

TULSA Water and Sewer Department

SCADA System Improvements

Motor Add-On Instruction

FINAL

PRESENTED TO

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Revision History

After the Add-On Instruction has been modified or updated, this document should be revised to reflect the changes. The version is broken into two parts: major (**X.0**) and minor (**1.X**). A major version is reserved

for adding or removing sections of this document. A minor version is reserved for modifications to existing sections.

Version	Date	Description
1.0	July 9, 2021	AOI created in Studio 5000 Version 21.11, Draft submitted to client
1.0	April 4, 2022	Final submitted to client.

1 INTRODUCTION

The Motor Add-On Instruction (AOI) is used for controlling constant speed motors. The AOI provides automatic PLC control as well as remote manual control using HMI start and stop buttons. It includes alarms that are specific to constant speed motors, in addition to customizable alarms. The motor can be taken out of service to prevent it from running and to disable its alarms and statistics. Statistics included in the AOI are runtime hours and number of starts for the current and previous day, month, year, and cumulative total.

Table 1-1 Embedded AOIs

Embedded AOIs
Discrete Alarm
Motor Stats

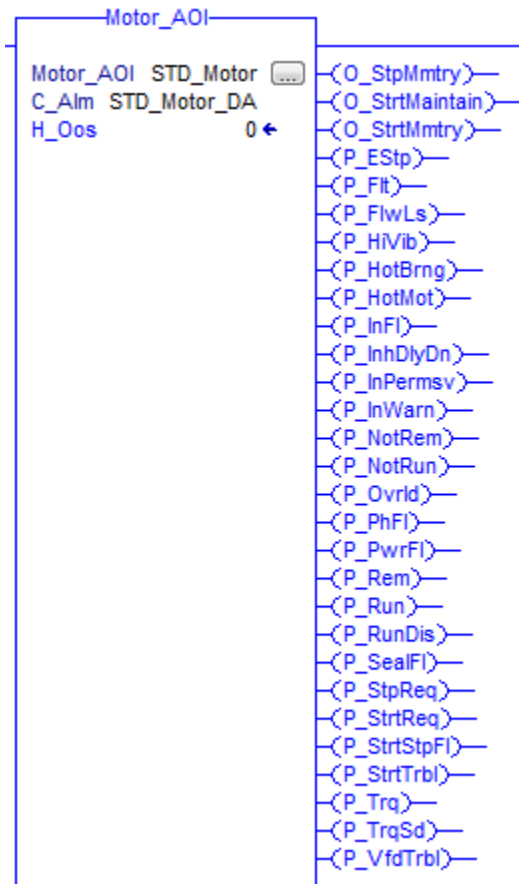


Figure 1-1 Motor AOI as it appears in ladder logic

2 TEMPLATE

Template logic can be found in the Unscheduled Programs/Phases task folder of the Tulsa ControlLogix Standard PLC file. Because the template task is unscheduled, the routines within it do not execute during

runtime. The intention of the template routine is to provide a standard logic structure for the AOIs that can be copied into the executable tasks of the MainProgram.

