

International[®] A26 (2017)

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
Aux Throttle Control - Remote Pedal Enable (75041)	This parameter sets the driveline mode for PTO operation: Note: Must be set to 1 if engine speed is desired to be controlled by a remote throttle pedal.	0: Disable 1: Enable	YES	Customer Chosen
Remote Accelerator Enable Switch (89141)	This parameter enables another input to the ECM that is required to be active to allow the remote pedal input to be affect the engine speed: Note: (75041) Aux Throttle Control - Remote Pedal Enable must also be enabled.	0: Disable 1: Enable	YES	Customer Chosen
Remote Accelerator Switch Input Selection (99292)	This parameter sets how the remote accelerator switch input signal is provided to the ECM - (Hardwire or CAN).	0: Hardwired Input 1: CAN Input 1	YES	Customer Chosen
Remote Accelerator Pedal Input Selection (99352)	This parameter sets how the accelerator pedal input signal is provided to the ECM - (Hardwire or CAN).	0: Hardwired Input 1: 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 (39050)	This parameter sets the speed signal source during split shaft operation	0: Wheel Speed Selected When Split Shaft is Enabled 1: Output Shaft Speed Selected When Split Shaft is Enabled	YES	Customer Chosen
Transfer Case Input Mode Select (89101)	This parameter sets the split shaft mode for AESC operation. If set to (0): Split shaft is disabled. If set to (1): Split shaft is enabled.	0: Driveline Engaged 1: Split Shaft Engaged	YES	Customer Chosen NOTE: Must be set to 1 if Split Shaft operation is desired.

Parameters for AESC Remote Configurations:

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Engine Idle Shutdown Auxiliary Engine Shutdown (74102)	Select this parameter to enable the Auxiliary Engine Shutdown. NOTE: This feature may not be operational in all models.	0: Enable 1: Disable	YES	Customer Chosen
Auxiliary Engine Shutdown Switch Input Selection (99312)	This parameter sets how the Auxiliary Engine Shutdown Switch Input signal is provided to the ECM - (Hardwire or CAN). <ul style="list-style-type: none"> • If set to (0) - The switch input is on a hardwired circuit • If set to (1) The switch input is provided on the data link 	0: Hardwired Input 1: CAN Input 1	YES	This has never worked.
Aux Throttle Control - Mode (75001)	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. <ul style="list-style-type: none"> • If set to (0) - The AESC functionality is disabled. • If set to (2) - Only the in-cab inputs will be able to control AESC. • If set to (3) - Both remote and in-cab inputs will be able to control AESC (See Note 1 & 2). • If set to (1) - Only the remote AESC inputs will be able to control AESC (See Note 2). <p>Note 1: The last input received will take priority when Mode 3 is selected. Note 2: Mode 1 and the remote portion of Mode 3 are discussed in the Remote Engine Speed Control document.</p>	0: Disable 1: Remote Operation Only 2: In Cab Operation Only 3: Remote and In Cab Operation	YES	Customer Chosen
Aux Throttle Control - In Cab AESC Mode (75021)	Set this parameter after selecting In-Cab Or Remote and In-Cab Operation to determine which AESC mode is active. <ul style="list-style-type: none"> • If set to (0) - The switches will not be used. Refer to the Remote Engine Speed Control document. • If set to (1) - 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 (2) - The switches will be used to adjust the engine speed variably. Refer to the Stationary Variable section for more information. <p>If set to (3) - 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.</p>	0: None 1: Stationary Preset 2: Stationary Variable 3: Mobile Variable	YES	Customer Chosen
Aux Throttle Control - In Cab Operator Interface (75031)	Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation. <ul style="list-style-type: none"> • 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 (75102), (75110) and (75132) to provide the specific input options. 	0: Enabled 1: Disabled	YES	Customer Chosen

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Aux Throttle Control - Remote Pedal Enable (75041)	This parameter sets the driveline mode for AESC operation: Note: Must be set to 1 if engine speed is desired to be controlled by a remote throttle pedal.	0: Disable 1: Enable	YES	Customer Chosen
Aux Throttle Control - Preset Engine Speed 1 (SET) (75052)	This parameter sets the running engine speed set point that will be maintained when the first AESC preset speed is selected OR when SET/COAST is pressed. Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (RPRE and SCS), allow customer to enter preset 1 and then ramp up/down using RAS and SCS inputs. Refer to the Stationary Preset section for more information.	Range must be between the following settings: <ul style="list-style-type: none"> AESC Preset Engine Speed Activation (CRUISE ON) (7522) AESC Maximum Engine Speed (75082)	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Preset Engine Speed 2 (RESUME) (75062)	This parameter sets the running engine speed set point that will be maintained when the first AESC preset speed is selected OR when RESUME/ACCEL is pressed. Note 1: Presets speeds that will not be used can be set to 0 rpm. Upon activation (RPRE and SCS), allow customer to enter preset 2 and then ramp up/down using RAS and SCS inputs. Refer to the Stationary Preset section for more information.	Range must be between the following settings: <ul style="list-style-type: none"> AESC Preset Engine Speed Activation (CRUISE ON) (7522) AESC Maximum Engine Speed (75082) 	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Maximum Engine Speed (75082)	The maximum engine speed that can be reached using any AESC controls. Note 1: This parameter must be set properly to protect AESC related equipment.	<ul style="list-style-type: none"> Low Idle - High Idle (rpm) 	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Preset Engine Speed 3 (75143)	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. Upon activation (RPRE and SCS), allow customer to enter preset 3 and then ramp up/down using RAS and SCS inputs. Refer to the Stationary Preset section for more information.	Low Idle - High Idle (rpm)	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Preset Engine Speed 4 (75153)	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. Upon activation (RPRE and SCS), allow customer to enter preset 4 and then ramp up/down using RAS and SCS inputs. Refer to the Stationary Preset section for more information.	Low Idle - High Idle (rpm)	YES	Customer Chosen (See Note 1)

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Aux Throttle Control - Preset Engine Speed 5 (75163)	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. Upon activation (RPRE and SCS), allow customer to enter preset 5 and then ramp up/ down using RAS and SCS inputs. Refer to the Stationary Preset section for more information.	Low Idle - High Idle (rpm)	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Preset Engine Speed 6 (75173)	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. Upon activation (RPRE and SCS), allow customer to enter preset 6 and then ramp up/ down using RAS and SCS inputs. Refer to the Stationary Preset section for more information.	Low Idle - High Idle (rpm)	YES	Customer Chosen (See Note 1)
Aux Throttle Control - Engine Speed Limit with VSS Fault (75183)	This parameter sets the maximum engine speed allowed when an active vehicle speed sensor (VSS) fault exits 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
Aux Throttle Control - Maximum Engine Load (75193)	The engine speed control will be limited or deactivated if this parameter value is reached. Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (75301) parameter setting.	Set between 30 and 100% based on the recommendations for the AESC equipment.	YES	Customer Chosen
Aux Throttle Control - Maximum Engine Load Time (75272)	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.
Aux Throttle Control - Preset Engine Speed Select (75281)	This parameter sets the first selected preset level (1, 2, 3, 4, 5, or 6) when remote Preset AESC is activated. Note 1: This parameter can only have six valid preset values as 1, 2, 3, 4, 5 or 6.	0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6	YES	Customer Chosen
Aux Throttle Control - Engine Load Limit Select (75301)	This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. <ul style="list-style-type: none"> If set to (0) - Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (75193) parameter setting. If set to (1) - Engine speed will be limited if the engine speed reaches the Maximum Engine Load (75193) parameter setting. 	0: Off 1: On	YES	A setting of 1 is recommended.
AESC Disable with Parking Brake (75342)	This parameter selects whether the AESC engine speed control is deactivated if the park brake is released. <ul style="list-style-type: none"> If set to (0) - Engine speed control will not be deactivated if the park brake is released. If set to (1) - Engine speed control will be deactivated if the park brake is released. 	0: Brake Does Not Change AESC 1: Parking Brake Disables AESC	YES	Customer Chosen

Parameter Value	Description	Possible Values	Cust Pgrm	Recommended Settings
Cruise Control/AESC On/Off Switch Input Selection (99262)	This parameter selects the source for the Cruise Control/AESC On/Off Switch. <ul style="list-style-type: none"> If set to (0) – The Cruise Control/AESC On/Off Switch signal is sensed from a hardwired input. If set to (1) – The Cruise Control/AESC On/Off Switch is sensed on the J1939 data link.	0: Hardwired Input 1: Can	YES	Customer Chosen
Cruise Control Set/Coast Switch Input Selection (99272)	This parameter selects the source for the Cruise Control Resume/Accelerate Switch. <ul style="list-style-type: none"> If set to (0) – The Cruise Control Resume/Accelerate Switch signal is sensed from a hardwired input. If set to (1) – The Cruise Control Resume/Accelerate Switch is sensed on the J1939 data link. If set to (2) – The Cruise Control Resume/Accelerate Switch is sensed on both the hardwired input and the J1939 data link	0: Hardwired Input 1: Can 2: Both	YES	2: Both
Cruise Control Resume/Accelerate Switch Input Selection (99282)	This parameter selects the source for the Cruise Control Resume/Accelerate Switch. <ul style="list-style-type: none"> If set to (0) – The Cruise Control Resume/Accelerate Switch signal is sensed from a hardwired input. If set to (1) – The Cruise Control Resume/Accelerate Switch is sensed on the J1939 data link. If set to (2) – The Cruise Control Resume/Accelerate Switch is sensed on both the hardwired input and the J1939 data link.	0: Hardwired Input 1: Can 2: Both	YES	2: Both
Remote AESC Programmed Speed Switch Input Selection (99322)	This parameter sets how the programmed speed switch input signal is provided to the ECM - (Hardwire or CAN). <ul style="list-style-type: none"> If set to (0) – The switch input is on a hardwired circuit If set to (1) The switch input is provided on the data link 	0: Hardwired Input 1: CAN Input 1	YES	Customer Chosen
Master Switch for Setting Source Addresses (99431)	This parameter selects how the ECM sees the switch for setting Source addresses. <ul style="list-style-type: none"> If set to (0) – The switch input is on a hardwired circuit If set to (1) The switch input is provided on the data link 	0: Enabled with Hardwire input 1: Enabled with CAN input	YES	Enabled with Hardwire input

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.

Setup for VARIABLE operation

ID	Name	Setting	Value
39060	AESC Remote Preset On/Off Switch Operation Enable	Disable	

75001	Aux Throttle Control - Mode	remote or remote in cab or in cab	
75010	Aux Throttle Control - Maximum Vehicle Speed	match pid 75213	MPH
75021	Aux Throttle Control - In Cab Mode	stationary variable	
75031	Aux Throttle Control - In Cab Operator Interface	disable	
75040	Aux Throttle Control - Remote Pedal Enable	enable	
75052	Aux Throttle Control - Preset Engine Speed 1 (Set)	xxxx	RPM
75062	Aux Throttle Control - Preset Engine Speed 2 (Resume)	xxxx	RPM
75072	Aux Throttle Control - Ramp Rate	100	RPM/s
75082	Aux Throttle Control - Maximum Engine Speed	xxxx	RPM
75102	Aux Throttle Control - Disable With Clutch	clutch disables	
75112	Aux Throttle Control - Disable with Brake	brake disables	
75132	Aux Throttle Control - Disable with APS	APS overrides set speed	
75143	Aux Throttle Control - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	RPM
75153	Aux Throttle Control - Preset Engine Speed 4	xxxx	RPM
75163	Aux Throttle Control - Preset Engine Speed 5	xxxx	RPM
75173	Aux Throttle Control - Preset Engine Speed 6	xxxx	RPM
75183	Aux Throttle Control - Engine Speed Limit with VSS Fault	600	RPM
75193	Aux Throttle Control - Maximum Engine Load	100	%
75213	Aux Throttle Control - Vehicle Speed Limit	match pid 75012	MPH
75223	Aux Throttle Control - Minimum Engine Speed	600	RPM
75243	Aux Throttle Control - Engine Speed Throttle Down Ramp Rate	100	RPM/s
75253	Aux Throttle Control - Bump Up/Down Step	100	RPM
75272	Aux Throttle Control - Maximum Engine Load Time	8	s
75281	Aux Throttle Control - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)	
75301	Aux Throttle Control - Speed Controlled to Engine Load	off	

80112	Transfer Case Switch Signal Source	If available, for split shaft mode, must be set to Hardwired
89101	Transfer Case Input Mode Select	Driveline or split shaft. If split shaft, C1-65 needs 12v when PTO enabled
89141	Remote Accelerator Enable Switch	disable
99232	Parking Brake Switch Input Selection	can
99242	Brake Pedal Switch Input Selection	can
99252	Clutch Pedal Switch Input Selection	can
99262	Cruise Control/PTO On/Off Switch Input Selection	can
99272	Cruise Control Set/Coast Switch Input Selection	both
99282	Cruise Control Resume/Accelerate Switch Input Selection	both
99292	Remote Accelerator Switch Input Selection	can
99302	Engine Brake Switch 1 Input Selection	can
99322	Remote PTO Programmed Speed Switch Input Selection	can
99332	Remote PTO Variable Speed Switch Input Selection	Hardwire
99352	Remote Accelerator Pedal Input Selection	
99431	Master Switch for Setting Source Addresses	hardwire

Setup for PRESET operation

ID	Name	Setting	Value
39060	AESC Remote Preset On/Off Switch Operation Enable	Disable	
75001	Aux Throttle Control - Mode	remote or remote in cab or in cab	
75010	Aux Throttle Control - Maximum Vehicle Speed	match pid 75213	MPH
75021	Aux Throttle Control - In Cab Mode	stationary preset	
75031	Aux Throttle Control - In Cab Operator Interface	disable	
75040	Aux Throttle Control - Remote Pedal Enable	enable	
75052	Aux Throttle Control - Preset Engine Speed 1 (Set)	xxxx	RPM
75062	Aux Throttle Control - Preset Engine Speed 2 (Resume)	xxxx	RPM
75072	Aux Throttle Control - Ramp Rate	100	RPM/s

75082	Aux Throttle Control - Maximum Engine Speed	xxxx	RPM
75102	Aux Throttle Control - Disable With Clutch	clutch disables	
75112	Aux Throttle Control - Disable with Brake	brake disables	
75132	Aux Throttle Control - Disable with APS	APS overrides set speed	
75143	Aux Throttle Control - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	RPM
75153	Aux Throttle Control - Preset Engine Speed 4	xxxx	RPM
75163	Aux Throttle Control - Preset Engine Speed 5	xxxx	RPM
75173	Aux Throttle Control - Preset Engine Speed 6	xxxx	RPM
75183	Aux Throttle Control - Engine Speed Limit with VSS Fault	600	RPM
75193	Aux Throttle Control - Maximum Engine Load	100	%
75213	Aux Throttle Control - Vehicle Speed Limit	match pid 75012	MPH
75223	Aux Throttle Control - Minimum Engine Speed	600	RPM
75243	Aux Throttle Control - Engine Speed Throttle Down Ramp Rate	100	RPM/s
75253	Aux Throttle Control - Bump Up/Down Step	100	RPM
75272	Aux Throttle Control - Maximum Engine Load Time	8	s
75281	Aux Throttle Control - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)	
75301	Aux Throttle Control - Speed Controlled to Engine Load	off	
80112	Transfer Case Switch Signal Source	If available, for split shaft mode, must be set to Hardwired Driveline or split shaft. If split shaft, C1-65 needs 12v when PTO enabled	
89101	Transfer Case Input Mode Select		
89141	Remote Accelerator Enable Switch	disable	
99232	Parking Brake Switch Input Selection	can	
99242	Brake Pedal Switch Input Selection	can	
99252	Clutch Pedal Switch Input Selection	can	
99262	Cruise Control/PTO On/Off Switch Input Selection	can	
99272	Cruise Control Set/Coast Switch Input Selection	both	

