International® A26 (2022)

Overview: *Engine Speed Control-Remote*

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General Overview: Remote Engine Speed Control

The Remote Engine Speed Control (RESC) feature allows the operator control engine speed from outside the vehicle cab, usually in support of (PTO) Power Take Off operations. This feature may also be known as Remote Accelerator Pedal Position (RAPP). Control over engine speed is accomplished by using remote mounted switches and/or throttle controls to turn on the RESC and select the desired engine speed.

The RESC and RAPP features use a combination of remote preset, remote variable and remote pedal enable inputs, which allow the operator to choose the mode of engine speed control operation.

For Remote Engine Speed Control (RESC) applications, additional switches may be required to select preset or variable engine control.

For Remote Accelerator Pedal Position (RAPP) applications, an additional remote throttle control is required to control engine speed.

This document will address unique remote engine speed control functionality for the A26.

Description and Operation

> *NOTE: Refer to the vehicle operation and maintenance manual, as well as the A26 engine operation and maintenance manual, for additional information on operation and indications.*

The RESC feature remotely provides the operator engine speed control to any installed auxiliary devices. This remote control panel is located outside of the cab by the installer of the auxiliary device.

Operation

The operational control of the RESC feature consists of, up to, 5 switches located on a control panel outside the cab of the vehicle:

- **"Remote Preset"** switch allows the operator to enable or disable the remote preset AESC functionality.
- **"Remote Variable"** switch allows the operator to enable or disable the remote variable AESC functionality.
- **"Resume/Accel"** switch allows the operator to ramp up the engine or cycle through the presets.
- **"Set/Coast"** switch allows the operator to ramp down the engine or cycle through the presets.
- **"Remote Pedal Enable"** switch provides additional control to enable remote pedal operation.

The following visual indications may also be remotely mounted and are used in conjunction with RESC:

- Amber Warning Lamp (AWL)
- Red Stop Lamp (RSL)
- Engine Running Output

Remote Preset Switch

Remote preset engine speed control allows the operator to select up to 6 preset engine speeds from outside the cab while the vehicle is stationary. This input will also enable the remote pedal.

Remote Variable Switch

Remote variable allows the operator to select any engine speed within the AESC boundaries using controls and a physical switch located outside the cab. This input will also enable the remote pedal.

Remote Pedal

This optional feature gives the operator control of the engine speed outside the cab similar to that of the in-cab accelerator pedal.

Split-Shaft PTO

This optional feature is used in conjunction with RESC and is targeted for applications that use a transfer case or auxiliary driveshaft.

Feature Interaction

The RESC feature interacts with the following engine features:

- In-Cab Engine Speed Control
- Engine Cooling Fan
- Idle Shutdown TIMER (IST)
- Cold Ambient Protection (CAP)

Programmable Parameters

The following programmable parameters are required for RESC and PTO operation. These parameters should be programmed to the engine speed control operation which will best suit the vehicle conditions expected.

Parameters indicated as "Customer Programmable" can be adjusted differently than the production assembly plant setting to meet the customer's needs. If the parameter is indicated as non-customer programmable, the parameter setting is preset from the factory and can't be changed without authorization.

> NOTE: There are multiple available RESC configurations. Please see the Parameter Setup section for a few examples and specific setup instructions.

Parameters for Remote Pedal Configurations:

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
AESC - Remote Pedal Enable (A802 008)	This parameter sets the driveline mode for PTO operation: **Note:** Must be set to Enable if engine speed is desired to be controlled by a remote throttle pedal.	- Disable - Enable	YES	Customer Chosen
Remote Accelerator Enable Switch (A805 02C)	This parameter enables another input to the ECM that must be applied to allow the remote pedal input to be affect the engine speed: **Note:** (A802 008) AESC - Remote Pedal Enable must also be enabled.	- Disable - Enable	YES	Customer Chosen
Remote Accelerator Switch Input Selection (A800 00F)	This parameter sets how the remote accelerator switch input signal is provided to the ECM - (Hardwire or CAN).	- Hardwired Input - CAN Input 1	YES	Customer Chosen
Remote Accelerator Pedal Input Selection (A800 014)	This parameter sets how the accelerator pedal input signal is provided to the ECM - (Hardwire or CAN).	- Hardwired Input - CAN Input 1	YES	Customer Chosen

Parameters for Split Shaft PTO Configurations:

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Vehicle Speed Source Selection When Split Shaft is Active (A801 007)	This parameter sets the speed signal source during split shaft operation	- Wheel Speed Selected When Split Shaft is Enabled - Output Shaft Speed Selected When Split Shaft is Enabled	YES	Customer Chosen
Transfer Case Input Mode Select (A800 002)	This parameter sets the split shaft mode for AESC operation. **If set to (**Driveline Engaged**):** Split shaft is disabled. **If set to (**Split Shaft Engaged**):** Split shaft is enabled.	- Driveline Engaged - Split Shaft Engaged	YES	Customer Chosen **NOTE:** Must be set to Split Shaft Engaged if Split Shaft operation is desired.

Parameters for AESC Remote Configurations:

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Auxiliary Engine Shutdown (A801 021)	Select this parameter to enable the Auxiliary Engine Shutdown. **NOTE: This feature may not be operational in all models.**	- Enable - Disable	YES	Customer Chosen
Auxiliary Engine Shutdown Switch Input Selection (A800 016)	This parameter sets how the Auxiliary Engine Shutdown Switch Input signal is provided to the ECM - (Hardwire or CAN). • **If set to (**Hardwired Input**)** – The switch input is on a hardwired circuit • **If set to (**CAN Input**)** The switch input is provided on the data link	- Hardwired Input - CAN Input 1	YES	This has never worked.
AESC Speed Control - Mode (A802 004)	This parameter determines the conditions that the Engine Speed Control (AESC) feature will be functional. Set this parameter to enable AESC operation and to choose which inputs are used for control. • **If set to (**Disable**)** – The AESC functionality is disabled. **If set to (**In Cab Operation Only**)** – Only the in-cab inputs will be able to control AESC. **If set to (**Operation Remote and In Cab**)** – Both remote and in-cab inputs will be able to control AESC **(See Note 1 & 2)**. • **If set to (**Remote**)** – Only the remote AESC inputs will be able to control AESC **(See Note 2)**. **Note -** The last input received will take priority when Remote and In Cab Operation is selected.	- Disable - Remote Operation Only - In Cab Operation - Remote and In Cab Operation	YES	Customer Chosen
AESC – In Cab Mode (A802 006)	Set this parameter after selecting In-Cab Or Remote and In-Cab Operation to determine which AESC mode is active. • **If set to (**None**)** – The switches will not be used. Refer to the Remote Engine Speed Control document. • **If set to (**Stationary Preset**)** – The switches will be used to select up to 6 preset engine speeds. Refer to the Stationary Preset section for more information. • **If set to (**Stationary Variable**)** – The switches will be used to adjust the engine speed variably. Refer to the Stationary Variable section for more information. • **If set to (**Mobile Variable**)** – The switches will be used to adjust the engine speed to a desired set point to allow for vehicle movement. Refer to the Mobile Variable section for more information.	- None - Stationary Preset - Stationary Variable - Mobile Variable	YES	Customer Chosen
AESC – In Cab Operator Interface On/Off (A802 007)	Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation. • **If set to (**0**)** – The accelerator, brake, and clutch are inputs used for AESC operation. • **If set to (**1**)** – The accelerator, brake, and clutch will be ignored during AESC operation. • **Note:** Use parameters (A802 00D), (A802 00E) and (A802 01D) to provide the specific input options.	- Off - On	YES	Customer Chosen

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
AESC - Disable with Clutch (A802 00D)	Choosing this feature will allow the operator to deactivate AESC operation when the clutch pedal is pressed **(See Note 1)**. Otherwise the clutch pedal is ignored and will not deactivate the AESC. **Note 1:** The AESC – In Cab Operator Interface On/Off parameter must be set to (0) for this parameter to be recognized by the feature.	- Clutch is Ignored - Clutch Disables AESC	YES	Customer Chosen
AESC - Disable with Service Brake (A802 00E)	Choosing this feature will allow the operator to deactivate AESC operation when the brake pedal is pressed. Otherwise the brake pedal is ignored and will not deactivate the AESC. **Note 1:** The AESC – In Cab Operator Interface On/Off parameter must be set to (0) for this parameter to be recognized by the feature.	- Service Brake is Ignored - Service Brake Disables AESC	YES	Customer Chosen
AESC - Disable with Parking Brake (A802 01D)	Choosing this feature will allow the operator to deactivate AESC operation when the brake pedal is pressed. Otherwise the brake pedal is ignored and will not deactivate the AESC. **Note 1:** The AESC – In Cab Operator Interface On/Off parameter must be set to (0) for this parameter to be recognized by the feature.	- Parking Brake is Ignored - Parking Brake Disables AESC	YES	Customer Chosen
AESC - Remote Pedal Enable (A802 008)	This parameter sets the driveline mode for AESC operation: **Note:** Must be set to Enable if engine speed is desired to be controlled by a remote throttle pedal.	- Disable - Enable	YES	Customer Chosen
AESC Remote Preset Standby Speed for On/Off Switch Operation (A802 019)	This parameter sets the standby speed when remote Preset AESC is activated.	600 – 3000 RPM	YES	Customer Chosen
AESC Throttle Control - Preset Engine Speed 1 (Set/Coast) (A802 009)	This parameter sets the running engine speed set point that will be maintained when the First AESC preset speed is selected. Note 1: Presets speeds that will not be used can be set to 0 rpm. Refer to the Stationary Preset section for more information.	600 – 3000 RPM Range must be between the following settings: • AESC - Preset Engine Speed Activation (CRUISE ON) (A802 017) AESC Maximum Engine Speed (A802 00C)	YES	Customer Chosen **(See Note 1)**
AESC - Preset Engine Speed 2 (Resume/Accel) (A802 00A)	This parameter sets the running engine speed set point that will be maintained when the Second AESC preset speed is selected. Note 1: Presets speeds that will not be used can be set to 0 rpm. Refer to the Stationary Preset section for more information.	600 – 3000 RPM Range must be between the following settings: • AESC - Preset Engine Speed Activation (CRUISE ON) (A802 017) • AESC Maximum Engine Speed	YES	Customer Chosen **(See Note 1)**

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
		(A802 00C)		
AESC - Maximum Engine Speed (A802 00C)	The maximum engine speed that can be reached using any AESC controls. **Note -** This parameter must be set properly to protect AESC related equipment.	• Low Idle – High Idle (rpm)	YES	Customer Chosen **(See Note 1)**
AESC - Preset Engine Speed 3 (A802 010)	This parameter sets the running engine speed set point that will be maintained when the Third AESC preset speed is selected. **Note 1:** Presets speeds that will not be used can be set to 0 rpm. Refer to the Stationary Preset section for more information.	600 – 3000 RPM Range must be between the following settings: • **AESC - Preset Engine Speed Activation (CRUISE ON) (A802 017)** **AESC** Maximum Engine Speed (A802 00C)	YES	Customer Chosen **(See Note 1)**
AESC - Preset Engine Speed 4 (A802 011)	This parameter sets the running engine speed set point that will be maintained when the Fourth AESC preset speed is selected. **Note 1:** Presets speeds that will not be used can be set to 0 rpm. Refer to the Stationary Preset section for more information.	600 – 3000 RPM Range must be between the following settings: • **AESC - Preset Engine Speed Activation (CRUISE ON) (A802 017)** • **AESC** Maximum Engine Speed (A802 00C)	YES	Customer Chosen **(See Note 1)**
AESC - Preset Engine Speed 5 (A802 012)	This parameter sets the running engine speed set point that will be maintained when the Fifth AESC preset speed is selected. **Note 1:** Presets speeds that will not be used can be set to 0 rpm. Refer to the Stationary Preset section for more information.	600 – 3000 RPM Range must be between the following settings: • **AESC - Preset Engine Speed Activation (CRUISE ON) (A802 017)** • **AESC** Maximum Engine Speed (A802 00C)	YES	Customer Chosen **(See Note 1)**

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
AESC - Preset Engine Speed 6 (A802 013)	This parameter sets the running engine speed set point that will be maintained when the Sixth AESC preset speed is selected. **Note 1:** Presets speeds that will not be used can be set to 0 rpm. Refer to the Stationary Preset section for more information.	600 – 3000 RPM Range must be between the following settings: • AESC - Preset Engine Speed Activation (CRUISE ON) (A802 017) • AESC - Maximum Engine Speed (A802 00C)	AESC - Preset Engine Speed 6 (A802 013)	This parameter sets the running engine speed set point that will be maintained when the Sixth AESC preset speed is selected. **Note 1:** Presets speeds that will not be used can be set to 0 rpm. Refer to the Stationary Preset section for more information.
AESC - Engine Speed Limit with VSS Fault (A802 014)	This parameter sets the maximum engine speed allowed when an active vehicle speed sensor (VSS) fault exists and AESC engine speed control is active. Above this engine speed, AESC cannot be activated, however; if this engine speed is exceeded while in AESC then AESC will be deactivated. This parameter might be useful in preventing the operator from over speeding or over loading the equipment.	Low Idle – High Idle (rpm)	YES	Customer Chosen
AESC - Maximum Engine Load (A802 015)	The engine speed control will be limited or deactivated if this parameter value is reached. **Note -** The functionality of this parameter is dependent on the AESC Speed Controlled to Engine Load (A802 01C) parameter setting.	Set between 30 and 100% based on the recommendations for the AESC equipment.	YES	Customer Chosen
AESC - Maximum Engine Load Time (A802 01A)	This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.	Set between 0 and 32 seconds.	YES	A setting of 5 seconds is recommended.
AESC - Preset Engine Speed Select (A802 01B)	This parameter sets the first selected preset level (1, 2, 3, 4, 5, or 6) when remote Preset AESC is activated. **Note -** This parameter can only have six valid preset values as 1, 2, 3, 4, 5 or 6.	- Off - Preset Speed 1 - Preset Speed 2 - Preset Speed 3 - Preset Speed 4 - Preset Speed 5 - Preset Speed 6	YES	Customer Chosen
AESC Speed controlled to Engine Load (A02 01C)	This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. • **If set to (Off)** – Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting. • **If set to (On)** – Engine speed will be limited if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting.	- Off - On	YES	A setting of On is recommended.
AESC Disable with Parking Brake (A802 01D)	This parameter selects whether the AESC engine speed control is deactivated if the park brake is released. • **If set to (Parking Brake Does Not Change)** – Engine speed control will not be deactivated if the park brake is released. • **If set to (Parking Brake Disables)** – Engine speed control will be deactivated if the park brake is released.	- Parking Brake Does Not Change - Parking Brake Disables	YES	Customer Chosen

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Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Cruise Control/AESC On/Off Switch Input Selection (A800 00C)	This parameter selects the source for the Cruise Control/AESC On/Off Switch. ▪ **If set to (**Hardwired Input**) – T**he Cruise Control/AESC On/Off Switch signal is sensed from a hardwired input. ▪ **If set to (**Can**) – T**he Cruise Control/AESC On/Off Switch is sensed on the J1939 data link.	- Hardwired Input - Can	YES	Customer Chosen
Cruise Control **Set/Coast** Switch Input Selection (A800 00D)	This parameter selects the source for the Cruise Control Resume/Accelerate Switch. ▪ **If set to (**Hardwired Input**) – T**he Cruise Control Resume/Accelerate Switch signal is sensed from a hardwired input. ▪ **If set to (Can) – T**he Cruise Control Resume/Accelerate Switch is sensed on the J1939 data link. ▪ **If set to (Both) – T**he Cruise Control Resume/Accelerate Switch is sensed on both the hardwired input and the J1939 data link	- Hardwired Input - Can - Both	YES	- Both
Cruise Control Resume/Accelerate Switch Input Selection (A800 00E)	This parameter selects the source for the Cruise Control Resume/Accelerate Switch. ▪ **If set to (**Hardwired Input**) – T**he Cruise Control Resume/Accelerate Switch signal is sensed from a hardwired input. ▪ **If set to (**Can**) – T**he Cruise Control Resume/Accelerate Switch is sensed on the J1939 data link. ▪ **If set to (**Both**) – T**he Cruise Control Resume/Accelerate Switch is sensed on both the hardwired input and the J1939 data link.	- Hardwired Input - Can - Both	YES	- Both
Remote AESC Programmed Speed Switch Input Selection (A800 011)	This parameter sets how the programmed speed switch input signal is provided to the ECM - (Hardwire or CAN). ● **If set to (**Hardwired**) –** The switch input is on a hardwired circuit ● **If set to (**CAN**)** The switch input is provided on the data link	- Hardwired Input - CAN Input 1	YES	Customer Chosen
Master Switch for Setting Source Addresses (A800 015)	This parameter selects how the ECM sees the switch for setting Source addresses. ● **If set to (**Individual Selection**) –** The switch input is on a hardwired circuit ● **If set to (**CAN1**)** The switch input is provided on the data link	- Individual Selection - CAN	YES	Individual Selection

Preliminary Parameter Setup

Use the following settings to get the engine to respond to the ECM inputs.

After the programming is set so that the engine will respond, adjust each parameter, one at a time, to achieve optimal performance.

ID	Name	Setting	Value
	Setup for VARIABLE operation		
A802 002	AESC Remote Preset On/Off Switch Operation Enable	Disable	
A802 004	AESC Speed Control - Mode	remote or remote and in cab	
A802 005	AESC - Maximum Vehicle Speed	match pid A900 000	MPH
A802 006	AESC - In Cab Mode	stationary variable	
A802 007	AESC In-Cab Operator Interface On / Off	disable	
A802 008	AESC - Remote Pedal Enable	enable	
A802 009	AESC - Preset Engine Speed 1 (Set)	xxxx	RPM
A802 00A	AESC - Preset Engine Speed 2 (Resume)	xxxx	RPM
A802 00B	AESC - Engine Speed Throttle Ramp Rate	100	RPM/s
A802 00C	AESC - Maximum Engine Speed	xxxx	RPM
A802 00D	AESC - Disable With Clutch	clutch disables	
A802 00E	AESC - Disable with Brake	brake disables	
A802 00F	AESC - Disable with APS	APS overrides set speed	
A802 010	AESC - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	RPM
A802 011	AESC - Preset Engine Speed 4	xxxx	RPM
A802 012	AESC - Preset Engine Speed 5	xxxx	RPM
A802 013	AESC - Preset Engine Speed 6	xxxx	RPM
A802 014	AESC - Engine Speed Limit with VSS Fault	600	RPM
A802 015	AESC - Maximum Engine Load	100	%
A900	AESC - Vehicle Speed Limit	match pid A802 005	MPH

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A802 017	AESC - Minimum Engine Speed	600	RPM
A802 018	AESC - Engine Speed Throttle Down Ramp Rate	100	RPM/s
A802 019	AESC - Bump Up/Down Step	100	RPM
A802 01A	AESC - Maximum Engine Load Time	8	s
A802 01B	AESC - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)	
A802 01C	AESC - Speed Controlled to Engine Load	off	
A800 000	Transfer Case Switch Signal Source	If available, for split shaft mode, must be set to Hardwired	
A800 002	Transfer Case Input Mode Select	Driveline engaged or split shaft engaged. If split shaft, C3-27 needs a ground when split shaft operation is enabled	
A805 02C	Remote Accelerator Enable Switch	disable	
A800 009	Parking Brake Switch Input Selection	can	
A800 00A	Brake Pedal Switch Input Selection	can	
A800 00B	Clutch Pedal Switch Input Selection	can	
A800 00C	Cruise Control/AESC On/Off Switch Input Selection	can	
A800 00D	Cruise Control Set/Coast Switch Input Selection	both	
A800 00E	Cruise Control Resume/Accelerate Switch Input Selection	both	
A800 00F	Remote Accelerator Switch Input Selection	can	
A800 010	Engine Brake Switch 1 Input Selection	can	
A800 011	Remote AESC Programmed Speed Switch Input Selection	can	
A800 012	Remote AESC Variable Speed Switch Input Selection	Hardwire	
A800 00F	Remote Accelerator Pedal Input Selection		

ID	Name	Setting	Value
A800 015	Master Switch for Setting Source Addresses	hardwire	

Setup for PRESET operation

ID	Name	Setting	Value
A802 002	AESC Remote Preset On/Off Switch Operation Enable	Disable	
A802 004	AESC Speed Control - Mode	remote or remote and in cab	
A802 005	AESC - Maximum Vehicle Speed	match pid A900 000	MPH
A802 006	AESC - In Cab Mode	stationary preset	
A802 007	AESC In-Cab Operator Interface On / Off	disable	
A802 008	AESC - Remote Pedal Enable	enable	
A802 009	AESC - Preset Engine Speed 1 (Set)	xxxx	RPM
A802 00A	AESC - Preset Engine Speed 2 (Resume)	xxxx	RPM
A802 00B	AESC - Engine Speed Throttle Ramp Rate	100	RPM/s
A802 00C	AESC - Maximum Engine Speed	xxxx	RPM
A802 00D	AESC - Disable With Clutch	clutch disables	
A802 00E	AESC - Disable with Brake	brake disables	
A802 00F	AESC - Disable with APS	APS overrides set speed	
A802 010	AESC - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	RPM
A802 011	AESC - Preset Engine Speed 4	xxxx	RPM
A802 012	AESC - Preset Engine Speed 5	xxxx	RPM
A802 013	AESC - Preset Engine Speed 6	xxxx	RPM
A802 014	AESC - Engine Speed Limit with VSS Fault	600	RPM
A802 015	AESC - Maximum Engine Load	100	%
A900	AESC - Vehicle Speed Limit	match pid 75012	MPH

000			
A802 017	AESC - Minimum Engine Speed	600	RPM
A802 018	AESC - Engine Speed Throttle Down Ramp Rate	100	RPM/s
A802 019	AESC - Bump Up/Down Step	100	RPM
A802 01A	AESC - Maximum Engine Load Time	8	s
A802 01B	AESC - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)	
A802 01C	AESC - Speed Controlled to Engine Load	off	
A800 000	Transfer Case Switch Signal Source	If available, for split shaft mode, must be set to Hardwired	
A800 002	Transfer Case Input Mode Select	Driveline engaged or split shaft engaged. If split shaft, C3-27 needs a ground when split shaft operation is enabled	
A805 02C	Remote Accelerator Enable Switch	disable	
A800 009	Parking Brake Switch Input Selection	can	
A800 00A	Brake Pedal Switch Input Selection	can	
A800 00B	Clutch Pedal Switch Input Selection	can	
A800 00C	Cruise Control/AESC On/Off Switch Input Selection	can	
A800 00D	Cruise Control Set/Coast Switch Input Selection	both	
A800 00E	Cruise Control Resume/Accelerate Switch Input Selection	both	
A800 00F	Remote Accelerator Switch Input Selection	hardwire	
A800 010	Engine Brake Switch 1 Input Selection	can	
A800 011	Remote AESC Programmed Speed Switch Input Selection	hardwire	
A800 012	Remote AESC Variable Speed Switch Input Selection	can	
A800 00F	Remote Accelerator Pedal Input Selection	hardwire	

ID	Name	Setting	Value
A800 015	Master Switch for Setting Source Addresses	hardwire	

Remote throttle and preset speed Setup			
Something using out riggers for preset and then remote throttle for Crane, derrick.			
ID	**Name**	**Setting**	**Value**
A802 002	AESC Remote Preset On/Off Switch Operation Enable	Disable	
A802 004	AESC Speed Control - Mode	remote or remote and in cab	
A802 005	AESC - Maximum Vehicle Speed	match pid A900 000	MPH
A802 006	AESC - In Cab Mode	stationary preset	
A802 007	AESC In-Cab Operator Interface On / Off	disable	
A802 008	AESC - Remote Pedal Enable	enable	
A802 009	AESC - Preset Engine Speed 1 (Set)	xxxx	RPM
A802 00A	AESC - Preset Engine Speed 2 (Resume)	xxxx	RPM
A802 00B	AESC - Engine Speed Throttle Ramp Rate	100	RPM/s
A802 00C	AESC - Maximum Engine Speed	xxxx	RPM
A802 00D	AESC - Disable With Clutch	clutch disables	
A802 00E	AESC - Disable with Brake	brake disables	
A802 00F	AESC - Disable with APS	APS overrides set speed	
A802 010	AESC - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	RPM
A802 011	AESC - Preset Engine Speed 4	xxxx	RPM
A802 012	AESC - Preset Engine Speed 5	xxxx	RPM
A802 013	AESC - Preset Engine Speed 6	xxxx	RPM
A802 014	AESC - Engine Speed Limit with VSS Fault	600	RPM
A802 015	AESC - Maximum Engine Load	100	%

A900 000	AESC - Vehicle Speed Limit	match pid 75012	mph
A802 017	AESC - Minimum Engine Speed	600	RPM
A802 018	AESC - Engine Speed Throttle Down Ramp Rate	100	RPM/s
A802 019	AESC - Bump Up/Down Step	100	RPM
A802 01A	AESC - Maximum Engine Load Time	8	s
A802 01B	AESC - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)	
A802 01C	AESC - Speed Controlled to Engine Load	off	
A800 000	Transfer Case Switch Signal Source	If available, for split shaft mode, must be set to Hardwired	
A800 002	Transfer Case Input Mode Select	Driveline engaged or split shaft engaged. If split shaft, C3-27 needs a ground when split shaft operation is enabled	
A805 02C	Remote Accelerator Enable Switch	disable	
A800 009	Parking Brake Switch Input Selection	can	
A800 00A	Brake Pedal Switch Input Selection	can	
A800 00B	Clutch Pedal Switch Input Selection	can	
A800 00C	Cruise Control/AESC On/Off Switch Input Selection	can	
A800 00D	Cruise Control Set/Coast Switch Input Selection	both	
A800 00E	Cruise Control Resume/Accelerate Switch Input Selection	both	
A800 00F	Remote Accelerator Switch Input Selection	hardwire	
A800 010	Engine Brake Switch 1 Input Selection		
A800 011	Remote AESC Programmed Speed Switch Input Selection	hardwire	
A800 012	Remote AESC Variable Speed Switch Input Selection	hardwire	
A800	Remote Accelerator Pedal Input Selection	hardwire	

ID		
00F		
A800 015	Master Switch for Setting Source Addresses	hardwire

Sample scenario for 2 preset speeds and a remote pedal			
2 presets for out riggers/boom, and remote/variable for auger/winch, (com ED truck or power company truck)			
ID	**Name**	**Setting**	**Value**
A802 002	AESC Remote Preset On/Off Switch Operation Enable	Disable	
A802 004	AESC Speed Control - Mode	remote or remote in cab or in cab	
A802 005	AESC - Maximum Vehicle Speed	match pid A900 000	MPH
A802 006	AESC - In Cab Mode	stationary preset	
A802 007	AESC In-Cab Operator Interface On / Off	disable	
A802 008	AESC - Remote Pedal Enable	enabled for remote pedal only	
A802 009	AESC - Preset Engine Speed 1 (Set)	xxxx	
A802 00A	AESC - Preset Engine Speed 2 (Resume)	xxxx	
A802 00B	AESC - Engine Speed Throttle Ramp Rate	100	
A802 00C	AESC - Maximum Engine Speed	xxxx	
A802 00D	AESC - Disable With Clutch	clutch disables	
A802 00E	AESC - Disable with Brake	brake disables	
A802 00F	AESC - Disable with APS	APS overrides set speed	
A802 010	AESC - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	
A802 011	AESC - Preset Engine Speed 4	0	
A802 012	AESC - Preset Engine Speed 5	0	
A802 013	AESC - Preset Engine Speed 6	0	
A802 014	AESC - Engine Speed Limit with VSS Fault	600	RPM