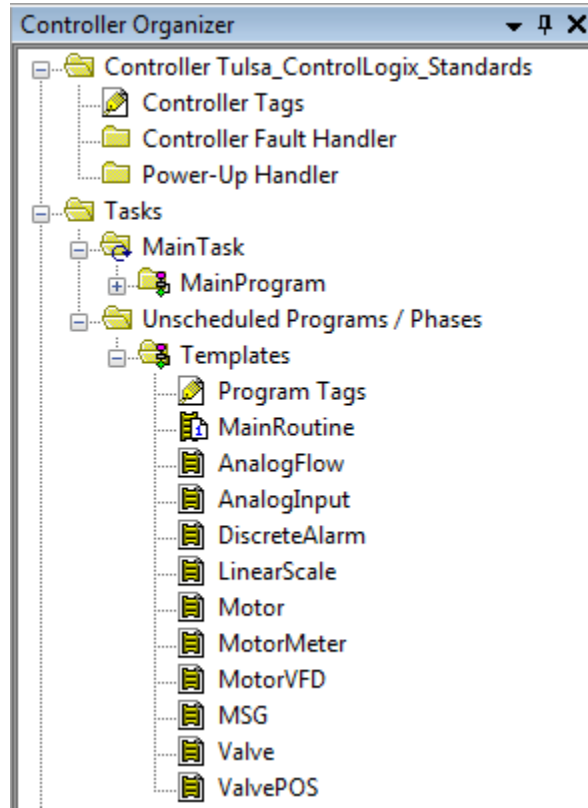
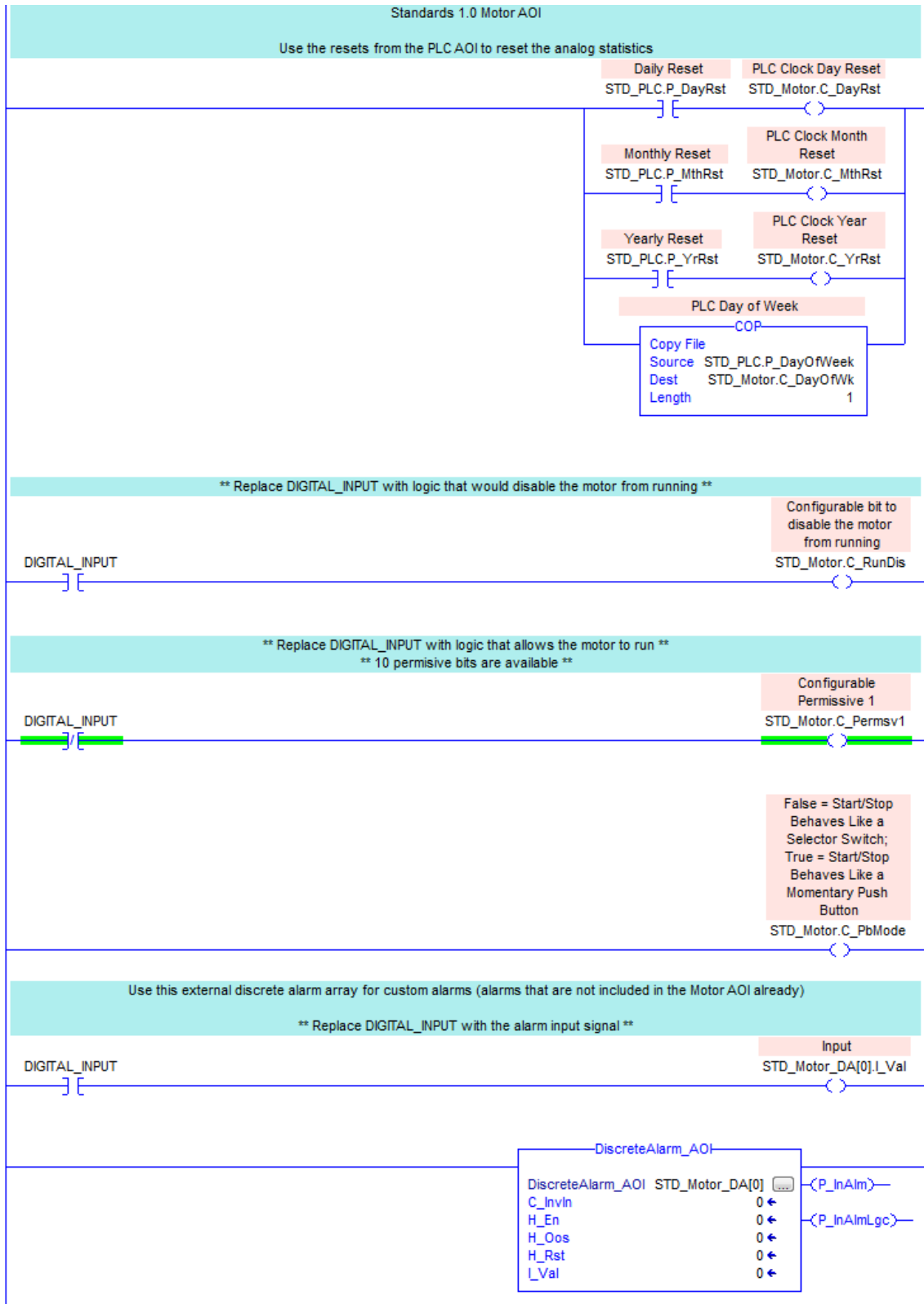


Figure 2-1 Unscheduled Standard Logic Templates

The Motor template routine displays the standard logic for using the Motor AOI. Rung 0 uses daily, monthly, and yearly resets from the PLC AOI to reset the motor statistics. Rung 1 contains a placeholder for any logic that would disable the motor from running. Rung 2 enables the motor permissive to allow the motor to run. Programmers can include logic on this rung to control the permissive. There are 10 permissives available. Permissive descriptions should be set in rung 0 of the internal AOI logic. Rung 3 places the motor in the default push button mode. Rungs 4 and 5 provide an example of how to use the customizable alarms associated with the motor. Rung 7 starts the motor by writing to a digital output.