99282	Cruise Control Resume/Accelerate Switch Input Selection	both
99292	Remote Accelerator Switch Input Selection	both
99302	Engine Brake Switch 1 Input Selection	can
99322	Remote PTO Programmed Speed Switch Input Selection	hardwire
99332	Remote PTO Variable Speed Switch Input Selection	can
99352	Remote Accelerator Pedal Input Selection	
99431	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
39060	AESC Remote Preset On/Off Switch Operation Enable	Disable	
75001	Aux Throttle Control - Mode	remote or remote in cab or in cab	
75010	Aux Throttle Control - Maximum Vehicle Speed	match pid 75213	MPH
75021	Aux Throttle Control - In Cab Mode	stationary preset	
75031	Aux Throttle Control - In Cab Operator Interface	disable	
75040	Aux Throttle Control - Remote Pedal Enable	enable	
75052	Aux Throttle Control - Preset Engine Speed 1 (Set)	xxxx	RPM
75062	Aux Throttle Control - Preset Engine Speed 2 (Resume)	xxxx	RPM
75072	Aux Throttle Control - Ramp Rate	100	RPM/s
75082	Aux Throttle Control - Maximum Engine Speed	xxxx	RPM
75102	Aux Throttle Control - Disable With Clutch	clutch disables	
75112	Aux Throttle Control - Disable with Brake	brake disables	
75132	Aux Throttle Control - Disable with APS	APS overrides set speed	
75143	Aux Throttle Control - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	RPM
75153	Aux Throttle Control - Preset Engine Speed 4	xxxx	RPM
75163	Aux Throttle Control - Preset Engine Speed 5	xxxx	RPM
75173	Aux Throttle Control - Preset Engine Speed 6	xxxx	RPM

75183	Aux Throttle Control - Engine Speed Limit with VSS Fault	600	RPM
75193	Aux Throttle Control - Maximum Engine Load	100	%
75213	Aux Throttle Control - Vehicle Speed Limit	match pid 75012	mph
75223	Aux Throttle Control - Minimum Engine Speed	600	RPM
75243	Aux Throttle Control - Engine Speed Throttle Down Ramp Rate	100	RPM/s
75253	Aux Throttle Control - Bump Up/Down Step	100	RPM
75272	Aux Throttle Control - Maximum Engine Load Time	8	s
75281	Aux Throttle Control - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)	
75301	Aux Throttle Control - Speed Controlled to Engine Load	off	
80112	Transfer Case Switch Signal Source		If available, for split shaft mode, must be set to Hardwired Driveline or split shaft. If split shaft, C1-65 needs 12v when PTO enabled
89101	Transfer Case Input Mode Select		
89141	Remote Accelerator Enable Switch	disable	
99232	Parking Brake Switch Input Selection	can	
99242	Brake Pedal Switch Input Selection	can	
99252	Clutch Pedal Switch Input Selection	can	
99262	Cruise Control/PTO On/Off Switch Input Selection	can	
99272	Cruise Control Set/Coast Switch Input Selection	both	
99282	Cruise Control Resume/Accelerate Switch Input Selection	both	
99292	Remote Accelerator Switch Input Selection	hardwire	
99302	Engine Brake Switch 1 Input Selection		
99322	Remote PTO Programmed Speed Switch Input Selection	hardwire	
99332	Remote PTO Variable Speed Switch Input Selection	hardwire	
99352	Remote Accelerator Pedal Input Selection	hardwire	
99431	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
39060	AESC Remote Preset On/Off Switch Operation Enable	Disable	
75001	Aux Throttle Control - Mode	remote or remote in cab or in cab	
75010	Aux Throttle Control - Maximum Vehicle Speed	match pid 75213	MPH
75021	Aux Throttle Control - In Cab Mode	stationary preset	
75031	Aux Throttle Control - In Cab Operator Interface	disable	
75040	Aux Throttle Control - Remote Pedal Enable	enabled for remote pedal only	
75052	Aux Throttle Control - Preset Engine Speed 1 (Set)	xxxx	
75062	Aux Throttle Control - Preset Engine Speed 2 (Resume)	xxxx	
75072	Aux Throttle Control - Ramp Rate	100	
75082	Aux Throttle Control - Maximum Engine Speed	xxxx	
75102	Aux Throttle Control - Disable With Clutch	clutch disables	
75112	Aux Throttle Control - Disable with Brake	brake disables	
75132	Aux Throttle Control - Disable with APS	APS overrides set speed	
75143	Aux Throttle Control - Preset Engine Speed 3	same as preset 2 if 2 speeds are being used	
75153	Aux Throttle Control - Preset Engine Speed 4	0	
75163	Aux Throttle Control - Preset Engine Speed 5	0	
75173	Aux Throttle Control - Preset Engine Speed 6	0	
75183	Aux Throttle Control - Engine Speed Limit with VSS Fault	600	RPM
75193	Aux Throttle Control - Maximum Engine Load	100	%
75213	Aux Throttle Control - Vehicle Speed Limit	match pid 75012	
75223	Aux Throttle Control - Minimum Engine Speed	600	RPM
75243	Aux Throttle Control - Engine Speed Throttle Down Ramp Rate	100	RPM/s
75253	Aux Throttle Control - Bump Up/Down Step	100	
75272	Aux Throttle Control - Maximum Engine Load Time	8	s

75281	Aux Throttle Control - Preset Engine Speed Select	preset 1 (even if more than 1 preset spd)
75301	Aux Throttle Control - Speed Controlled to Engine Load	off
80112	Transfer Case Switch Signal Source	If available, for split shaft mode, must be set to Hardwired Driveline or split shaft. If split shaft, C1-65 needs 12v when PTO enabled
89101	Transfer Case Input Mode Select	
89141	Remote Accelerator Enable Switch	disable
99232	Parking Brake Switch Input Selection	can
99242	Brake Pedal Switch Input Selection	can
99252	Clutch Pedal Switch Input Selection	can
99262	Cruise Control/PTO On/Off Switch Input Selection	can
99272	Cruise Control Set/Coast Switch Input Selection	both
99282	Cruise Control Resume/Accelerate Switch Input Selection	both
99292	Remote Accelerator Switch Input Selection	hardwire
99302	Engine Brake Switch 1 Input Selection	can
99322	Remote PTO Programmed Speed Switch Input Selection	hardwire
99332	Remote PTO Variable Speed Switch Input Selection	hardwire
99352	Remote Accelerator Pedal Input Selection	hardwire
99431	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
Aux Throttle Control - Mode (75001)	Select 3: Enabled - Remote and In Cab Operation
Aux Throttle Control - In Cab AESC Mode (75021)	Select one of the following: 0: None 1: Stationary Preset 2: Stationary Variable 3: Mobile Variable
Transfer Case Input Mode Select (89101)	Select 1: Split Shaft Operation
Aux Throttle Control - Remote Pedal Enable (75041)	Select 0: Disable 1: Enable
(Optional) - Aux Throttle Control - Preset Engine Speed 1 (SET/COAST) (75052)	Set this to 900
(Optional) - Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (75062)	Set this to 1100
(Optional) - Aux Throttle Control - Preset Engine Speed 3 (75143)	Set this to 0
(Optional) - Aux Throttle Control - Preset Engine Speed 4 (75153)	Set this to 0
(Optional) - Aux Throttle Control - Preset Engine Speed 5 (75163)	Set this to 0
(Optional) - Aux Throttle Control - Preset Engine Speed 6 (75173)	Set this to 0
(Optional) - Aux Throttle Control - In Cab Operator Interface (75031)	Select 1: Disable NOTE: The accelerator, brake, and clutch will be ignored during AESC operation.
(Optional) - Aux Throttle Control - Maximum Engine Speed (75082)	Check the recommendations for the AESC equipment.
Aux Throttle Control - Engine Speed Limit with VSS Fault (75183)	Set this to the value of the AESC Maximum Engine Speed (75082) parameter setting referenced in the In-Cab AESC document
Aux Throttle Control - Engine Load Limit Select (75301) This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (75193) parameter setting. If set to 1: Engine speed will be limited if the engine speed reaches the	A setting of 1 is recommended.

Parameter Name	Action Required
Maximum Engine Load (75193) parameter setting.	
<p>Aux Throttle Control - Maximum Engine Load (75193)</p> <p>The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note :</p> <p>The functionality of this parameter is dependent on the Engine Load Limit Select (75301) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the AESC equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (75272)</p> <p>This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.</p>	<p>A setting of 5 (seconds) is recommended.</p>
<p>Aux Throttle Control - Preset Engine Speed Select (75281)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: 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.</p>	<p>Set to any of the following values:</p> <p>0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6</p>
Cruise Control Set/Coast Switch Input Selection (99262)	Both
Cruise Control Resume/Accel Switch Input Selection (99272)	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
Aux Throttle Control - Mode (75001)	Select 3: Enabled - Remote and In Cab Operation
Aux Throttle Control - In Cab AESC Mode (75021)	Select one of the following: 0: None 1: Stationary Preset 2: Stationary Variable
Transfer Case Input Mode Select (89101)	Select 0: Neutral Operation
Aux Throttle Control - Remote Pedal Enable (75041)	Select 0: Disable
(Optional) Aux Throttle Control - Preset Engine Speed 1 (SEI/COAST) (75052)	Set this to 900
(Optional) Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (75062)	Set this to 1100
(Optional) Aux Throttle Control - Preset Engine Speed 3 (75143)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 4 (75153)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 5 (75163)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 6 (75173)	Set this to 0
(Optional) Aux Throttle Control - In Cab Operator Interface (75031)	Select 1: Disable NOTE: The accelerator, brake, and clutch will be ignored during AESC operation.
(Optional) Aux Throttle Control - Maximum Engine Speed (75082)	Check the recommendations for the AESC equipment.
Aux Throttle Control - Engine Speed Limit with VSS Fault (75183)	Set this to the value of the AESC Maximum Engine speed. (75082) parameter setting.
Aux Throttle Control - Engine Load Limit Select (75301) This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached. If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (75193) parameter setting. If set to 1: Engine speed will be limited if the engine speed reaches the Maximum Engine Load (75193) parameter setting.	A setting of 1 is recommended.

Parameter Name	Action Required
<p>Aux Throttle Control - Maximum Engine Load (75193)</p> <p>The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (75301) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the AESC equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (75272)</p> <p>This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.</p>	<p>A setting of 5 (seconds) is recommended.</p>
<p>Aux Throttle Control - Preset Engine Speed Select (75281)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: 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.</p>	<p>Set to any of the following values:</p> <p>0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6</p>
<p>Cruise Control Set/Coast Switch Input Selection (99262)</p>	<p>Both</p>
<p>Cruise Control Resume/Accel Switch Input Selection (99272)</p>	<p>Both</p>

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
Aux Throttle Control - Mode (75001)	Select 3: Enabled - Remote and In Cab Operation
Aux Throttle Control - In Cab AESC Mode (75021)	Select one of the following: 0: None 1: Stationary Preset 2: Stationary Variable
Transfer Case Input Mode Select (89101)	Select 0: Neutral Operation
Aux Throttle Control - Remote Pedal Enable (75041)	Select 1: Enable
(Optional) Aux Throttle Control - Preset Engine Speed 1 (SET/COAST) (75052)	Set this to 620
(Optional) Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (75062)	Set this to 1200
(Optional) Aux Throttle Control - Preset Engine Speed 3 (75143)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 4 (75153)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 5 (75163)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 6 (75173)	Set this to 0
(Optional) Aux Throttle Control - In-Cab Operator Interface (75031) 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 (75102), (75110) and (75132) to provide the specific input options.	Select 0: ON or 1: OFF
(Optional) Aux Throttle Control - Maximum Engine Speed (75082)	Check the recommendations for the AESC equipment.
Aux Throttle Control - Engine Speed Limit with VSS Fault (75183)	Set this to the value of the AESC Maximum Engine Speed. (75082) parameter setting.

