Techrite Controls
TAIS Integrated Ignition Module

Part numbering scheme

The chart on the following pages details the TAIS Part numbering system.
This information relates to TAIS software version 0.09.

#	Parameter	Possible Values for Parameter				
1	Model Type	TAIS				
2	Combustion Fan	C Combustion Fan Fitted	OR	0 No Combustion Fan Fitted		
3	Pressure Switch	P Pressure Switch Fitted	OR	D Dual Pressure Switches Fitted	OR	0 No Pressure Switch(es)
			OR	T Fan Tacho Feedback enabled		
		-				
4	Local / Remote Flame Sense	L Local Sense	OR	R Remote Sense		
5	Ignition Attempts	1 1 try for ignition	OR	2 2 tries	Max. value	5 5 tries
6	Trial for Ignition Time	3.5 3.5s	OR	10 10s	Max. value	15 15s
7	Retry window	A	Blank Field: Retry window = 2 x Trial for ignition time; A=15s, B=30s, C=45s, D=60s…			H 120s Maximum
8	Single Retry	- Blank: Single retry	OR	N No Single Retry		
9	Single / Dual Gas Outputs	S Single gas output	OR	D Dual gas outputs		
10	Delay –Gas Low to Gas High	 No Delay	OR	100 100s delay	Max. value	999 999s
		-				
11	Delay – Gas High to Low Valve OFF	 Low valve stays ON	OR	5 5s delay to LOW gas OFF		Note: Only valid for Dual gas valves!
		-				Only included if above option is non zero.
12	Pre Purge Time	0 No Pre-purge	OR	5 5s Pre Purge Time	Max. value	500 500s

13	Inter Purge Time	[0] No Inter Purge	OR	[5] 5s Inter Purge	Max. value	[500] 500s
14	Post Purge Time	[0] No Post Purge Time	OR	[05] 5s Post Purge	Max. value	[500] 500s
15	Customisation Parameter.	[RC] Remote control Interface enabled [HR] Heat Request Inputs enabled (ON/ OFF Mode) [HRD] Heat Request Inputs enabled (Dual Mode) [HRT] Heat Request Inputs enabled (Tri Mode) [HRQ] Heat Request Inputs enabled (Quad Mode) [VSxx] Vent Switch input enabled. Switch checked after xx seconds [LILO] Low voltage Input. Function – External module enable Low voltage Output. Function – Lockout LED				
16	Valve Overlap Period	This parameter is only used for HRD, HRT, HRQ customizations (above)		[-] Blank: 1.0s overlap	OR	[t] t = Time period 0.0 to 25.0s
17	Non Volatile Lockout	[V] Lockout state is reset by power cycling unit	OR	[NV] Non Volatile Lockout is Enabled		
18	Delayed Module Startup	[60] (seconds)	OR	[ ] Blank = No delayed Start		Seconds of delay

Example Module Part Numbers:

Example #1

TAIS	**0**	**0**	**-**	**R**	**3**	**4.5**	**-**	**S**	**-**	**60**	**315**	**0**	**LILO**	**V**

0	No Combustion Fan fitted
0	No Pressure Switch fitted
R	Remote Flame Sense
3	Attempt Ignition 3 times
4.5	Trial for ignition Time of 4.5s
S	Single Gas Valve
60	Pre purge = 60s
315	Inter Purge time of 315s
0	Post Purge = 0s
LILO	Low voltage input and output
V	Volatile Lockout (power OFF to reset)

Notes on each parameter in the TCAIS Part number field

Model Type

The designation TAIS refers to this family of EN298 approved controls

Combustion Fan

Used when a combustion fan is required for burner operation

Pressure Switch [Not Fitted (0), Single (P) , Dual (D) , Tacho Feedback (T)]

The pressure switch input is used to confirm the operation of the combustion fan.
This parameter is only relevant when a combustion fan is fitted.
The module will attempt a re-ignition if the pressure switch opens during normal operation. Post and pre purge will be performed if these parameters are enabled.

The 'Dual Pressure Switches Fitted' option will prove both the conventional pressure switch input, along with a second pressure switch fitted to input: 'High Voltage Input #1'

The 'Tacho Feedback' option is used to prove a fan impeller with a signal connected to input: 'Low Voltage Input #2'. This input is used in lieu of the second pressure switch described above.

Local / Remote Flame Sense

Local Flame sense utilizes a single probe for both ignition and flame detection.
Remote flame sense utilizes two separate probes – one for ignition and one for flame detection.

Ignition Attempts

The maximum number of attempts which will be made by the module to establish a flame.

Trial for Ignition Time

This time represents the duration of the sparking for each attempt of ignition.
The spark shall stop during the Trial for ignition time whenever a flame is sensed.