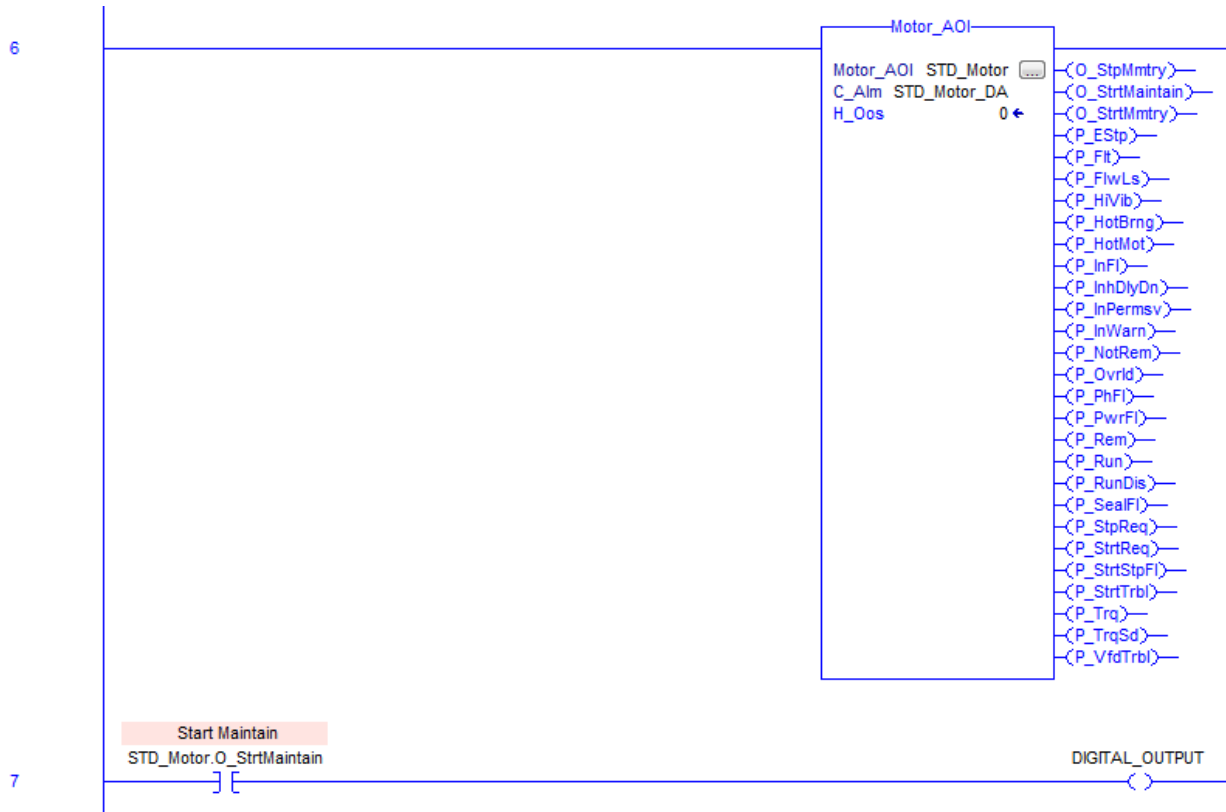


Figure 2-2 Standard Template Logic for the Motor AOI

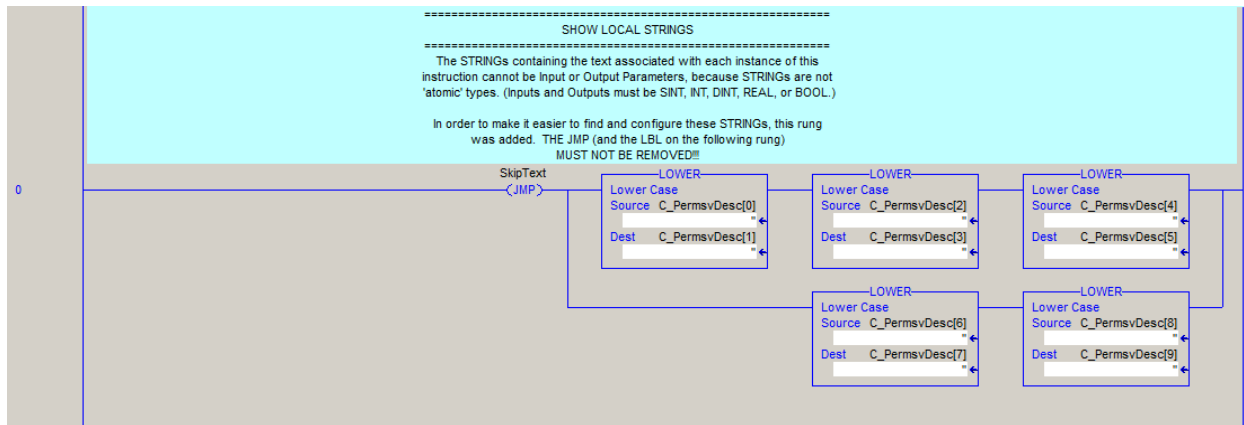


Figure 2-3 Standard Template Internal AOI Permissive Descriptions

3 FEATURES

3.1 Configuration Tags

Configuration tags are inputs to the AOI that are set by the engineer during programming and equipment start-up. A “C_” prefix is used to indicate that the tag modifies the configuration of an equipment or instrument.

3.1.1 Functionality

Table 3-1 Configuration Functionality Tags

Parameter	Data Type	Description	Default Value
C_AutoStrt	BOOL	Start command from auto logic.	False
C_FIRstUltchTm	DINT	Fail reset button unlatch delay time in seconds.	5
C_HasAuto	BOOL	Set if equipment has automatic control.	False
C_HasLocal	BOOL	Set if equipment has on, local, or hand signal.	False
C_HasMan	BOOL	Set if equipment has manual control.	False
C_HasRem	BOOL	Set if equipment has remote signal.	False
C_HasRun	BOOL	Set if equipment has running signal.	False
C_HasStrtCmd	BOOL	Set if equipment has start command signal.	False
C_InhTm	REAL	Restart inhibit time in seconds.	120
C_PbMode	BOOL	Push button mode. False = Start/Stop Behaves Like a Selector Switch; True = Start/Stop Behaves Like a Momentary Push Button	False
C_Permsv1	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv2	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv3	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv4	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv5	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv6	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv7	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv8	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv9	BOOL	Used in the logic to allow the motor to run.	True
C_Permsv10	BOOL	Used in the logic to allow the motor to run.	True
C_StpCmdTm	DINT	Stop command delay time in seconds	5
C_StpUltchDlyTm	DINT	Stop button unlatch delay time in seconds	5
C_StrtCmdTm	DINT	Start command delay time in seconds	5
C_StrtUltchDlyTm	DINT	Start button unlatch delay time in seconds	5

3.1.2 Alarms

Table 3-2 Configuration Alarm Tags

Parameter	Data Type	Description	Default Value
C_Alm	DiscreteAlarm_AOI[10]	Array of ten configurable alarms to be used external to the AOI as necessary.	N/A
C_AutoAlm	BOOL	Configurable alarm from auto logic.	False
C_EStpHdshDlyTm	DINT	Emergency stop alarm handshake delay time in seconds.	0
C_EStpInvIn	BOOL	Emergency stop invert alarm source.	False
C_EStpPri	DINT	Emergency stop alarm priority.	300

C_EStpTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_EStpTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_FltHdshDlyTm	DINT	Fault alarm handshake delay time in seconds.	0
C_FltInvIn	BOOL	Fault invert alarm source.	False
C_FltPri	DINT	Fault alarm priority.	300
C_FltTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_FltTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_FlwLsHdshDlyTm	DINT	Flow loss alarm handshake delay time in seconds.	0
C_FlwLsInvIn	BOOL	Flow loss invert alarm source.	False
C_FlwLsPri	DINT	Flow loss alarm priority.	300
C_FlwLsTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_FlwLsTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_HiVibHdshDlyTm	DINT	High vibration alarm handshake delay time in seconds.	0
C_HiVibInvIn	BOOL	High vibration invert alarm source.	False
C_HiVibPri	DINT	High vibration alarm priority.	300
C_HiVibTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_HiVibTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_HotBrngHdshDlyTm	DINT	Hot bearing alarm handshake delay time in seconds.	0
C_HotBrngInvIn	BOOL	Hot bearing invert alarm source.	False
C_HotBrngPri	DINT	Hot bearing alarm priority.	300
C_HotBrngTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_HotBrngTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_HotMotHdshDlyTm	DINT	Hot motor alarm handshake delay time in seconds.	0
C_HotMotInvIn	BOOL	Hot motor invert alarm source.	False
C_HotMotPri	DINT	Hot motor alarm priority.	300

