



# 4

## TOUCH SCREEN DISPLAY ON THE EB1 PANEL

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#### 4.1. SWITCHING ON THE [EB1] PANEL

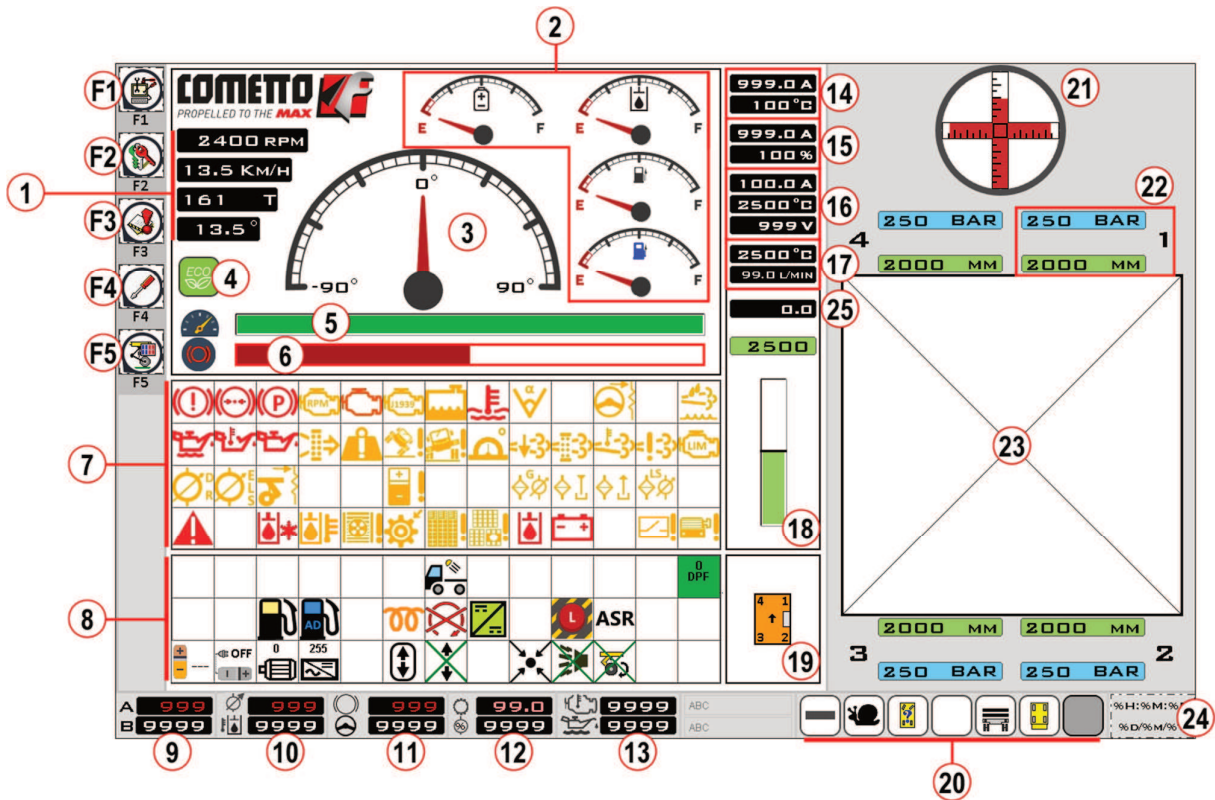
Switching on the [EB1] panel

- 1) Check that all the emergency stop buttons are reset (in the OFF position).




- 2) General key  in the ON position.
- 3) Press the  (INIT) button.


#### 4.2. START SCREEN



INDICATIVE FIGURE


















 **NOTE**  
If any of the pressure, inclination or speed values displayed is flashing in red, it means that the corresponding sensor is in error.

 **NOTE**  
Some functions may not be available to all users; only administrators can access and modify certain settings and force signals.

 **NOTE**  
Certain information, functions and icons in this chapter may not apply to your product, depending on the type of ECO1000 vehicle purchased.

Continued →

Continued →

Pos.	Description								
F1	<b>F1 Button.</b> It opens the Diagnostics screens.								
F2	<b>F2 Button.</b> When this button is pressed, the system prompts the user to enter the password, "XXXXX".  <b>NOTE</b> <i>After entering the correct password, the user can navigate and edit the information displayed on all pages, except for those that can be accessed and/or modified only by Cometto S.p.A technicians.</i>								
F3	<b>F3 Button.</b> It opens the error message screens.								
F4	<b>F4 Button.</b> It opens the settings screens of the different systems.								
F5.	<b>F5 Button.</b> It opens other screens.								
1	The values in the boxes represent: <table border="1" data-bbox="302 772 1156 974"> <tbody> <tr> <td><b>2400 RPM</b></td> <td>Motor shaft speed [rpm].</td> </tr> <tr> <td><b>13.5 KM/H</b></td> <td>Vehicle travel speed [km/h].</td> </tr> <tr> <td><b>161 T</b></td> <td>Carried load, net of the tare weight [t].</td> </tr> <tr> <td><b>13.5°</b></td> <td>Current steering angle [°].</td> </tr> </tbody> </table>  <b>NOTE</b> <i>The tare of the vehicle can be reset from the control board installed on the [EB1] panel. See  paragraph 3.4.1.</i>	<b>2400 RPM</b>	Motor shaft speed [rpm].	<b>13.5 KM/H</b>	Vehicle travel speed [km/h].	<b>161 T</b>	Carried load, net of the tare weight [t].	<b>13.5°</b>	Current steering angle [°].
<b>2400 RPM</b>	Motor shaft speed [rpm].								
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<b>161 T</b>	Carried load, net of the tare weight [t].								
<b>13.5°</b>	Current steering angle [°].								
2	<b>Level indicators.</b> (E) = Empty; (F) = Full. <table border="1" data-bbox="302 1159 1156 1390"> <tbody> <tr> <td></td> <td>Battery charge level. <sup>(1)</sup></td> </tr> <tr> <td></td> <td>Hydraulic oil level in the tank.</td> </tr> <tr> <td></td> <td>Diesel fuel level in the tank.</td> </tr> <tr> <td></td> <td>AdBlue® additive level in the tank. <sup>(2)</sup></td> </tr> </tbody> </table>		Battery charge level. <sup>(1)</sup>		Hydraulic oil level in the tank.		Diesel fuel level in the tank.		AdBlue® additive level in the tank. <sup>(2)</sup>
	Battery charge level. <sup>(1)</sup>								
	Hydraulic oil level in the tank.								
	Diesel fuel level in the tank.								
	AdBlue® additive level in the tank. <sup>(2)</sup>								
3	<b>Steering angle indicator [°]</b>								
4	<b>ECO Mode On/Off.</b> When the ECO mode is on, the corresponding icon is displayed. Engine speed fixed to 1500 rpm, resulting in lower fuel consumption by the engine, which remains at constant speed.  <b>NOTE</b> <i>Use the remote control to activate the ECO mode: see paragraph 5.5.</i> 								


































(1) = electric and hybrid vehicles only.

