TMIN	Real	Read Only	Torque minimum limit	Numeric
MS_TMAX	Real	Read Only	Torque maximum limit	Numeric
MS_TTARG	Real	Read Only	Torque final target	Numeric
MS_AMIN	DWord	Read Only	Angle minimum limit	Numeric
MS_AMAX	DWord	Read Only	Angle maximum limit	Numeric
MS_ATARG	DWord	Read Only	Angle final target	Numeric
MS_CHANGETIME	String[10]	Read Only	Last change in setting	ASCII
MS_TIME	String[10]	Read Only	Time stamp	ASCII
MS_SYNCID	DWord	Read Only	Sync tightening ID	Numeric
MS_SYNCSTAT	Word	Read Only	Overall tightening status. 0 = NOK 1 = OK	Numeric
SPD_NUM	Word[10]	Read Only	Spindle number	Numeric
SPD_CHAN	Word[10]	Read Only	Channel ID	Numeric
SPD_STATUS	Word[10]	Read Only	Overall spindle status 0 = NOK 1 = OK	Numeric
SPD_TSTATUS	Word[10]	Read Only	Individual torque status. 0 = NOK 1 = OK	Numeric
SPD_TORQUE	Real[10]	Read Only	Individual torque.	Numeric
SPD_ASTATUS	Word[10]	Read Only	Individual angle status. 0 = NOK	Numeric

Item	Data Type	Access	Description	Object type
			1 = OK	
SPD_ANGLE	DWord[10]	Read Only	Individual angle	Numeric
MS_NEWDATA	Boolean	Read /Write	Set to 1 when new data arrives. Write a 0 to this flag to clear it	Toggle Object Toggle

Command Set : Old Tightening Results

Item	Data Type	Access	Description	Object type
OTR_ID	DWord	Read /Write	Write the Tightening ID to this item to retrieve data for that tightening. Writing 0 will retrieve the last tightening results.	Numeric
OTR_VIN	String[13]	Read Only	Vehicle ID number	ASCII
OTR_PSET	Word	Read Only	PSet number	Numeric
OTR_BCOUNT	Word	Read Only	Batch counter	Numeric
OTR_TIGHTSTAT	Word	Read Only	Tightening status. 0 = NOK 1 = OK	Numeric
OTR_TORQSTAT	Word	Read Only	Torque Status. 0 = Low 1 = OK 2 = High	Numeric
OTR_ANGSTAT	Word	Read Only	Angle Status. 0 = Low 1 = OK 2 = High	Numeric
OTR_TORQUE	Real	Read Only	Torque value	Numeric
OTR_ANGLE	DWord	Read Only	Turning angle value, in degrees	Numeric
OTR_TIME	String[10]	Read Only	Time stamp	ASCII
OTR_BATSTAT	Word	Read Only	Batch status. 0 = NOK 1 = OK 2 = Batch not used	Numeric
OTR_JOBNUM	Word	Read Only	(Rev 2) Job number	Numeric
OTR_STRATEGY	Word	Read Only	(Rev 2) Strategy. 1 = Torque control. 2 = Torque control / angle monitoring. 3 = Torque control / angle control AND. 4 = Angle control / torque monitoring. 5 = DS control.	Numeric

Item	Data Type	Access	Description	Object type
			6 = DS control torque monitoring. 7 = Reverse angle. 8 = Reverse torque. 9 = Click wrench. 10 = Rotate spindle forward. 11 = Torque control angle control OR. 12 = Rotate spindle reverse. 99 = No strategy	
OTR_STROPT	Boolean[11]	Read Only	(Rev 2) Strategy options. This item requires a bit number (0-15). Bit 0 = Torque. Bit 1 = Angle. Bit 2 = Batch. Bit 3 = PVT Monitoring. Bit 4 = PVT Compensate. Bit 5 = Selftap. Bit 6 = Rundown. Bit 7 = CM. Bit 8 = DS Control. Bit 9 = Click Wrench. Bit 10 = RBW Monitoring.	Bit Lamp
OTR_BSIZE	Word	Read Only	(Rev 2) Batch size.	Numeric
OTR_RASTAT	Word	Read Only	(Rev 2) Rundown angle status. 0 = NOK 1 = OK 2 = High	Numeric
OTR_CMSTAT	Word	Read Only	(Rev 2) Current monitoring status. 0 = NOK 1 = OK 2 = High	Numeric
OTR_STSTAT	Word	Read Only	(Rev 2) Selftap status. 0 = NOK 1 = OK 2 = High	Numeric
OTR_PTMSTAT	Word	Read Only	(Rev 2) Prevail torque monitoring status. 0 = NOK 1 = OK 2 = High	Numeric

Item	Data Type	Access	Description	Object type
OTR_PTCSTAT	Word	Read Only	(Rev 2) Prevail torque compensate status. 0 = NOK 1 = OK 2 = High	Numeric
OTR_TERRSTAT	Boolean[23]	Read Only	(Rev 2) Tightening error status. This item requires a bit number (0-31) Bit 0 = Rundown angle max shut off. Bit 1 = Rundown angle min shut off. Bit 2 = Torque max shut off. Bit 3 = Angle max shut off. Bit 4 = Selftap torque max shut off. Bit 5 = Selftap torque min shut off. Bit 6 = Prevail torque max shut off. Bit 7 = Prevail torque min shut off. Bit 8 = Prevail torque compensate overflow. Bit 9 = Current monitoring max shut off. Bit 10 = Post view torque min torque shut off. Bit 11 = Post view torque max torque shut off. Bit 12 = Post view torque Angle too small. Bit 13 = Trigger Lost. Bit 14 = Torque Less Than Target. Bit 15 = Tool Hot. Bit 16 = Multistage Abort. Bit 17 = Rehit. Bit 18 = DS Measure Failed. Bit 19 = Current Limit Reached. Bit 20 = EndTime out Shutoff. Bit 21 = Remove fastener limit exceeded. Bit 22 = Disable drive.	Bit Lamp
OTR_RANGLE	DWord	Read Only	(Rev 2) Rundown angle value reached, in degrees	Numeric
OTR_CMVALUE	Word	Read Only	(Rev 2) Current monitoring value in percent	Numeric

