

DIRECT HOLD INPUT – SOFT START FOR STATIONARY APPLICATIONS

INPUT CE2: MODE BUTTON & INPUT WIRES 122 & 123 / OUTPUT WIRE 145

APPLICABLE TRANSMISSIONS: 3000 Product Family, 4000 Product Family

DESCRIPTION: This function is enabled when Secondary Mode is activated by pressing the MODE button and a switch is closed to complete the circuit between input wire 122 and ground. The transmission output speed must be below 90 rpm and engine speed must be below 1200 rpm before the operator closes the Direct Hold switch. The TCM will command the transmission to shift directly from Neutral to a specific Direct Hold range specified in the calibration in Converter Mode when the function is enabled and Drive is selected. Lockup is applied/released when the transmission output speed exceeds/drops-below a calibrated speed. Refer to Figure 1 on page 5 of this document for the lockup apply/release speeds. Normal transmission operation resumes when the function is disabled in Neutral. If the Direct Hold switch is opened while the function is active and the transmission is in the specified Direct Hold range, the function is disabled and the transmission is shifted to Neutral.

USES:

- Facilitates operator selection of a specified Direct Hold range in converter mode directly from Neutral.
- Can be used for soft start in sewer cleaners or generator set systems.

CUSTOMER MODIFIABLE CONSTANTS:

6-Speed Models	Required Value	Default Value	Allowable Range	Units
• Direct Hold Input: Range	4th (1:1) or 5th (overdrive)	4th (1:1)	4th or 5th	range
• Range Indicator	4th (1:1) or 5th (overdrive)	Neutral	R,N,6,5,4,3,2,1	range
4000 Series 7-Speed Models				
• Range Indicator	5th (1:1)	Neutral	R,N,7,6,5,4,3,2,1	range

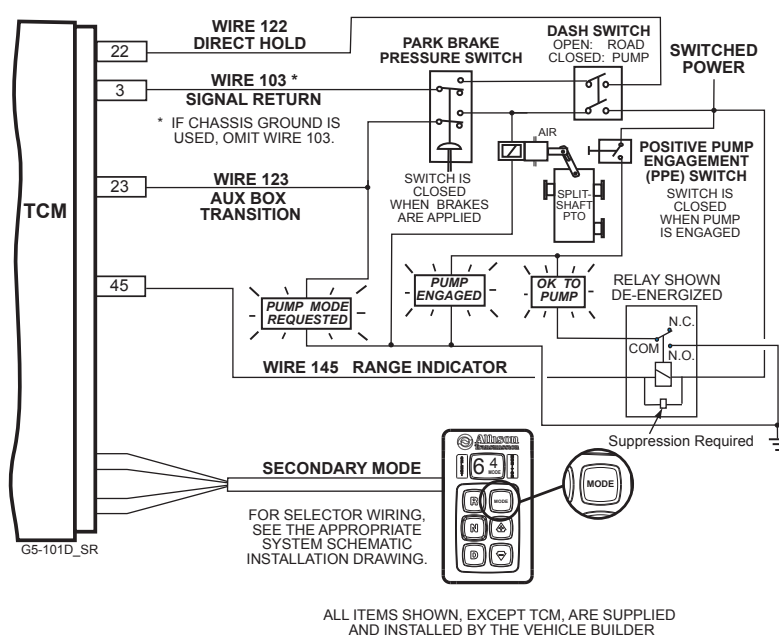
VOCATIONS: Sewer/Septic Vacuum, Generator Sets

FUNCTION RESPONSE TO SYSTEM POWER INTERRUPTION (power-off / power restored cycle):

Power off: No change

Power restored: Reset to Primary Mode and normal operation

NOTE: The Range Indicator default is Neutral. For installations utilizing Direct Hold – Soft Start, RANGE INDICATOR MUST BE CHANGED TO THE SPECIFIED DIRECT HOLD RANGE when the TCM calibration is defined or with Allison DOC®.



SYSTEM OPERATION OPERATOR ACTION - System Response

TO ENGAGE

- SELECT NEUTRAL USING THE SHIFT SELECTOR: Transmission shifts to Neutral.
- APPLY PARK BRAKE
- PRESS MODE BUTTON AND SELECT PUMP: Turns on Pump Mode Requested light. Turns on both input signals to TCM (wires 122 and 123) which activates Pump Mode. When split-shaft shifts, Pump Engaged light is turned on.
- WAIT MINIMUM OF 10 SECONDS: When inputs 122 and 123 are activated simultaneously, the TCM activates special logic to promote smooth engagement of the split shaft PTO by avoiding a butt tooth condition. If drive is selected prematurely, the transmission will shift into 1st range instead of the specified Direct Hold Range of 4th or 5th range. This will necessitate a shift to Neutral, followed by a 10 second delay before selecting Drive.
- SELECT DRIVE: Transmission shifts to the specified Direct Hold Range in converter mode. OK To Pump light is turned on.

TO DISENGAGE

- SELECT NEUTRAL USING THE SHIFT SELECTOR: Transmission shifts to Neutral if output shaft speed is less than 1000 rpm.
- SELECT ROAD MODE: PTO disengages.

WARNING! This schematic shows the intended use of the specified controls feature which has been validated in the configuration shown. Any miswiring or use of this feature which differs from that shown could result in damage to equipment or property, serious personal injury, or death. Allison Transmission is not liable for consequences associated with miswiring or unintended use of this feature.