(2) = the SCR system (see paragraph 1.13.6) is available only on some of the Diesel engine equipped vehicles.






















Continued →

Continued "Start screen" →

Pos.	Description				
5	<p><b>Acceleration bar.</b> The filling of the bar indicates how much the vehicle is accelerating; maximum acceleration occurs when the bar is completely full.</p> <p> <b>NOTE</b> <i>The vehicle's acceleration is determined by the maximum acceleration value available - which can be changed using the potentiometer (8) on the radio control - combined with the operator's action on the joystick (10) on the radio control (lever forward). For more information see paragraph 5.5.</i></p> 				
6	<p><b>Braking system bar.</b> The filling of the bar represents the current braking intensity via the service brake; maximum intensity occurs when the bar is completely full. The bar is also completely full when the parking brake is applied.</p> <p> <b>NOTE</b> <i>The vehicle's braking force is obtained as a combination of the maximum braking intensity available - which can be changed using the potentiometer (19) on the radio remote control - and the operator's action on the joystick (10) on the radio remote control (lever backwards). For more information see paragraph 5.5.</i></p> 				
7	<p><b>Icons indicating a machine/component error/fault.</b></p> <p> <b>NOTE</b> <i>For the meaning of the icons, see paragraph 4.9.1.</i></p> 				
8	<p><b>Icons indicating information/warnings related to the machine or its components.</b> The icons inform/warn the operator about the active/inactive machine functions, procedures and components.</p> <p> <b>NOTE</b> <i>For more information and the meaning of the icons, see paragraph 4.9.2.</i></p> 				
9	<p><b>Motorization pressure.</b></p> <table border="1" data-bbox="305 1102 1156 1205"> <tr> <td></td> <td>Pressure on branch A of the hydraulic system motorization circuit [bar].</td> </tr> <tr> <td></td> <td>Pressure on branch B of the hydraulic system motorization circuit [bar].</td> </tr> </table>		Pressure on branch A of the hydraulic system motorization circuit [bar].		Pressure on branch B of the hydraulic system motorization circuit [bar].
	Pressure on branch A of the hydraulic system motorization circuit [bar].				
	Pressure on branch B of the hydraulic system motorization circuit [bar].				
10	<table border="1" data-bbox="305 1230 1156 1333"> <tr> <td></td> <td>Lifting and steering pump supply pressure [bar].</td> </tr> <tr> <td></td> <td>Hydraulic oil temperature [°C].</td> </tr> </table>		Lifting and steering pump supply pressure [bar].		Hydraulic oil temperature [°C].
	Lifting and steering pump supply pressure [bar].				
	Hydraulic oil temperature [°C].				
11	<p><b>Brake and steering pressure.</b></p> <table border="1" data-bbox="305 1398 1156 1501"> <tr> <td></td> <td>Hydraulic system brake circuit pressure [bar].</td> </tr> <tr> <td></td> <td>Hydraulic system steering circuit pressure [bar].</td> </tr> </table>		Hydraulic system brake circuit pressure [bar].		Hydraulic system steering circuit pressure [bar].
	Hydraulic system brake circuit pressure [bar].				
	Hydraulic system steering circuit pressure [bar].				
12	<p><b>Motorized axle drive.</b></p> <table border="1" data-bbox="305 1566 1156 1669"> <tr> <td></td> <td>Motorized axle control pressure [bar].</td> </tr> <tr> <td></td> <td>Available motorized axle displacement (%).</td> </tr> </table> <p> <b>NOTE</b> <i>The pressure range is between 0 and 25 bar. The displacement of the motorized axles ranges between 10 and 20 bar.</i></p>		Motorized axle control pressure [bar].		Available motorized axle displacement (%).
	Motorized axle control pressure [bar].				
	Available motorized axle displacement (%).				

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






















































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Pos.	Description				
13	<b>Engine parameters.</b>  Diesel engine temperature [°C].  Engine oil level.				
	<b>Pump power supply generator parameters. <sup>(1)</sup></b>  Generator output current [A].  Generator temperature, measured by the system [°C].				
15	<b>Battery pack parameters. <sup>(1)</sup></b>  Current at the battery bus (main bus of the machine) [A].  Battery pack residual charge (%).				
	<b>Inverter parameters <sup>(1)</sup></b>  Inverter current output [A].  Maximum inverter temperature, measured by the system [°C].  Inverter output voltage [V].				
17	<b>Cooling system parameters. <sup>(1)</sup></b>  Coolant temperature, measured by the system [°C].  Coolant flow rate [l/min].				
	<b>Vehicle loading platform average height indicators.</b> The height of the vehicle loading platform, displayed in the field (18), is an average value obtained from the heights of the four hydraulic points.				
18	 Average height of the loading platform [mm].  <ul style="list-style-type: none"> <li>• Empty bar = vehicle in the full-down position.</li> <li>• Full bar = vehicle in the full-up position.</li> </ul> The horizontal sign indicates the travel height.				
	<b>Representation of the vehicle or convoy.</b> This area provides a schematic representation of the ECO1000 vehicle and indicates whether it is in stand-alone mode (independent vehicle) or combined with other ECO1000 modules. <sup>(2)</sup>				
19	<table border="1"> <thead> <tr> <th>Stand-alone vehicle.</th> <th>Combined vehicle.</th> </tr> </thead> <tbody> <tr> <td>  </td> <td>  </td> </tr> </tbody> </table>	Stand-alone vehicle.	Combined vehicle.		
Stand-alone vehicle.	Combined vehicle.				
					