Item	Data Type	Access	Description	Object type
OTR_STORQUE	Real	Read Only	(Rev 2) Selftap torque	Numeric
OTR_PTORQUE	Real	Read Only	(Rev 2) Prevail torque value	Numeric
OTR_JOBSEQ	Word	Read Only	(Rev 2) Job sequence number	Numeric
OTR_STID	Word	Read Only	(Rev 2) Synch Tightening ID	Numeric
OTR_SERIAL	String[7]	Read Only	(Rev 2) Tool serial number	ASCII
OTR_TVUNIT	Word	Read Only	(Rev 3) Torque value units. 1 = Nm 2 = Lbf.ft 3 = Lbf.In 4 = Kpm	Numeric
OTR_RTYPE	Word	Read Only	(Rev 3) Result type. 1 = Tightening. 2 = Loosening. 3 = Batch Increment. 4 = Batch decrement. 5 = Bypass pset result. 6 = Abort job result. 7 = Sync tightening	Numeric
OTR_ID2	String[13]	Read Only	(Rev 4) Identifier result part 2	ASCII
OTR_ID3	String[13]	Read Only	(Rev 4) Identifier result part 3	ASCII
OTR_ID4	String[13]	Read Only	(Rev 4) Identifier result part 4	ASCII

Command Set : Parameter Set Data

Item	Data Type	Access	Description	Object type
PSD_ID	Word	Read/Write	Write the ID of the desired parameter set to this item to retrieve the data for that parameter set.	Numeric
PSD_NAME	String[13]	Read Only	The name of the parameter set	ASCII
PSD_DIR	Word	Read Only	Rotation direction. 1 = Clockwise. 2 = Counterclockwise.	Numeric
PSD_BSIZE	Word	Read Only	Batch size	Numeric
PSD_TMIN	Real	Read Only	Torque minimum limit	Numeric
PSD_TMAX	Real	Read Only	Torque maximum limit	Numeric
PSD_TTARG	Real	Read Only	Torque final target value	Numeric
PSD_AMIN	Word	Read Only	Angle minimum value in degrees.	Numeric

Item	Data Type	Access	Description	Object type
PSD_AMAX	Word	Read Only	Angle maximum value in degrees	Numeric
PSD_ATARG	Word	Read Only	Target angle in degrees	Numeric

Command Set : Parameter Set Numbers

Item	Data Type	Access	Description	Object type
PSN_COUNT	Word	Read Only	The number of parameter sets in the list	Numeric
PSN_ID	Word[999]	Read Only	The parameter set ID. The array size is defined by the PSN_COUNT	Numeric

Command Set : Parameter Set Selected

Item	Data Type	Access	Description	Object type
PSET_NUMBER	Word	Read/Write	ID number of the last parameter set selected. Users may also write a parameter set number to this item to select a parameter set	Numeric
PSET_LASTCHANGE	String[10]	Read Only	Time of last change in PSet setting	ASCII
PSET_NEWDATA	Boolean	Read/Write	Set to 1 when new data arrives. Write a 0 to this flag to clear it	Toggle Object Toggle
PSET_BSIZE	Word[2]	Write only	Use this item to set the batch size for a particular parameter set. Word[0] = PSETNUM Word[1] = BATCHSIZE	Macro and LW
PSET_RESETBC	Word	Write only	Writing a parameter set number to this item will reset the batch counter for that parameter set.	Set Word or Macro and LW

Command Set : Time

Item	Data Type	Access	Description	Object type
TIME	String[10]	Read/Write	Current time in the controller	ASCII

Command Set : Time

Item	Data Type	Access	Description	Object type
TOOLDATA_TSERIAL	String[7]	Read Only	Tool serial number	ASCII
TOOLDATA_NT	DWord	Read Only	Tool number of tightening	Numeric
TOOLDATA_LCD	String[10]	Read Only	Last calibration date	ASCII
TOOLDATA_CSERIAL	String[5]	Read Only	Controller serial number	ASCII
TOOL_ENABLE	Boolean	Read/Write	Write a 0 to disable the tool or a 1 to enable the tool	Toggle Object Toggle

Command Set : VIN

Item	Data Type	Access	Description	Object type
VIN_VIN	String[13]	Read/Write	Vehicle ID Number. To send it to the controller, write a VIN to this field.	ASCII
VIN_VIN2	String[13]	Read Only	(Rev 2) Identifier result part 3.	Numeric
VIN_VIN3	String[13]	Read Only	(Rev 2) Identifier result part 3.	ASCII
VIN_VIN4	String[13]	Read Only	(Rev 2) Identifier result part 3.	ASCII
VIN_NEWDATA	Boolean	Read/Write	Set to 1 when new data arrives. Write a 0 to this flag to clear it	Toggle Object Toggle

Command Set : Ex Monitored Inputs

EX_MON_INPUT	BOOL[8]	Read	external monitored	Toggle
EX_MON_INPUT	BOOL[8]	Read Only	external monitored inputs	Toggle Object Toggle

Wiring Diagram:

Ethernet cable:

