



Operation & Maintenance Manual

NSV12N

NSV12NI

NSV16N

NSV16NI

NPV20ND

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13	EEPROM KO	(Warning)	Stored
It's due to a hardware or software defect of the non-volatile embedded memory supporting the controller parameters. This alarm does not inhibit the truck operations, but the truck will work with the default values. Try to execute a CLEAR EEPROM operation. Switch the key off and on to check the result. If the alarm occurs permanently, it is necessary to replace the Combiac1 controller. If the alarm disappears, the previously stored parameters will have been replaced by the default.			
19	LOGIC FAILURE #1	(Alarm)	Stored
This fault is displayed when the controller detects an overvoltage or undervoltage condition. Overvoltage threshold is 45V; undervoltage threshold is 9V in the 24V controller. If fault displayed at startup or in standby; in this case it is due to an undervoltage, so it is important to check following: a) Key input signal down going pulses (below undervoltage threshold) due external loads, like DC/DC converters starting up, relays or contactors energizing/ denenergizing. b) If no voltage transient is detected on the supply line and the alarm is present every time the key is switched ON, the fault is in the Combiac1 controller. If fault is displayed during motor driving; in this case due to an undervoltage or an overvoltage condition. a) If the alarm happens during traction acceleration or driving hydraulic functions, the fault is an undervoltage condition; check battery charge level and power cable connections. b) If the alarm happens during release braking, the fault is an overvoltage condition; check line contactor tips and battery power cable connections.			
28	PUMP VMN LOW	(Alarm)	Stored
Cause: The pump motor output is lower than expected, considering the pulswidthmodulation applied.			

LIMIT DEVICE	ON									ON	ON/OFF	Steering angle electrical limitation
DIRECTION GAUGE	OP #1									OP #1		factory setting
AUX FUNCTION 1	0									0		factory setting
DIAG MOTOR TEMP	ON									ON		factory setting
AUX OUTPUT #3	0									0		factory setting
TILLER DEAD ZONE	OFF									OFF	ON/OFF	When set to ON and recycled the key -- > there are 20 degrees dead zone area.
SPAC CONFIG	OFF									0	0-1	Which type of traction controller is used on a truck. 0 = AC1-SSL, 1 = Combi AC
SET MODEL:												
SYSTEM CONFIG	1									2		factory setting
AUTO REQ TYPE	0									0		factory setting
CONNECTED TO	EPS									EPS		2 = traction, 6 = steering
MODEL TYPE	x									x		factory setting
ADJUSTMENTS:												
ADJUSTMENT #01	0									0		factory setting
SET CURRENT	0									0		factory setting
ADJUSTMENT #02	x									90		factory setting
ADJUSTMENT #03	x									x		factory setting
ADJUSTMENT #04	x									x		factory setting
SET BATTERY TYPE	24V									24V		factory setting
SET SAT. FREQ.	78 Hz									78Hz		factory setting
OVERSAT FREQ.	1 Hz									1Hz		factory setting
MAXIMUM SLIP	5,00 Hz									5Hz		factory setting
AUX VOLTAGE #1	x									x		factory setting
AUX VOLTAGE #2	x									x		factory setting
NO LOAD CURRENT	13 A									13A		factory setting
ZERO SP POT	x									x		teaching of the zero point of wheel
SET STEER 0-POS.	x									x		straight ahead adjustment
SET MIN FB POT	x									x		teaching of the maximum anti-clockwise angle
SET MAX FB POT	x									x		teaching of the maximum clockwise angle
SPECIAL ADJUST:												
SET TEMPERATURE	x									x		factory setting
HIGH ADDRESS	0									0		factory setting
DEBUG OUTPUT	15									15		factory setting
MAX SP SLOPE	9									9		factory setting
HARDWARE SETTINGS:												
MAXIMUM CURRENT	50 A									50A		factory setting
CAN BUS	PRESENT									PRESENT		factory setting
SET HI RESOL AD	1									1		factory setting

TRUCK TYPES							
	NSV12N / NSV12NI	NPV20ND	NSV16N	NSV16NI	Default	Adjustment range	NOTE!
EV1 OPEN DELAY	1	1	1	1	1	0,1-5	Not used
EV1 CLOSE DELAY	2	2	2	2	2	0,1-5	Not used
START LOWER RED.	10	10	10	10	10	1-100	Lower speed reduction starting point on mast stage delay.
DUAL PUMP DEL	LEVEL = 2	LEVEL = 2	LEVEL = 2	LEVEL = 2	LEVEL = 2	0-9	Dual pump delay. Pump controller tries to drive pump motor with maximum current. If current stays on maximum value this time --> only one pump is used.
CONFIG MENU/ SET MODEL:							
MODEL TYPE	5	5	5	5	5	5	2 = traction, 5 = pump, 6 = steering, 10 = encoder-card
SET OPTIONS:							
HOURLY COUNTER	RUNNING	RUNNING	RUNNING	RUNNING	RUNNING		factory set
EVP TYPE	DIGITAL	DIGITAL	ANALOG	ANALOG	ANALOG		Proportional valve type, analog = proportional valve, digital = on/off valve
EV1 TYPE	DIGITAL	DIGITAL	DIGITAL	DIGITAL	DIGITAL		Proportional valve type, analog = proportional valve, digital = on/off valve
SET TEMPERATURE	NONE	NONE	NONE	NONE	NONE		factory set
SIDE STABILIZER	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT / PRESENT	PRESENT = Side stabilizers in use ABSENT = No side stabilizers
AUX OUTPUT #6	LEVEL = 3	LEVEL = 3	LEVEL = 3	LEVEL = 3	LEVEL = 3	0-7	Output XA1/14 0 = Not used 1 = Traction forward active 2 = traction backward active 3 = Traction active 4 = Lift active 5 = Lower active 6 = Lift/lower active 7 = Traction and lift/lower active
AUX OUTPUT #5	LEVEL = 9	LEVEL = 9	LEVEL = 9	LEVEL = 9	LEVEL = 9	0-9	Output XA1/32 0 = not used 1 = Traction forward active 2 = traction backward active 3 = Traction active 4 = Lift active 5 = Lower active 6 = Lift/lower active 7 = Traction and lift/lower active
DUAL PUMP	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT / PRESENT	PRESENT = Dual pump in use, ABSENT = Dual pump not used
AUTO INIT LOWER	NONE / OPTION #1	NONE	NONE	OPTION#1	OPTION#1	NONE, OPTION#1, OPTION#2	Automatic initial lower from input XA1/20. NONE = not used, OPTION#1 = automatic initial lower, OPTION#2 = manual initial lower.

Full Version Available

Caterpillar NSV12NI Stacker Operator Manual (SWHSU-00112)

Caterpillar NSV12NI Stacker operator manual, covers controls, inspections, battery care, and scheduled maintenance. Searchable PDF download.

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