<sup>(1)</sup> = electric and hybrid vehicles only.<sup>(2)</sup> = where applicable.







































Continued →

Continued "Start screen" →

Pos.	Description																																																		
20	<p><b>Machine status icons.</b> The icons indicate:</p> <ul style="list-style-type: none"> <li>The type of gear engaged: <table border="1"> <tr> <td></td> <td>Forward gear..</td> <td></td> <td>To the right.</td> </tr> <tr> <td></td> <td>Reverse.</td> <td></td> <td>To the left.</td> </tr> <tr> <td></td> <td>Neutral Gear.</td> <td></td> <td></td> </tr> </table> </li> <li>The selected travel mode: <table border="1"> <tr> <td></td> <td>Very Slow (Inching) travel mode.</td> </tr> <tr> <td></td> <td>Slow travel mode.</td> </tr> <tr> <td></td> <td>Fast travel mode.</td> </tr> </table> </li> <li>The type of steering enabled: <table border="1"> <tr> <td></td> <td>No steering mode selected.</td> <td></td> <td>Longitudinal to centre steering.</td> </tr> <tr> <td></td> <td>Circular steering.</td> <td></td> <td>Central side steering.</td> </tr> <tr> <td></td> <td>Front fixed axle steering.</td> <td></td> <td>Rear fixed axle steering.</td> </tr> <tr> <td></td> <td>Parallel steering.</td> <td></td> <td>Parallel steering.</td> </tr> <tr> <td></td> <td>Left fixed axle steering.</td> <td></td> <td>Right fixed axle steering.</td> </tr> </table> </li> <li>(empty)</li> <li>The active lifting mode: <table border="1"> <tr> <td></td> <td>Parallel lifting/lowering mode: the suspensions all maintain the same height above the ground. (no lifting/lowering in progress)</td> <td></td> <td>Equalised lifting/lowering mode: the suspension maintains a level loading surface independent of the slope of the terrain. (no lifting/lowering in progress)</td> </tr> <tr> <td></td> <td>Vehicle is lifting in Parallel mode.</td> <td></td> <td>Lifting/lowering disabled.</td> </tr> <tr> <td></td> <td>Vehicle is lowering in Parallel mode.</td> <td></td> <td></td> </tr> </table> </li> </ul>		Forward gear..		To the right.		Reverse.		To the left.		Neutral Gear.				Very Slow (Inching) travel mode.		Slow travel mode.		Fast travel mode.		No steering mode selected.		Longitudinal to centre steering.		Circular steering.		Central side steering.		Front fixed axle steering.		Rear fixed axle steering.		Parallel steering.		Parallel steering.		Left fixed axle steering.		Right fixed axle steering.		Parallel lifting/lowering mode: the suspensions all maintain the same height above the ground. (no lifting/lowering in progress)		Equalised lifting/lowering mode: the suspension maintains a level loading surface independent of the slope of the terrain. (no lifting/lowering in progress)		Vehicle is lifting in Parallel mode.		Lifting/lowering disabled.		Vehicle is lowering in Parallel mode.		
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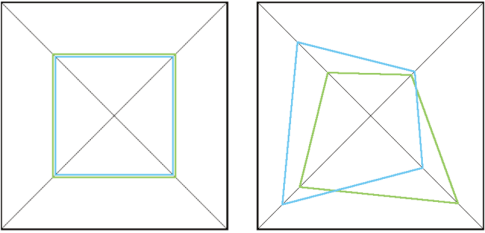


Continued →

Pos.	Description																				
20	<p><b>Machine status icons.</b> (continued)</p> <ul style="list-style-type: none"> <li>If the vehicle is used on its own or in a convoy and if, within that convoy, it is a SLAVE or MASTER vehicle <sup>(1)</sup>: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"></td> <td>Master mode — on hold.</td> <td style="text-align: center;"></td> <td>Master mode — communication on.</td> </tr> <tr> <td style="text-align: center;"></td> <td>Slave mode — on hold.</td> <td style="text-align: center;"></td> <td>Slave mode — communication on.</td> </tr> <tr> <td style="text-align: center;"></td> <td>Single mode.</td> <td></td> <td></td> </tr> </table> </li> <li>Electronic program status: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"></td> <td>Machine computer (grey modules) successfully loaded.</td> </tr> <tr> <td style="text-align: center;"></td> <td>Machine computer (grey modules) and safety computer (yellow modules) successfully loaded → the electronic program is on and ready to operate the vehicle.</td> </tr> <tr> <td style="text-align: center;"></td> <td>Machine computer (grey modules) and safety computer (yellow modules) successfully loaded and [INIT] button pressed → the vehicle is operational.</td> </tr> <tr> <td style="text-align: center;"></td> <td>One or more emergency buttons have been pressed, the vehicle is not operational.</td> </tr> </table> </li> </ul> <p> <b>NOTE</b> For more information see Chapter 5 and, for convoy combinations, see Chapter 12 <sup>(1)</sup>. </p>		Master mode — on hold.		Master mode — communication on.		Slave mode — on hold.		Slave mode — communication on.		Single mode.				Machine computer (grey modules) successfully loaded.		Machine computer (grey modules) and safety computer (yellow modules) successfully loaded → the electronic program is on and ready to operate the vehicle.		Machine computer (grey modules) and safety computer (yellow modules) successfully loaded and [INIT] button pressed → the vehicle is operational.		One or more emergency buttons have been pressed, the vehicle is not operational.
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	One or more emergency buttons have been pressed, the vehicle is not operational.																				
21	<p><b>Load centre of gravity indicator.</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"></td> <td>The vehicle is stable when the position of the centre of gravity of the load is at the centre of the indicator displayed on the touch screen.</td> </tr> <tr> <td style="text-align: center;"></td> <td> If the load's centre of gravity shifts closer to the edge of the indicator, the system will warn the operator of the danger of overturning by displaying an appropriate icon.</td> </tr> </table>		The vehicle is stable when the position of the centre of gravity of the load is at the centre of the indicator displayed on the touch screen.		 If the load's centre of gravity shifts closer to the edge of the indicator, the system will warn the operator of the danger of overturning by displaying an appropriate icon.																
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	 If the load's centre of gravity shifts closer to the edge of the indicator, the system will warn the operator of the danger of overturning by displaying an appropriate icon.																				
22	<p><b>Hydraulic point height and pressure.</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"><b>1</b></td> <td>Hydraulic point identification code.</td> </tr> <tr> <td style="text-align: center;"><b>250 BAR</b></td> <td>Hydraulic point pressure, measured by the system [bar].</td> </tr> <tr> <td style="text-align: center;"><b>2000 MM</b></td> <td>Hydraulic point height from the ground [mm].</td> </tr> </table>	<b>1</b>	Hydraulic point identification code.	<b>250 BAR</b>	Hydraulic point pressure, measured by the system [bar].	<b>2000 MM</b>	Hydraulic point height from the ground [mm].														
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<b>2000 MM</b>	Hydraulic point height from the ground [mm].																				

<sup>(1)</sup> = where applicable.