C_HotMotTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_HotMotTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_InFI	BOOL	Motor in failure. Configurable from logic.	False
C_InWarn	BOOL	Motor in warning. Configurable from logic.	False
C_NotRemPri	DINT	Not in remote alarm priority.	400
C_NotRunPri	DINT	Not running alarm priority.	400
C_OvrdHdshDlyTm	DINT	Overload alarm handshake delay time in seconds.	0
C_OvrdInvIn	BOOL	Overload invert alarm source.	False
C_OvrdPri	DINT	Overload alarm priority.	300
C_OvrdTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_OvrdTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_PhFIHdshDlyTm	DINT	Phase fail alarm handshake delay time in seconds.	0
C_PhFIInvIn	BOOL	Phase fail invert alarm source.	False
C_PhFIPri	DINT	Phase fail alarm priority.	300
C_PhFITypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_PhFITypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_PwrFIHdshDlyTm	DINT	Power fail alarm handshake delay time in seconds.	0
C_PwrFIInvIn	BOOL	Power fail invert alarm source.	False
C_PwrFIPri	DINT	Power fail alarm priority.	300
C_PwrFITypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_PwrFITypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_RunDis	BOOL	Configurable bit used in the logic to disable the motor from running.	False
C_RunDisPri	DINT	Run disable alarm priority.	200
C_SealFIHdshDlyTm	DINT	Seal fail alarm handshake delay time in seconds.	0
C_SealFIInvIn	BOOL	Seal fail invert alarm source.	False
C_SealFIPri	DINT	Seal fail alarm priority.	300

C_SealFITypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_SealFITypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_StrtsExcdPri	DINT	Starts exceeded alarm priority.	300
C_StrtStpFIPri	DINT	Start/stop fail alarm priority.	200
C_StrtStpFITm	REAL	Start/stop fail time in seconds	15
C_StrtTrblHdshDlyTm	DINT	Starter trouble alarm handshake delay time in seconds.	0
C_StrtTrblInvlIn	BOOL	Starter trouble invert alarm source.	False
C_StrtTrblPri	DINT	Starter trouble alarm priority.	300
C_StrtTrblTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_StrtTrblTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_TrqHdshDlyTm	DINT	Torque alarm handshake delay time in seconds	0
C_TrqInvlIn	BOOL	Torque invert alarm source.	False
C_TrqPri	DINT	Torque alarm priority.	300
C_TrqSdHdshDlyTm	DINT	Torque shutdown alarm handshake delay time in seconds.	0
C_TrqSdInvlIn	BOOL	Torque shutdown invert alarm source.	False
C_TrqSdPri	DINT	Torque shutdown alarm priority.	300
C_TrqSdTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_TrqSdTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_TrqTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_TrqTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_VfdTrblHdshDlyTm	DINT	VFD trouble alarm handshake delay time in seconds.	0
C_VfdTrblInvlIn	BOOL	VFD trouble invert alarm source.	False
C_VfdTrblPri	DINT	VFD trouble alarm priority.	300
C_VfdTrblTypeAuto	INT	Automatic alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4
C_VfdTrblTypeMan	INT	Manual alarm mode: 1=Permissive, 2=Alarm, 4=Warning	4

3.1.3 Time and Date Settings

Table 3-3 Configuration Time and Date Tags

Parameter	Data Type	Description	Default Value
C_DayOfWk	INT	PLC clock – day of week	0
C_DayRst	BOOL	PLC clock – day reset	False
C_MthRst	BOOL	PLC clock – month reset	False
C_YrRst	BOOL	PLC clock – year reset	False

3.2 Input Tags

Input tags are inputs to the AOI that are set by the I/O and indicate equipment status. The “I_” prefix is used to indicate that the tag is displaying an equipment or instrument status.

