

Pre/after heating system (Daily/Turbodaily vehicles)

Warning lamp operation sequence							
Engine coolant temperature	Operation/function	W/lamp on		Termostarter on		Solenoid valve on	
		YES	NO	YES	NO	YES	NO
Higher than preset value for preheating cut-in	Turn ignition key, starting switch in running position (voltage at terminal "15")	● ★ ◆			●		●
	After 2±0.2 seconds		●		●		●
Lower than preset value for preheating cut-in	Turn ignition key, starting switch in running position (voltage at terminal "15")	●		●			●
	After 2 seconds	●		●			●
	Preheating stage (duration according to diagram)	●		●			●
	Starter motor is actuated before preheating stage is completed (warning lamp on). This incorrect operation is inhibited: the control unit is reset.		●		●		●
	End of preheating stage		●	●			●
	If starting is not performed within 30±1.5 sec. From end of preheating stage (waiting time)		●		●		●
	Engine starting stage (lasting throughout starter motor turning time)	●		●		●	
	Air heating in intake manifold, engine started (after-heating)	●		●		●	
End of after-heating stage		●		●		●	

★ Warning lamps goes out when test is completed or if +15 is not supplied (WEHRLE)

◆ Warning lamps remains on throughout test duration even if +15 is not supplied (ITALAMEC)

Failure Code (Blink Code)

Circuit under examination	System and/or component	Defect	Fault diagnostic from warning lamp					Diagnosis duration			
			Type of signal		Operation			60 sec	Until key switch is cut off "15"	Until control unit is cut off	
			W/lamp off	W/lamp blinking		Key position +15	Starting				After-heating end
				1Hz	4Hz						
Defects outside control unit	Inverted polarity		●								
	Supply voltage higher than rated voltage (24V instead 12V)		●								
	Supply failure "30"			●		●			●		
	Supply failure "15"		●								
	Thermo-starters	Break		●		●			●		
		Shortcircuit		●		●			●		
	Solenoid valve	Break		●		●			●		
		Shortcircuit	●				●				
	Temp. sensor	Break		●				●	●		
	Warning lamp	Break	●								
Shortcircuit		●									
Defect inside control unit circuit	Thermo-starter relay	Contacts not closed			●	●			●		
		Contacts stuk			●			●		●	
	Solenoid valve relay	Contacts not closed			●		●		●		
		Contacts stuk			●			●		●	