Continued →

Continued "Start screen" →

Pos.	Description
23	<p><b>Hydraulic point pressure and height visual indicator.</b></p> <p>In the white square area there are two rectangles, the vertices of which move along the diagonals of the white square, according to the pressure and height values of the corresponding hydraulic point. The higher the values, the further the polygon vertices move from the diagonal crossing point.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>The blue and green lines represent the hydraulic point pressure and height values, respectively. A regular polygon shape indicates similar pressure and height values among the points (on the left); an irregular shape indicates imbalance among values (on the right).</p> </div> </div>
24	<p><b>Date and time.</b></p> <p>Tap on the box to go back while browsing the program screens.</p>
25	<p><b>Odometer.</b></p> <p>The box indicates the distance travelled by the vehicle in km.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p><b>NOTE</b></p> <p><i>The countdown can be reset from the selector switch(21) on the radio control. See section 5.5.</i></p> </div>  </div>

## 4.3. DIAGNOSTICS SCREENS

### Foreword

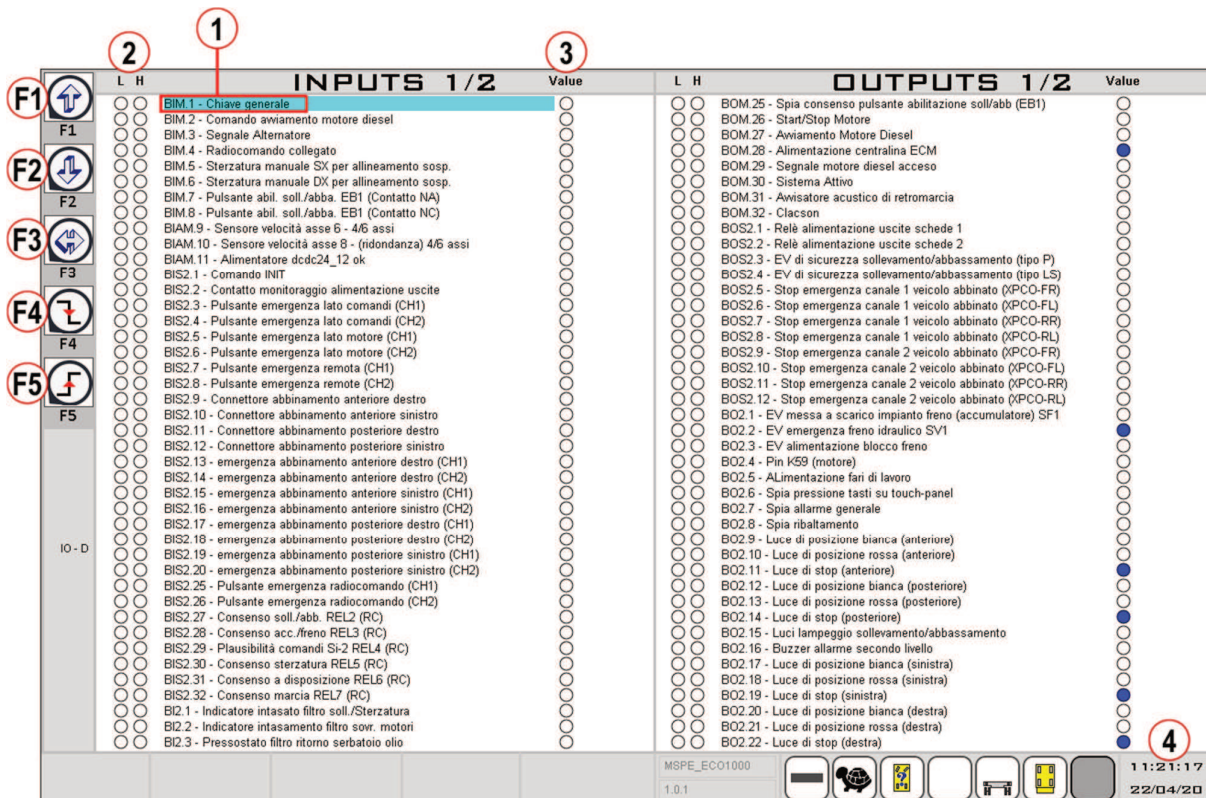
Some pages and/or their functionalities described herein may require a higher level of security, reserved for Cometto S.p.A. technicians.

### 4.3.1 Digital input/output screen

#### Opening the page

To open the page, from the start screen press:

**F2 → Password → Enter → Login → Date&time → F1 → F1.**



INPUTS 1/2				OUTPUTS 1/2			
L	H	Value	L	H	Value		
		<b>BIM.1 - Chiave generale</b>			BOM.25 - Spia consenso pulsante abilitazione soll/abb (EB1)		
		BIM.2 - Comando avviamento motore diesel			BOM.26 - Start/Stop Motore		
		BIM.3 - Segnale Alternatore			BOM.27 - Avviamento Motore Diesel		
		BIM.4 - Radiocomando collegato			BOM.28 - Alimentazione centralina ECM		
		BIM.5 - Sterzata manuale SX per allineamento sosp.			BOM.29 - Segnale motore diesel acceso		
		BIM.6 - Sterzata manuale DX per allineamento sosp.			BOM.30 - Sistema Attivo		
		BIM.7 - Pulsante abil. soll./abba. EB1 (Contatto NA)			BOM.31 - Avvisatore acustico di retromarcia		
		BIM.8 - Pulsante abil. soll./abba. EB1 (Contatto NC)			BOM.32 - Clacson		
		BIAM.9 - Sensore velocità asse 6 - 4/6 assi			BOS2.1 - Relè alimentazione uscite schede 1		
		BIAM.10 - Sensore velocità asse 8 - (ridondanza) 4/6 assi			BOS2.2 - Relè alimentazione uscite schede 2		
		BIAM.11 - Alimentatore dcdc24_12 ok			BOS2.3 - EV di sicurezza sollevamento/abbassamento (tipo P)		
		BIS2.1 - Comando INIT			BOS2.4 - EV di sicurezza sollevamento/abbassamento (tipo LS)		
		BIS2.2 - Contatto monitoraggio alimentazione uscite			BOS2.5 - Stop emergenza canale 1 veicolo abbinato (XPCO-FR)		
		BIS2.3 - Pulsante emergenza lato comandi (CH1)			BOS2.6 - Stop emergenza canale 1 veicolo abbinato (XPCO-RR)		
		BIS2.4 - Pulsante emergenza lato comandi (CH2)			BOS2.7 - Stop emergenza canale 1 veicolo abbinato (XPCO-RL)		
		BIS2.5 - Pulsante emergenza lato motore (CH1)			BOS2.8 - Stop emergenza canale 1 veicolo abbinato (XPCO-FL)		
		BIS2.6 - Pulsante emergenza lato motore (CH2)			BOS2.9 - Stop emergenza canale 2 veicolo abbinato (XPCO-FR)		
		BIS2.7 - Pulsante emergenza remota (CH1)			BOS2.10 - Stop emergenza canale 2 veicolo abbinato (XPCO-FL)		
		BIS2.8 - Pulsante emergenza remota (CH2)			BOS2.11 - Stop emergenza canale 2 veicolo abbinato (XPCO-RR)		
		BIS2.9 - Connettore abbinamento anteriore destro			BOS2.12 - Stop emergenza canale 2 veicolo abbinato (XPCO-RL)		
		BIS2.10 - Connettore abbinamento anteriore sinistro			BO2.1 - EV messa a scarico impianto freno (accumulatore) SF1		
		BIS2.11 - Connettore abbinamento posteriore destro			BO2.2 - EV emergenza freno idraulico SV1		
		BIS2.12 - Connettore abbinamento posteriore sinistro			BO2.3 - EV alimentazione blocco freno		
		BIS2.13 - emergenza abbinamento anteriore destro (CH1)			BO2.4 - Pin K59 (motore)		
		BIS2.14 - emergenza abbinamento anteriore destro (CH2)			BO2.5 - Alimentazione fari di lavoro		
		BIS2.15 - emergenza abbinamento anteriore sinistro (CH1)			BO2.6 - Spia pressione tasti su touch-panel		
		BIS2.16 - emergenza abbinamento anteriore sinistro (CH2)			BO2.7 - Spia allarme generale		
		BIS2.17 - emergenza abbinamento posteriore destro (CH1)			BO2.8 - Spia ribaltamento		
		BIS2.18 - emergenza abbinamento posteriore destro (CH2)			BO2.9 - Luce di posizione bianca (anteriore)		
		BIS2.19 - emergenza abbinamento posteriore sinistro (CH1)			BO2.10 - Luce di posizione rossa (anteriore)		
		BIS2.20 - emergenza abbinamento posteriore sinistro (CH2)			BO2.11 - Luce di stop (anteriore)		
		BIS2.25 - Pulsante emergenza radiocomando (CH1)			BO2.12 - Luce di posizione bianca (posteriore)		
		BIS2.26 - Pulsante emergenza radiocomando (CH2)			BO2.13 - Luce di posizione rossa (posteriore)		
		BIS2.27 - Consenso soll./abb. REL2 (RC)			BO2.14 - Luce di stop (posteriore)		
		BIS2.28 - Consenso acc./freno REL3 (RC)			BO2.15 - Luci lampeggio sollevamento/abbassamento		
		BIS2.29 - Plausibilità comandi Si-2 REL4 (RC)			BO2.16 - Buzzer allarme secondo livello		
		BIS2.30 - Consenso sterzata REL5 (RC)			BO2.17 - Luce di posizione bianca (sinistra)		
		BIS2.31 - Consenso a disposizione REL6 (RC)			BO2.18 - Luce di posizione rossa (sinistra)		
		BIS2.32 - Consenso marcia REL7 (RC)			BO2.19 - Luce di stop (sinistra)		
		BI2.1 - Indicatore intasato filtro soll./Sterzata			BO2.20 - Luce di posizione bianca (destra)		
		BI2.2 - Indicatore intasamento filtro sov. motori			BO2.21 - Luce di posizione rossa (destra)		
		BI2.3 - Pressostato filtro ritorno serbatoio olio			BO2.22 - Luce di stop (destra)		

Pos.	Description
F1	<b>F1 Button.</b> Press it to scroll up through the list of inputs/outputs.
F2	<b>F2 Button.</b> Press it to scroll down through the list of inputs/outputs.
F3	<b>F3 Button.</b> Press it to move between the input/output columns.
F4	<b>F4 Button.</b> Press is to force the selected input/output signal to 0.
F5	<b>F5 Button.</b> Press is to force the selected input/output signal to 1.
1	<b>Name and brief description of the input/output signal.</b> The selected signal is highlighted.

Continued →

Continued "Digital input/output screen" →

Pos.	Description			
2	<b>Forcing status.</b>			
	<table border="1"> <tr> <td>L</td> <td>When the input/output signal is forced to 0, the dot is blue ●.</td> </tr> <tr> <td>H</td> <td>When the input/output signal is forced to 1, the dot is blue ●.</td> </tr> </table>	L	When the input/output signal is forced to 0, the dot is blue ●.	H
L	When the input/output signal is forced to 0, the dot is blue ●.			
H	When the input/output signal is forced to 1, the dot is blue ●.			
3	<b>Input/output signal status.</b>			
	<table border="1"> <tr> <td>Value</td> <td>When the input/output signal is forced, the dot is blue ●.</td> </tr> </table>	Value	When the input/output signal is forced, the dot is blue ●.	
Value	When the input/output signal is forced, the dot is blue ●.			
4	<b>Date and time.</b> Tap on the box to return to the start screen.			

### 4.3.2 Analogue input/output screen

Opening the page

To open the page, from the start screen press:  
**F2 → Password → Enter → Login → Date&time → F1 → F2.**

Pos.	Description
F1	<b>F1 Button.</b> Press it to scroll up through the list of inputs/outputs.
F2	<b>F2 Button.</b> Press it to scroll down through the list of inputs/outputs.

Continued →

Continued →

Pos.	Description			
F3	<b>F3 Button.</b> Press it to move between the input/output columns.			
F4	<b>F4 Button.</b> Press it to disable the forcing of the selected input/output signal.			
F5.	<b>F5 Button.</b> Press it to enable the forcing of the selected input/output signal.			
1	<b>Name and brief description of the input/output signal.</b> The selected signal is highlighted.			
2	<b>Forcing status.</b>			
	<table border="1"> <tr> <td>H</td> <td>When the input/output signal is forced, the dot is black ●.</td> </tr> <tr> <td>Force</td> <td>Tap on the box; the system will display a numeric keypad that can be used to enter the input/output signal force value.</td> </tr> </table>	H	When the input/output signal is forced, the dot is black ●.	Force
H	When the input/output signal is forced, the dot is black ●.			
Force	Tap on the box; the system will display a numeric keypad that can be used to enter the input/output signal force value.			
3	<b>Input/output signal status.</b>			
	<table border="1"> <tr> <td>Value</td> <td>The box displays the current value of the input/output signal.</td> </tr> <tr> <td>Err</td> <td>When there is an error/fault on the input/output signal, the dot is blue ●.</td> </tr> </table>	Value	The box displays the current value of the input/output signal.	Err
Value	The box displays the current value of the input/output signal.			
Err	When there is an error/fault on the input/output signal, the dot is blue ●.			
4	<b>Date and time.</b> Tap on the box to return to the start screen.			