Table 3-4 Input Tags

Parameter	Data Type	Description
I_EStp	BOOL	Emergency stop alarm source.
I_Flt	BOOL	Fault alarm source.
I_FlwLs	BOOL	Flow loss alarm source.
I_HiVib	BOOL	High vibration alarm source.
I_HotBrng	BOOL	Hot bearing alarm source.
I_HotMot	BOOL	Hot motor alarm source.
I_Local	BOOL	Equipment is in local mode.
I_Ovrld	BOOL	Overload alarm source.
I_PhFI	BOOL	Phase fail alarm source.
I_PwrFI	BOOL	Power fail alarm source.
I_Rem	BOOL	Equipment is in remote mode.
I_Run	INT	Motor running feedback.
I_SealFI	BOOL	Seal fail alarm source.
I_StrtTrbl	BOOL	Starter trouble alarm source.
I_Trq	BOOL	Torque alarm source.
I_TrqSd	BOOL	Torque shutdown alarm source.
I_VfdTrbl	BOOL	VFD trouble alarm source.

3.3 Output Tags

Output tags are outputs from the AOI that are used to control equipment. The “O_” prefix is used to indicate that the tag controls a real-world output within the PLC.

Table 3-5 Output Tags

Parameter	Data Type	Description
O_StpMmtry	BOOL	Stop command momentary.
O_StrtMaintain	BOOL	Start command maintain.
O_StrtMmtry	BOOL	Start command momentary.

3.4 HMI Tags

HMI tags are inputs to the AOI that are set by the operator. The “H_” prefix is used to indicate that the tag modifies a PLC register from the operator interface.

3.4.1 Functionality

Table 3-6 HMI Functionality Tags

Parameter	Data Type	Description	Default Value
H_Auto	BOOL	Mode selection. False=Manual, True=Auto.	False
H_Cap	REAL	Motor capacity. Used to determine the flow rate when the motor is running.	0
H_Oos	BOOL	Out of service. When true, the motor cannot be called to run, and the alarms and statistics are disabled.	False
H_PermsvByp	DINT	Bypass the motor permissives. Set the individual bits to true to bypass permissives that are not met.	0
H_StatRst	BOOL	Motor statistics reset.	False
H_Stp	BOOL	Manual stop button.	False
H_Strt	BOOL	Manual start button.	False
H_StrtsHrLim	DINT	Starts per hour limit.	5

3.4.2 Alarms

Table 3-7 HMI Alarm Tags

Parameter	Data Type	Description	Default Value
H_EStpDlyTm	REAL	Emergency stop alarm delay time in seconds.	0
H_EStpEn	BOOL	Emergency stop alarm enable.	False
H_EStpHdsh	BOOL	Emergency stop alarm HMI handshake.	False
H_EStpOos	BOOL	Emergency stop alarm out of service.	False
H_EStpRst	BOOL	Emergency stop alarm reset.	False
H_FltDlyTm	REAL	Fault alarm delay time in seconds.	0
H_FltEn	BOOL	Fault alarm enable.	False
H_FltHdsh	BOOL	Fault alarm HMI handshake.	False
H_FltOos	BOOL	Fault alarm out of service.	False
H_FltRst	BOOL	Fault alarm reset.	False
H_FlwLsDlyTm	REAL	Flow loss alarm delay time in seconds.	0
H_FlwLsEn	BOOL	Flow loss alarm enable.	False
H_FlwLsHdsh	BOOL	Flow loss alarm HMI handshake.	False
H_FlwLsOos	BOOL	Flow loss alarm out of service.	False
H_FlwLsRst	BOOL	Flow loss alarm reset.	False
H_HiVibDlyTm	REAL	High vibration alarm delay time in seconds.	0
H_HiVibEn	BOOL	High vibration alarm enable.	False
H_HiVibHdsh	BOOL	High vibration alarm HMI handshake.	False
H_HiVibOos	BOOL	High vibration alarm out of service.	False