A802 015	AESC - Maximum Engine Load	100	%
A900 000	AESC - Vehicle Speed Limit	match pid 75012	
A802 017	AESC - Minimum Engine Speed	600	RPM
A802 018	AESC - Engine Speed Throttle Down Ramp Rate	100	RPM/s
A802 019	AESC - Bump Up/Down Step	100	
A802 01A	AESC - Maximum Engine Load Time	8	s
A802 01B	AESC - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)	
A802 01C	AESC - Speed Controlled to Engine Load	off	
A800 000	Transfer Case Switch Signal Source	If available, for split shaft mode, must be set to Hardwired	
A800 002	Transfer Case Input Mode Select	Driveline or split shaft. If split shaft, C1-65 needs 12v when PTO enabled	
A805 02C	Remote Accelerator Enable Switch	disable	
A800 009	Parking Brake Switch Input Selection	can	
A800 00A	Brake Pedal Switch Input Selection	can	
A800 00B	Clutch Pedal Switch Input Selection	can	
A800 00C	Cruise Control/AESC On/Off Switch Input Selection	can	
A800 00D	Cruise Control Set/Coast Switch Input Selection	both	
A800 00E	Cruise Control Resume/Accelerate Switch Input Selection	both	.
A800 00F	Remote Accelerator Switch Input Selection	hardwire	
A800 010	Engine Brake Switch 1 Input Selection	can	
A800 011	Remote AESC Programmed Speed Switch Input Selection	hardwire	
A800 012	Remote AESC Variable Speed Switch Input Selection	hardwire	
A800	Remote Accelerator Pedal Input Selection	hardwire	

| 00F A800 015 | Master Switch for Setting Source Addresses | hardwire |

Application Parameter Setup

Possible RESC Applications:

The RESC feature is application specific. This section briefly describes a few examples of RESC configuration and operation. This configuration will likely need to be modified to meet the needs of the actual application that the owner/operator requires.

> *Please review the description and operation section and the programmable parameters for a better understanding of how the various RESC parameters might be best configured for your vehicle.*

EXAMPLE A - Typical Split - Shaft Scenario

Typical split-shaft applications may include fire pump, sewer evacuation, etc.

This example is applicable for general split-shaft operation using stationary AESC mode and with preset (s) for elevated engine speed. The presets are activated remotely OR via the cruise control switches.

Adjust parameters as follows:

Parameter Name	Action Required
AESC - Mode (A802 004)	Select - Enabled - Remote and In Cab Operation
AESC - In Cab AESC Mode (A802 006)	Select one of the following: - None - Stationary Preset - Stationary Variable - Mobile Variable
Transfer Case Input Mode Select (A800 002)	Select - Split Shaft Operation
AESC - Remote Pedal Enable (A802 008)	Select - Disable - Enable
(Optional) - AESC - Preset Engine Speed 1 (SET/COAST) (A802 009)	Set this to 900
(Optional) - AESC - Preset Engine Speed 2 (RESUME/ACCEL) (A802 00A)	Set this to 1100
(Optional) - AESC - Preset Engine Speed 3 (A802 010)	Set this to 0
(Optional) – AESC - Preset Engine Speed 4 (A802 011)	Set this to 0

Parameter Name	Action Required
(Optional) - AESC - Preset Engine Speed 5 (A802 012)	Set this to 0
(Optional) - AESC - Preset Engine Speed 6 (A802 013)	Set this to 0
(Optional) - AESC – In Cab Operator Interface (A802 007)	Select - Disable NOTE: The accelerator, brake, and clutch will be ignored during AESC operation.
(Optional) – AESC - Maximum Engine Speed (A802 00C)	Check the recommendations for the AESC equipment.
AESC - Engine Speed Limit with VSS Fault (A802 014)	Set this to the value of the AESC Maximum Engine Speed (A802 00C) parameter setting referenced in the In-Cab AESC document
AESC - Engine Load Limit Select (A802 01C) This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. If set to - Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting. If set to - Engine speed will be limited if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting.	A setting of 1 is recommended.
AESC - Maximum Engine Load (A802 015) The engine speed control will be limited or deactivated if this parameter value is reached. Note : The functionality of this parameter is dependent on the Engine Load Limit Select (A802 01C) parameter setting.	Set between 30 and 100% based on the recommendations for the AESC equipment. NOTE: A setting of 100% is recommended.
AESC - Maximum Engine Load Time (A802 01A) This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.	A setting of 5 (seconds) is recommended.
AESC - Preset Engine Speed Select (A802 01B) If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply. If set to - Remote preset functions work as described in the Remote Preset section. This is considered normal operation. If set from 1 - - When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.	Set to any of the following values: - Off - Preset Speed 1 - Preset Speed 2 - Preset Speed 3 - Preset Speed 4 - Preset Speed 5 - Preset Speed 6
Cruise Control Set/Coast Switch Input Selection (A800 00C)	Both
Cruise Control Resume/Accel Switch Input Selection (A800 00D)	Both

Operation:

1. Ensure that the vehicle is completely stopped and that the parking brake is set.

2. Place the transmission in neutral.

3. Engage the split-shaft mechanism.

4. Place the transmission into the appropriate drive gear. Refer to the appropriate transmission documentation for specific instructions (Eaton, Allison, etc.).