### 4.3.3 Steering parameter screen

#### Opening the page

To open the page, from the start screen press:  
**F2 → Password → Enter → Login → Date&time → F1 → F3 → F1.**



Steer - Axes Data					
	AL_CNC	Angle	Err Servo	DAC Vel	Pos Dst
AXE 1	0	0.00	0.00	0	0.00
AXE 2	0	0.00	0.00	0	0.00
AXE 3	0	0.00	0.00	0	0.00
AXE 4	0	0.00	0.00	0	0.00
AXE 5	0	0.00	0.00	0	0.00
AXE 6	0	0.00	0.00	0	0.00
AXE 7	0	0.00	0.00	0	0.00
AXE 8	0	0.00	0.00	0	0.00
AXE 9	0	0.00	0.00	0	0.00
AXE 10	0	0.00	0.00	0	0.00
AXE 11	0	0.00	0.00	0	0.00
AXE 12	0	0.00	0.00	0	0.00

Steer - Virtual Axes Data			
	Angle	Pos X	Pos Y
Pos Master	0.00	0	0
Pos Master 1	0.00	0	0
Center	0	0	0
New Center	0	0	0



**NOTE**  
 Page reserved for Cometto S.p.A. technicians.

To return to the start screen, tap on the date and time box.

### 4.3.4 [EB1] panel keyboard diagnostics screen

#### Opening the page



To open the page, from the start screen press:  
**F2 → Password → Enter → Login → Date&time → F1 → F3 → F2 → F2.**

#### Description

This screen can be used to check the operation of the [EB1] panel control board keyboards:




- When one of the keys or the wheel is operated, the corresponding field on the [EB1] panel display should turn green.

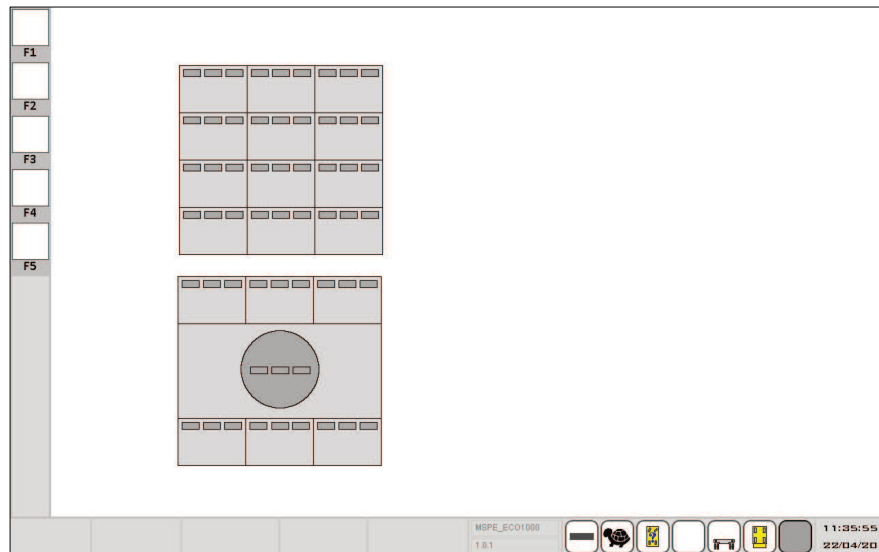
**Key operation indicator light.**

	Key not operated or not working.
	Key operated and working.

- Similarly, the indicator lights on the actual keys should match their on-screen representation.

**Correspondence check.**

	On-screen representation.
	Indicator light working.
	Indicator light not working.



**NOTE**  
Page reserved for Cometto S.p.A. technicians.

To return to the start screen, tap on the date and time box.

### 4.3.5 Radio control diagnostics screen

#### Opening the page

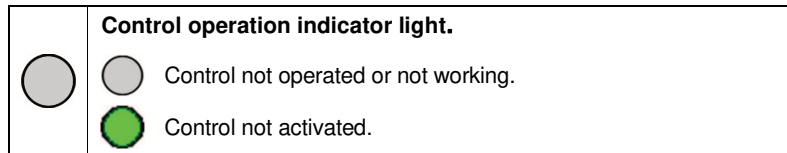
To open the page, from the start screen press:

**F2 → Password → Enter → Login → Date&time → F1 → F3 → F2 → F3.**

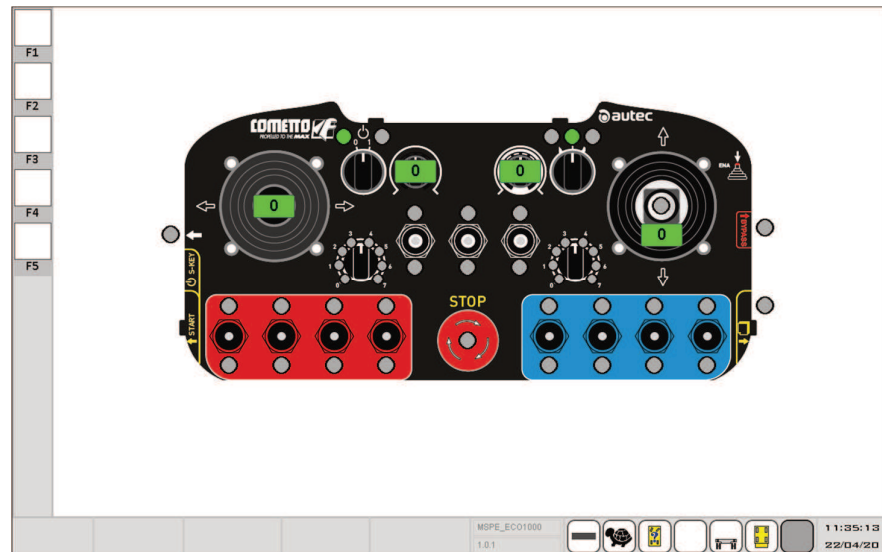
#### Description

Once the connection between the transmitter module and the receiver module has been established, this screen can be used to check the operation of the radio control:

- When a selector/key is operated, the corresponding [EB1] panel indicator light turns green.



- When a joystick or a potentiometer is operated, the number displayed in the corresponding box increases/decreases depending on the direction of operation of the control.



#### NOTE

Page reserved for Cometto S.p.A. technicians.

To return to the start screen, tap on the date and time box.

### 4.3.6 Engine parameter screen

#### Opening the page

To open the page, from the start screen press:

**F2 → Password → Enter → Login → Date&time → F1 → F3 → F3.**



**NOTE**  
Page reserved for Cometto S.p.A. technicians.

To return to the start screen, tap on the date and time box.

### 4.3.7 General convoy diagnostics screen <sup>(1)</sup>

#### Opening the page

When a convoy is created, the page shows real-time information of all its constituent elements.

To access the page, press the keys from the home screen:

**F2 → Password → Enter → Login → Date&time → F1 → F3 → F5.**

#	Pressure	Height	RPM	TEng	PA	PB	Phydr	PEls	PAccBr	PBr	LwOil	TOil	ErrSt	SOC
1	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0
2	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0
3	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0
4	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0



**NOTE**  
Page reserved for Cometto S.p.A. technicians

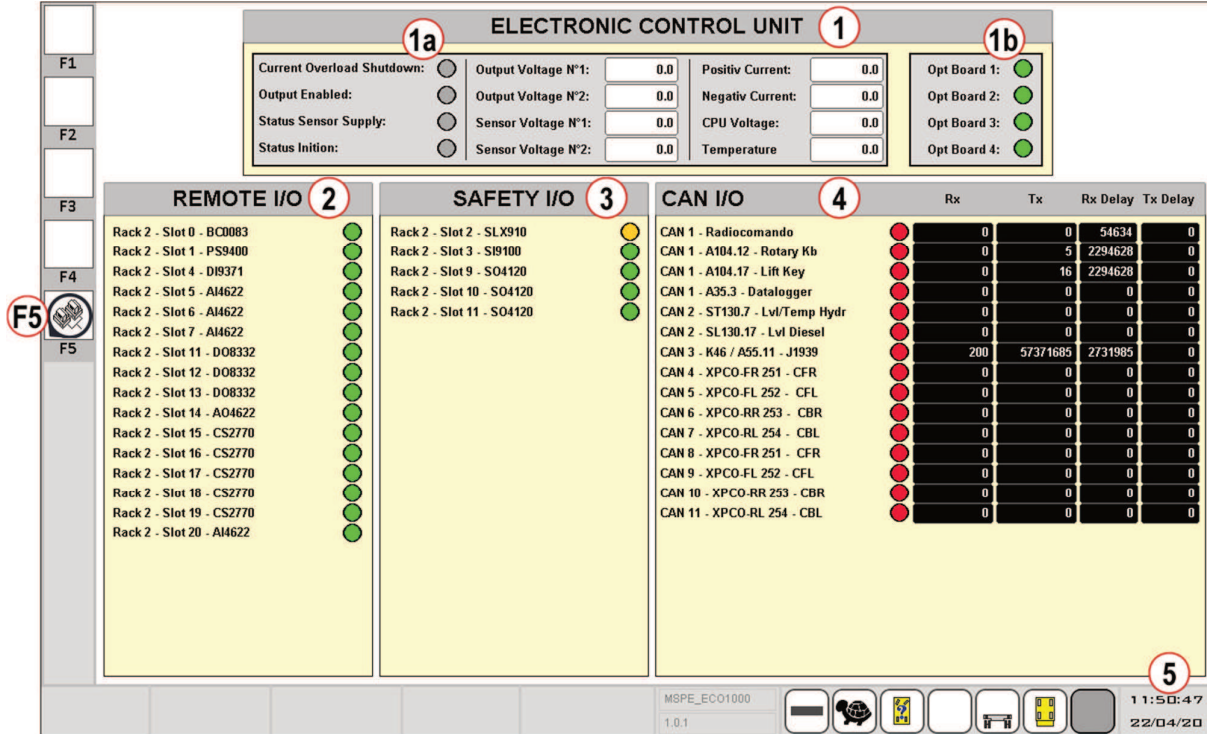
To return to the start screen, tap on the date and time box.

<sup>(1)</sup> = where applicable.

### 4.3.8 Electronic control and communication board screen

**Opening the page**

To open the page, from the start screen press:  
**F2 → Password → Enter → Login → Date&time → F1 → F4 → F3.**



Pos.	Description				
F5	<b>F5 Button.</b> Press it to open the safety circuit settings screen, described in paragraph 4.3.5.1.				
1	<b>Electronic control unit.</b>				
1a	<p><b>Electronic control unit status.</b> The boxes display the voltage, current, and temperature values of the control unit boards. The light indicators can take two different colours:</p> <table border="1"> <tr> <td style="background-color: red; color: white;">RED</td> <td>If the control unit stops due to a current overload.</td> </tr> <tr> <td style="background-color: green; color: white;">GREEN</td> <td>If the conditions next to the indicator light are met: active output / sensor power supply / control unit on.</td> </tr> </table>	RED	If the control unit stops due to a current overload.	GREEN	If the conditions next to the indicator light are met: active output / sensor power supply / control unit on.
RED	If the control unit stops due to a current overload.				
GREEN	If the conditions next to the indicator light are met: active output / sensor power supply / control unit on.				
1b	<p><b>Electronic control unit board status.</b> When the board is active, the dot is green ●</p>				
2	<p><b>Vehicle electronic board status.</b> The system displays the electronic board location and code. The light indicators can take two different colours:</p> <table border="1"> <tr> <td style="background-color: red; color: white;">RED</td> <td>Board fault.</td> </tr> <tr> <td style="background-color: green; color: white;">GREEN</td> <td>Correct operation.</td> </tr> </table>	RED	Board fault.	GREEN	Correct operation.
RED	Board fault.				
GREEN	Correct operation.				

Continued →

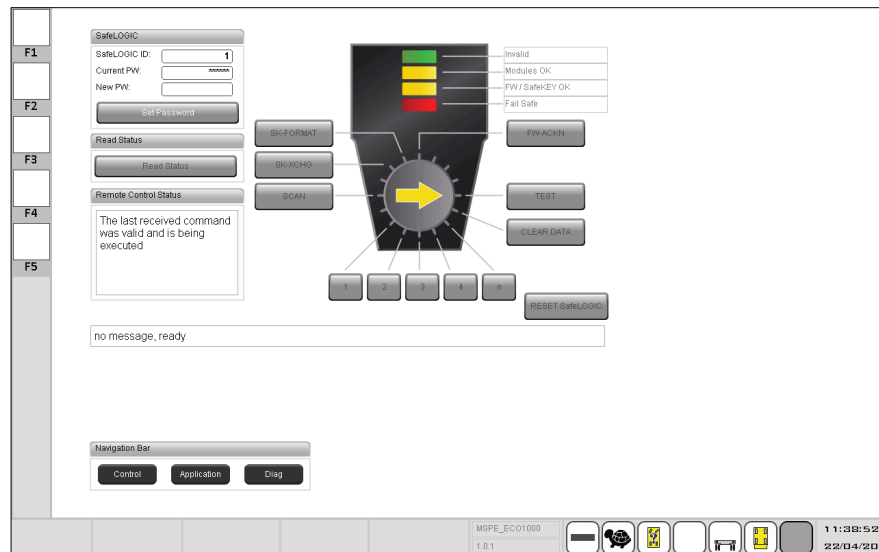
Continued “Electronic control and communication board screen” →

Pos.	Description			
3	<b>Electronic safety board status.</b> The system displays the electronic board location and code. The light indicators can take two different colours:			
	<table border="1"> <tr> <td style="background-color: red; color: white; text-align: center;">RED</td> <td>Board fault.</td> </tr> <tr> <td style="background-color: green; color: white; text-align: center;">GREEN</td> <td>Correct operation.</td> </tr> </table>	RED	Board fault.	GREEN
RED	Board fault.			
GREEN	Correct operation.			
4	<b>CAN communication object status.</b> The system display the codes of the objects and a brief description thereof, the number of data packets received and transmitted and any delay in their reception/transmission. The light indicators can take two different colours:			
	<table border="1"> <tr> <td style="background-color: red; color: white; text-align: center;">RED</td> <td>Communication lost.</td> </tr> <tr> <td style="background-color: green; color: white; text-align: center;">GREEN</td> <td>Communication on.</td> </tr> </table>	RED	Communication lost.	GREEN
RED	Communication lost.			
GREEN	Communication on.			
5	<b>Date and time.</b> Tap on the box to return to the start screen.			