H_HiVibRst	BOOL	High vibration alarm reset.	False
H_HotBrngDlyTm	REAL	Hot bearing alarm delay time in seconds.	0
H_HotBrngEn	BOOL	Hot bearing alarm enable.	False
H_HotBrngHdsh	BOOL	Hot bearing alarm HMI handshake.	False
H_HotBrngOos	BOOL	Hot bearing alarm out of service.	False
H_HotBrngRst	BOOL	Hot bearing alarm reset.	False
H_HotMotDlyTm	REAL	Hot motor alarm delay time in seconds.	0
H_HotMotEn	BOOL	Hot motor alarm enable.	False
H_HotMotHdsh	BOOL	Hot motor alarm HMI handshake.	False
H_HotMotOos	BOOL	Hot motor alarm out of service.	False
H_HotMotRst	BOOL	Hot motor alarm reset.	False
H_NotRemDlyTm	REAL	Not in remote alarm delay time in seconds.	5
H_NotRemEn	BOOL	Not in remote alarm enable.	False
H_NotRunDlyTm	REAL	Not running alarm delay time in seconds.	5
H_NotRunEn	BOOL	Not running alarm enable.	False
H_OvrldDlyTm	REAL	Overload alarm delay time in seconds.	0
H_OvrldEn	BOOL	Overload alarm enable.	False
H_OvrldHdsh	BOOL	Overload alarm HMI handshake.	False
H_OvrldOos	BOOL	Overload alarm out of service.	False
H_OvrldRst	BOOL	Overload alarm reset.	False
H_PhFIDlyTm	REAL	Phase fail alarm delay time in seconds.	0
H_PhFIEn	BOOL	Phase fail alarm enable.	False
H_PhFIHdsh	BOOL	Phase fail alarm HMI handshake.	False
H_PhFIOos	BOOL	Phase fail alarm out of service.	False
H_PhFIRst	BOOL	Phase fail alarm reset.	False
H_PwrFIDlyTm	REAL	Power fail alarm delay time in seconds.	0
H_PwrFIEn	BOOL	Power fail alarm enable.	False
H_PwrFIHdsh	BOOL	Power fail alarm HMI handshake.	False
H_PwrFIOos	BOOL	Power fail alarm out of service.	False
H_PwrFIRst	BOOL	Power fail alarm reset.	False
H_Rst	BOOL	Motor lockout alarm reset.	False
H_RunDisEn	BOOL	Enable the run disable logic.	False
H_SealFIDlyTm	REAL	Seal fail alarm delay time in seconds.	0
H_SealFIEn	BOOL	Seal fail alarm enable.	False
H_SealFIHdsh	BOOL	Seal fail alarm HMI handshake.	False
H_SealFIOos	BOOL	Seal fail alarm out of service.	False
H_SealFIRst	BOOL	Seal fail alarm reset.	False
H_StrtStpFIEn	BOOL	Start/stop fail alarm enable.	False
H_StrtTrblDlyTm	REAL	Starter trouble alarm delay time in seconds.	0
H_StrtTrblEn	BOOL	Starter trouble alarm enable.	False
H_StrtTrblHdsh	BOOL	Starter trouble alarm HMI handshake.	False
H_StrtTrblOos	BOOL	Starter trouble alarm out of service.	False
H_StrtTrblRst	BOOL	Starter trouble alarm reset.	False

H_TrqDlyTm	REAL	Torque alarm delay time in seconds.	0
H_TrqEn	BOOL	Torque alarm enable.	False
H_TrqHdsh	BOOL	Torque alarm HMI handshake.	False
H_TrqOos	BOOL	Torque alarm out of service.	False
H_TrqRst	BOOL	Torque alarm reset.	False
H_TrqSdDlyTm	REAL	Torque shutdown alarm delay time in seconds.	0
H_TrqSdEn	BOOL	Torque shutdown alarm enable.	False
H_TrqSdHdsh	BOOL	Torque shutdown alarm HMI handshake.	False
H_TrqSdOos	BOOL	Torque shutdown alarm out of service.	False
H_TrqSdRst	BOOL	Torque shutdown alarm reset.	False
H_VfdTrblDlyTm	REAL	VFD trouble alarm delay time in seconds.	0
H_VfdTrblEn	BOOL	VFD trouble alarm enable.	False
H_VfdTrblHdsh	BOOL	VFD trouble alarm HMI handshake.	False
H_VfdTrblOos	BOOL	VFD trouble alarm out of service.	False
H_VfdTrblRst	BOOL	VFD trouble alarm reset.	False

3.5 PLC Logic Tags

PLC Logic tags are attributes internal to the AOI. The “P_” prefix is used to indicate that the tag is modified or calculated within the PLC.

3.5.1 Status Indication

Table 3-8 PLC Logic Status Indication Tags

Parameter	Data Type	Description	Historian
P_InAlm	BOOL	Indicates that an alarm is active.	No
P_InFl	BOOL	Motor in failure.	No
P_InhDlyDn	BOOL	Restart inhibit delay timer done.	No
P_InPermsv	BOOL	Motor in permissive.	No
P_InWarn	BOOL	Motor in warning.	No
P_MaxAlmPri	DINT	Displays the highest priority of the active alarms. 100=critical, 200=high, 300=medium, 400=low.	No
P_Permsv	DINT	Displays which permissives are active after checking for bypassing.	No
P_Rem	BOOL	Motor is in remote.	No
P_Rst	BOOL	Resets motor alarms on transition from remote to local, or from H_Rst.	No
P_Run	BOOL	Motor is running.	Yes
P_StpReq	BOOL	Stop requested. Motor has been called to stop, but is still running.	No
P_StrtReq	BOOL	Start requested. Motor has been called to start, but is not running.	No