5. Continue with desired engine speed control operation.

EXAMPLE B - Typical Utility Bucket Truck

Typical utility bucket applications may include tree trimmers, lineman bucket trucks, lamp repair trucks, etc.

This example is applicable for general utility bucket operation using a mechanical PTO with preset(s) for elevated engine speed for a stabilizing outrigger. The presets are activated remotely OR via the cruise control switches.

▌ *NOTE: Propane trucks and tow trucks may use similar settings.*

Adjust parameters as follows:

Parameter Name	Action Required
AESC - Mode (A802 004)	Select **-** Enabled – Remote and In Cab Operation
AESC – In Cab AESC Mode (A802 006)	Select one of the following: **-** None **-** Stationary Preset **-** Stationary Variable
Transfer Case Input Mode Select (A800 002)	Select - Neutral Operation
AESC - Remote Pedal Enable (A802 008)	Select - Disable
(Optional) AESC - Preset Engine Speed 1 (SET/COAST) (A802 009)	Set this to 900
(Optional) AESC - Preset Engine Speed 2 (RESUME/ACCEL) (A802 00A)	Set this to 1100
(Optional) AESC - Preset Engine Speed 3 (A802 010)	Set this to 0
(Optional) AESC - Preset Engine Speed 4 (A802 011)	Set this to 0
(Optional) AESC - Preset Engine Speed 5 (A802 012)	Set this to 0
(Optional) AESC - Preset Engine Speed 6 (A802 013)	Set this to 0

Parameter Name	Action Required
(Optional) AESC – In Cab Operator Interface (A802 007)	Select - Disable NOTE: The accelerator, brake, and clutch will be ignored during AESC operation.
(Optional) AESC - Maximum Engine Speed (A802 00C)	Check the recommendations for the AESC equipment.
AESC - Engine Speed Limit with VSS Fault (A802 014)	Set this to the value of the AESC Maximum Engine speed. (A802 00C) parameter setting.
AESC - Engine Load Limit Select (A802 01C) This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. If set to - Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting. If set to - Engine speed will be limited if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting.	A setting of 1 is recommended.
AESC - Maximum Engine Load (A802 015) The engine speed control will be limited or deactivated if this parameter value is reached. Note - The functionality of this parameter is dependent on the Engine Load Limit Select (A802 01C) parameter setting.	Set between 30 and 100% based on the recommendations for the AESC equipment. NOTE: A setting of 100% is recommended.
AESC - Maximum Engine Load Time (A802 01A) This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.	A setting of 5 (seconds) is recommended.
AESC - Preset Engine Speed Select (A802 01B) If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply. If set to - Remote preset functions work as described in the Remote Preset section. This is considered normal operation. If set from 1 - - When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.	Set to any of the following values: - Off - Preset Speed 1 - Preset Speed 2 - Preset Speed 3 - Preset Speed 4 - Preset Speed 5 - Preset Speed 6
Cruise Control Set/Coast Switch Input Selection (A800 00C)	Both
Cruise Control Resume/Accel Switch Input Selection (A800 00D)	Both

Operation:

1. Engage the mechanical PTO device.

2. Ramp the engine to the desired preset speed according to the equipment.

3. Continue with desired utility bucket operation.

EXAMPLE C - Typical Utility Derrick Digger

Derrick diggers are commonly used for digging holes for utility poles, ditches, etc.

This example is applicable for general utility derrick digger operation using a mechanical PTO with preset (s) for elevated engine speed for a stabilizing outrigger, variable engine speed control and remote pedal for digging from the perch. The presets are activated remotely OR via the cruise control switches.

NOTE: Oil field trucks may use similar settings.

Adjust parameters as follows:

Parameter Name	Action Required
AESC - Mode (A802 004)	Select - Enabled – Remote and In Cab Operation
AESC – In Cab AESC Mode (A802 006)	Select one of the following: - None - Stationary Preset - Stationary Variable
Transfer Case Input Mode Select (A800 002)	Select - Neutral Operation
AESC - Remote Pedal Enable (A802 008)	Select - Enable
(Optional) AESC - Preset Engine Speed 1 (SET/COAST) (A802 009)	Set this to 620
(Optional) AESC - Preset Engine Speed 2 (RESUME/ACCEL) (A802 00A)	Set this to 1200
(Optional) AESC - Preset Engine Speed 3 (A802 010)	Set this to 0
(Optional) AESC - Preset Engine Speed 4 (A802 011)	Set this to 0
(Optional) AESC - Preset Engine Speed 5 (A802 012)	Set this to 0
(Optional) AESC - Preset Engine Speed 6 (A802 013)	Set this to 0