Retry Window

This option relates to module operation when the flame signal is lost. Module can be configured for 1 retry per retry window. More than 1 re-ignition attempt within the retry window period will cause a lockout. This option will only be used if the single retry option is enabled, and the module has no pre or post purge times.

Single Retry

This option allows for the unit to retry ignition on loss of flame, after the unit is operating normally.
If the module is configured for pre purge or post purge, the module will proceed to post purge and restart via pre purge. Otherwise the unit will re-spark to attempt a re-ignition.
The unit records if a retry attempt has been made. No more retries may be completed unless the 'Retry Window' option above is configured to a non zero value.

Single / Dual Gas Outputs

Allows for one or two gas valve outputs

Low to High Gas Delay

This delay allows the LOW gas output to be active for a predetermined period prior to the HIGH gas output being activated.
This parameter is only relevant for modules with a dual gas output.

Low Valve OFF after High Valve ON

The low gas valve may be configured to turn OFF a fixed period after the High gas valve turns ON. This option may be used in applications where the pilot function must turn off after main ignition.
This parameter is only relevant for modules with a dual gas output.

Pre Purge Time

The time period the combustion fan will run, prior to turning on the gas and ignition.

Inter Purge Time

The time period the combustion fan will run, prior to turning on the gas and ignition.

Post Purge Time

The time period the combustion fan will run after the request for heat signal is removed. This option requires the heat request input function to be enabled.

Customisation Parameter

RC - Module enabled for Remote Control interface
HR - High Voltage heat request inputs are enabled (ON/ OFF Mode) – see 'Heat Request' section below
HRD - High Voltage heat request inputs are enabled (Dual Mode) – see 'Heat Request' section below
HRT - High Voltage heat request inputs are enabled (Tri Mode) – see 'Heat Request' section below
HRQ - High Voltage heat request inputs are enabled (Quad Mode) – see 'Heat Request' section below
VSxx - High voltage input #1 is used for remote vent switch operation. The TAIS shall monitor an external vent switch. If the input does not activate after the Vent Switch period, the module will turn off.
LILO - Low voltage Inputs and Low voltage Outputs are enabled.

Non-Volatile Lockout

When a module is configured for Non Volatile lockout, output GP1 will indicate that a lockout has occurred. Input HV#2 is used to reset the module. At least a 0.5s OFF state, followed by at least a 0.5s ON state is required on input HV#2 to reset the module.

Power On delay

Module operation will not start for a set period after power ON.

Heat Request Operation

ON/ OFF MODE
-Heat request input(s) may be used to enable ON/ OFF gas operation

Heat Request Input 1	Heat Request Input 2	Gas Valve Operation
OFF	OFF	HIGH VALVE OFF, LOW VALVE OFF
OFF	ON	HIGH VALVE ON, LOW VALVE ON
ON	OFF	HIGH VALVE ON, LOW VALVE ON
ON	ON	HIGH VALVE ON, LOW VALVE ON

DUAL MODE
-Heat request input(s) may be used to enable HIGH gas operation

Heat Request Input 1	Heat Request Input 2	Gas Valve Operation
OFF	OFF	HIGH VALVE OFF, LOW VALVE ON
OFF	ON	HIGH VALVE ON, LOW VALVE ON
ON	OFF	HIGH VALVE ON, LOW VALVE ON
ON	ON	HIGH VALVE ON, LOW VALVE ON

TRI MODE
– Heat request inputs may be used to enable LOW / MEDIUM / HIGH gas operation
– At least one valve is always ON

Heat Request Input 1	Heat Request Input 2	Gas Valve Operation
OFF	OFF	HIGH VALVE OFF, LOW VALVE ON
OFF	ON	HIGH VALVE OFF, LOW VALVE ON
ON	OFF	HIGH VALVE ON, LOW VALVE OFF
ON	ON	HIGH VALVE ON, LOW VALVE ON

QUAD MODE
– Heat request inputs may be used to enable LOW / MEDIUM / HIGH gas operation

Heat Request Input 1	Heat Request Input 2	Gas Valve Operation
OFF	OFF	HIGH VALVE OFF, LOW VALVE OFF
OFF	ON	HIGH VALVE OFF, LOW VALVE ON
ON	OFF	HIGH VALVE ON, LOW VALVE OFF
ON	ON	HIGH VALVE ON, LOW VALVE ON

Notes for the different heat request modes:
1/ The modules will always start the ignition using the LOW GAS valve. When the flame is established, the high/ low valves will be activated according to the above tables.
2/ The modules have an 'overlap' timing parameter to ensure the valve openings overlap each other. This prevents one gas valve going OFF before a flame has been established on the other burner.
This timing parameter is called ‘VALVE_TIME_OVERLAP_100ms’