3.5.2 Alarms

Table 3-9 PLC Logic Alarm Tags

Parameter	Data Type	Description	Alarm
P_EStp	BOOL	Emergency stop.	Yes
P_Flt	BOOL	Fault.	Yes
P_FlwLs	BOOL	Flow loss.	Yes
P_HiVib	BOOL	High vibration.	Yes
P_HotBrng	BOOL	Hot bearing.	Yes
P_HotMot	BOOL	Hot Motor.	Yes
P_NotRem	BOOL	Not in remote.	Yes
P_NotRun	BOOL	Not running.	Yes
P_OvrlD	BOOL	Overload.	Yes
P_PhFl	BOOL	Phase fail.	Yes
P_PwrFl	BOOL	Power fail.	Yes
P_RunDis	BOOL	Motor run disable.	Yes
P_SealFl	BOOL	Seal fail.	Yes
P_StrtsExcd	BOOL	Starts per hour limit exceeded.	Yes
P_StrtStpFl	BOOL	Start/stop fail.	Yes
P_StrtTrbl	BOOL	Starter trouble.	Yes
P_Trq	BOOL	Torque warning.	Yes
P_TrqSd	BOOL	Torque shutdown.	Yes
P_VfdTrbl	BOOL	VFD trouble.	Yes

3.5.3 Statistics

Table 3-10 PLC Logic Statistics Tags

Parameter	Data Type	Description
P_OffTmLRun	REAL	Off time last run cycle.
P_OffTmLRunHr	DINT	Off time last run cycle hours.
P_OffTmLRunMin	REAL	Off time last run cycle minutes remainder.
P_OffTmRun	REAL	Off time this run cycle.
P_OffTmRunHr	DINT	Off time this run cycle hours.
P_OffTmRunMin	REAL	Off time this run cycle minutes remainder.
P_RTmCmtv	REAL	Run time cumulative.
P_RTmLMth	REAL	Run time last month.
P_RTmLMthHr	DINT	Run time last month hours.
P_RTmLMthMin	REAL	Run time last month minutes remainder.
P_RTmLRun	REAL	Run time last run cycle.
P_RTmLRunHr	DINT	Run time last run cycle hours.
P_RTmLRunMin	REAL	Run time last run cycle minutes remainder.
P_RTmLWk	REAL	Run time last week.
P_RTmLWkHr	DINT	Run time last week hours.

P_RTmLWkMin	REAL	Run time last week minutes remainder.
P_RTmLYr	REAL	Run time last year.
P_RTmLYrHr	DINT	Run time last year hours.
P_RTmLYrMin	REAL	Run time last year minutes remainder.
P_RTmMth	REAL	Run time this month.
P_RTmMthHr	DINT	Run time this month hours.
P_RTmMthMin	REAL	Run time this month minutes remainder.
P_RTmRun	REAL	Run time this run cycle.
P_RTmRunHr	DINT	Run time this run cycle hours.
P_RTmRunMin	REAL	Run time this run cycle minutes remainder.
P_RTmTday	REAL	Run time today.
P_RTmTdayHr	DINT	Run time today hours.
P_RTmTdayMin	REAL	Run time today minutes remainder.
P_RTmWk	REAL	Run time this week.
P_RTmWkHr	DINT	Run time this week hours.
P_RTmWkMin	REAL	Run time this week minutes remainder.
P_RTmYday	REAL	Run time yesterday.
P_RTmYdayHr	DINT	Run time yesterday hours.
P_RTmYdayMin	REAL	Run time yesterday minutes remainder.
P_RTmYr	REAL	Run time this year.
P_RTmYrHr	DINT	Run time this year hours.
P_RTmYrMin	REAL	Run time this year minutes remainder.
P_StrtsCmtv	DINT	Number of starts cumulative
P_StrtsHr	DINT	Number of starts this hour.
P_StrtsLHr	DINT	Number of starts last hour.
P_StrtsLMth	DINT	Number of starts last month.
P_StrtsMth	DINT	Number of starts this month.
P_StrtsTday	DINT	Number of starts today.
P_StrtsYday	DINT	Number of starts yesterday.
P_StrtsYr	DINT	Number of starts this year.