Parameter Name	Action Required
(Optional) AESC - In-Cab Operator Interface (A802 007) Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation. If set to 0 : The accelerator, brake, and clutch are inputs used for AESC operation. If set to 1 : The accelerator, brake, and clutch will be ignored during AESC operation. Note: Use parameters (A802 00D), (75110) and (A802 00F) to provide the specific input options.	Select - ON or - OFF
(Optional) AESC - Maximum Engine Speed (A802 00C)	Check the recommendations for the AESC equipment.
AESC - Engine Speed Limit with VSS Fault (A802 014)	Set this to the value of the AESC Maximum Engine Speed. (A802 00C) parameter setting.
AESC - Engine Load Limit Select (A802 01C) This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. If set to - Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting. If set to - Engine speed will be limited if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting.	A setting of 1 is recommended.
AESC - Maximum Engine Load (A802 015) The engine speed control will be limited or deactivated if this parameter value is reached. Note - The functionality of this parameter is dependent on the Engine Load Limit Select (A802 01C) parameter setting.	Set between 30 and 100% based on the recommendations for the AESC equipment. NOTE: A setting of 100% is recommended.
AESC - Maximum Engine Load Time (A802 01A) This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.	A setting of 5 (seconds) is recommended.
AESC - Preset Engine Speed Select (A802 01B) If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply. If set to -	Set to any of the following values: - Off - Preset Speed 1 - Preset Speed 2 - Preset Speed 3 - Preset Speed 4

Parameter Name	Action Required
Remote preset functions work as described in the Remote Preset section. This is considered normal operation. If set from 1 - - When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.	- Preset Speed 5 - Preset Speed 6
Cruise Control Set/Coast Switch Input Selection (A800 00C)	Both
Cruise Control Resume/Accel Switch Input Selection (A800 00D)	Both

Operation:

1. Engage the mechanical PTO device.

2. Activate remote preset engine speed.

3. Operate outriggers.

4. REMOTE CONTROL: a. Activate remote variable, b. Operate

digger (adjusting engine speed variably as required)

- OR-

5. PEDESTAL: a. Activate remote pedal, b. Operate digger

EXAMPLE D - Typical Construction Dump Scenario

Typical construction dump applications may include dump bodies, landscape dumps, etc.

This example is applicable for general construction dump operation using a mechanical PTO with preset (s) for elevated engine speed for raising and lowering the dump body. The presets are activated remotely OR via the cruise control switches.

Adjust parameters as follows:

Parameter Name	Action Required
AESC - Mode (A802 004)	Select - Enabled - Remote and In Cab Operation.
AESC – In Cab AESC Mode (A802 006)	Select one of the following: - None - Stationary Preset - Stationary Variable - Mobile Variable

Parameter Name	Action Required
Transfer Case Input Mode Select(A800 002)	Select - Neutral Operation
AESC - Remote Pedal Enable (A802 008)	Select - Disable
(Optional) AESC - Preset Engine Speed 1 (SET/COAST) (A802 009)	Set this to 1100
(Optional) AESC - Preset Engine Speed 2 (RESUME/ACCEL) (A802 00A)	Set this to 0
(Optional) AESC - Preset Engine Speed 3 (A802 010)	Set this to 0
(Optional) AESC - Preset Engine Speed 4 (A802 011)	Set this to 0
(Optional) AESC - Preset Engine Speed 5 (A802 012)	Set this to 0
(Optional) AESC - Preset Engine Speed 6 (A802 013)	Set this to 0
(Optional) AESC – In Cab Operator Interface (A802 007) Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation. If set to - The accelerator, brake, and clutch are inputs used for AESC operation. If set to - The accelerator, brake, and clutch will be ignored during AESC operation. Note: Use parameters (A802 00D), (75110) and (A802 00F) to provide the specific input options.	Select - ON or - OFF
(Optional) AESC - Maximum Engine Speed (A802 00C)	Check the recommendations for the AESC equipment.
AESC - Engine Speed Limit with VSS Fault (A802 014)	Set this to the value of the AESC Maximum Engine Speed (A802 00C) parameter setting.
AESC - Engine Load Limit Select (A802 01C) This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. If set to - Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting. If set to - Engine speed will be limited if the engine speed reaches the Maximum Engine Load (A802 015) parameter setting.	A setting of 1 is recommended.

Parameter Name	Action Required
AESC - Maximum Engine Load (A802 015) The engine speed control will be limited or deactivated if this parameter value is reached. Note - The functionality of this parameter is dependent on the Engine Load Limit Select (A802 01C) parameter setting.	Set between 30 and 100% based on the recommendations for the AESC equipment. NOTE: A setting of 100% is recommended.
AESC - Maximum Engine Load Time (A802 01A) This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.	A setting of 5 (seconds) is recommended.
AESC - Preset Engine Speed Select (A802 01B) If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply. If set to - Remote preset functions work as described in the Remote Preset section. This is considered normal operation. If set from 1 - - When the remote preset switch is enabled, the engine will ramp up (from idle speed) to the engine speed value set for the respective preset.	Set to any of the following values: - Off - Preset Speed 1 - Preset Speed 2 - Preset Speed 3 - Preset Speed 4 - Preset Speed 5 - Preset Speed 6

Operation:

1. Engage the mechanical PTO device.

2. Ramp the engine to the desired preset speed according to the equipment.

3. Continue with desired construction dump body operation.

Frequently Asked Questions

Can the RESC feature be used for split-shaft operation, such as a fire pump application?

Yes, refer to the Split-Shaft AESC/PTO section and Example A in the Parameter Setup section for more information.

How do I configure my engine parameters for utility derrick digger operation?

Refer to "Example C" in the Parameter Setup section for more information.

Definitions/Acronyms

The following terms are referenced in this document:

Acronym	Definition

AESC	Auxiliary Engine Speed Control
CAP	Cold Ambient Protection
ECM	Engine Control Module
IST	Idle Shutdown Timer
PTO	Power Take Off
RAS	Resume/Accel Switch
RESC	Remote Engine Speed Control
RAPP	Remote Accelerator Pedal Position
SCS	Speed Control Switch
VSS	Vehicle Speed Sensor