Parameter Name	Action Required
<p>Aux Throttle Control - Engine Load Limit Select (75301)</p> <p>This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached.</p> <p>If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (75193) parameter setting.</p> <p>If set to 1: Engine speed will be limited if the engine speed reaches the Maximum Engine Load (75193) parameter setting.</p>	A setting of 1 is recommended.
<p>Aux Throttle Control - Maximum Engine Load (75193)</p> <p>The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (75301) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the AESC equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (75272)</p> <p>This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.</p>	A setting of 5 (seconds) is recommended.
<p>Aux Throttle Control - Preset Engine Speed Select (75281)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: 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.</p>	<p>Set to any of the following values:</p> <p>0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6</p>
Cruise Control Set/Coast Switch Input Selection (99262)	Both
Cruise Control Resume/Accel Switch Input Selection (99272)	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
Aux Throttle Control - Mode (75001)	Select 3: Enabled - Remote and In Cab Operation.
Aux Throttle Control - In Cab AESC Mode (75021)	Select one of the following: 0: None 1: Stationary Preset 2: Stationary Variable 3: Mobile Variable
Transfer Case Input Mode Select(89101)	Select 0: Neutral Operation
Aux Throttle Control - Remote Pedal Enable (75041)	Select 0: Disable
(Optional) Aux Throttle Control - Preset Engine Speed 1 (SEI/COAST) (75052)	Set this to 1100
(Optional) Aux Throttle Control - Preset Engine Speed 2 (RESUME/ACCEL) (75062)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 3 (75143)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 4 (75153)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 5 (75163)	Set this to 0
(Optional) Aux Throttle Control - Preset Engine Speed 6 (75173)	Set this to 0

Parameter Name	Action Required
<p>(Optional) Aux Throttle Control - In Cab Operator Interface (75031)</p> <p>Select this parameter when accelerator, brake or clutch is desired to be ignored during engine speed control operation.</p> <p>If set to 0: The accelerator, brake, and clutch are inputs used for AESC operation.</p> <p>If set to 1: The accelerator, brake, and clutch will be ignored during AESC operation.</p> <p>Note: Use parameters (75102), (75110) and (75132) to provide the specific input options.</p>	<p>Select 0: ON or 1: OFF</p>
<p>(Optional) Aux Throttle Control - Maximum Engine Speed (75082)</p>	<p>Check the recommendations for the AESC equipment.</p>
<p>Aux Throttle Control - Engine Speed Limit with VSS Fault (75183)</p>	<p>Set this to the value of the AESC Maximum Engine Speed (75082) parameter setting.</p>
<p>Aux Throttle Control - Engine Load Limit Select (75301)</p> <p>This parameter selects whether the AESC engine speed control is limited or deactivated if an engine load threshold is reached.</p> <p>If set to 0: Engine speed control will be deactivated if the engine speed reaches the Maximum Engine Load (75193) parameter setting.</p> <p>If set to 1: Engine speed will be limited if the engine speed reaches the Maximum Engine Load (75193) parameter setting.</p>	<p>A setting of 1 is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load (75193)</p> <p>The engine speed control will be limited or deactivated if this parameter value is reached.</p> <p>Note 1: The functionality of this parameter is dependent on the Engine Load Limit Select (75301) parameter setting.</p>	<p>Set between 30 and 100% based on the recommendations for the AESC equipment.</p> <p>NOTE: A setting of 100% is recommended.</p>
<p>Aux Throttle Control - Maximum Engine Load Time (75272)</p> <p>This parameter sets the time that the AESC will remain active while the engine load is at a maximum threshold.</p>	<p>A setting of 5 (seconds) is recommended.</p>

Parameter Name	Action Required
<p>Aux Throttle Control - Preset Engine Speed Select (75281)</p> <p>If enabled, the engine speed will be ramped immediately after the remote preset switch is enabled. Normal engine speed control AESC conditions apply.</p> <p>If set to 0: Remote preset functions work as described in the Remote Preset section. This is considered normal operation.</p> <p>If set from 1 - 6: 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.</p>	<p>Set to any of the following values:</p> <p>0: Off 1: Preset Speed 1 2: Preset Speed 2 3: Preset Speed 3 4: Preset Speed 4 5: Preset Speed 5 6: Preset Speed 6</p>

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