#### 4.3.8.1. Safety circuit module settings screen

##### Opening the page

To open the page, from the start screen press:  
**F2 → Password → Enter → F1 → F4 → F3 → F5.**



**NOTE**  
Page reserved for Cometto S.p.A. technicians.

To return to the start screen, tap on the date and time box.

### 4.3.9 Alarm history and active error/fault alarms screen

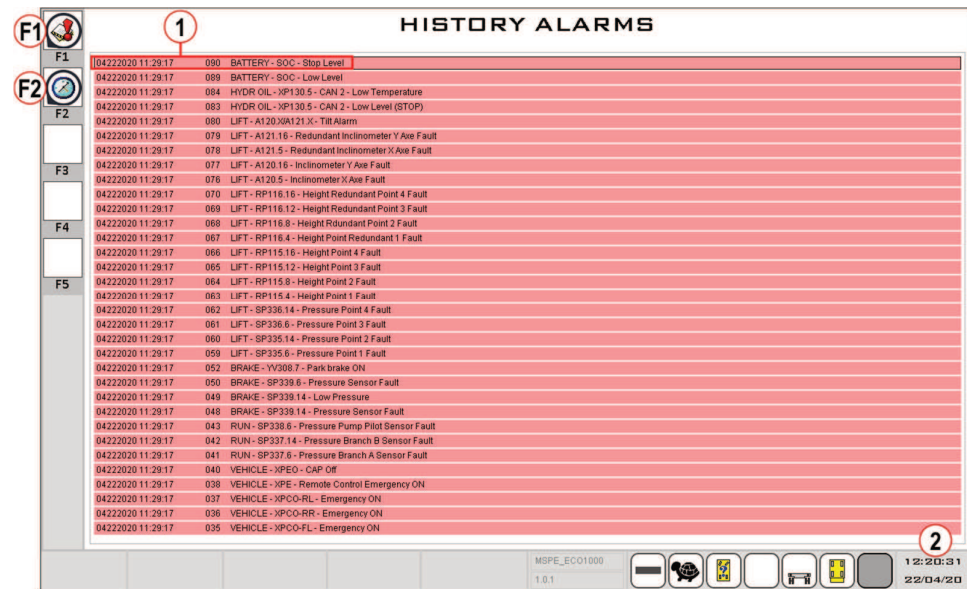
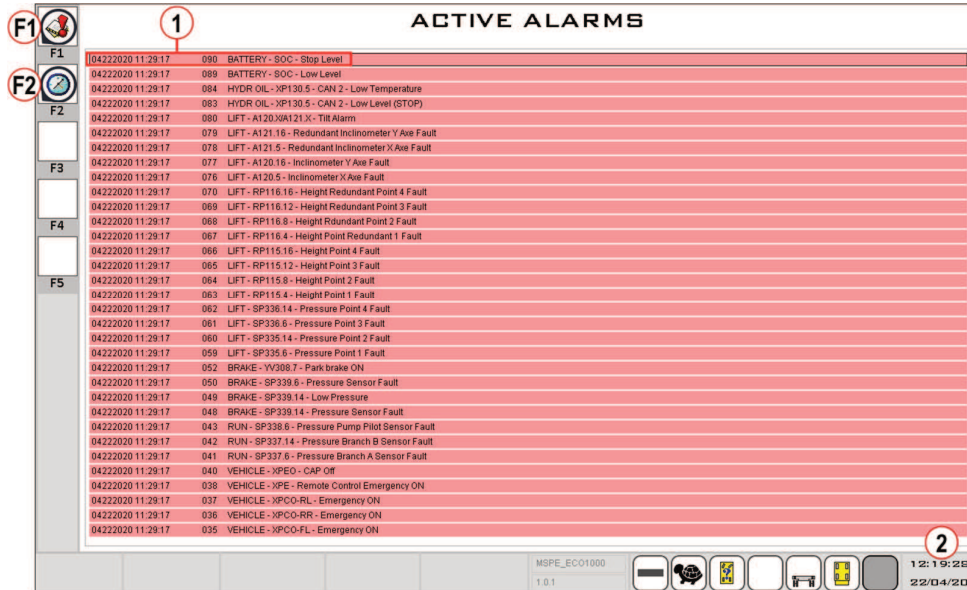
#### Opening the pages

To open the “ACTIVE ALARMS” page, from the start screen press:

**F2 → Password → Enter → Login → Date&time → F3 → F1.**

To open the “HISTORY ALARMS” page, from the start screen press:

**F2 → Password → Enter → Login → Date&time → F3 → F2.**



Pos.	Description
F1	<b>F1 Button.</b> Press it to open the “ACTIVE ALARMS” page.
F2	<b>F2 Button.</b> Press it to open the “HISTORY ALARMS” page.
1	<b>Report.</b> The field displays the date, time, code, and a brief description of the error/fault.
2	<b>Date and time.</b> Tap on the box to return to the start screen.

#### 4.4. CONVOY CONFIGURATION SCREEN (1)

##### Opening the page

When making a convoy, open the configuration page. From the start screen press:  
F2 → Password → Enter → Login → Date&time → F4 → F1 → F2.



**NOTE**  
More information and the configuration procedure can be found in paragraph 12.4.



To return to the start screen, tap on the date and time box.

(1) = where applicable.

#### 4.5. SUSPENSION RESET SCREEN

##### Opening the page

When replacing and/or calibrating a steering potentiometer, open the configuration page. From the start screen press:

F2 → Password → Enter → Login → Date&time → F4 → F3 → F1.

INDICATIVE FIGURE

AXE	Current Value	0° Tmp Value	90° Tmp Value	0° Stored Value	90° Stored Value	K Value Calculated	SET 0°	SET 90°	SAVE
1	0	<input type="checkbox"/>	<input type="checkbox"/>	8135	0	0.00037	SET 0°	SET 90°	SAVE
2	0	<input type="checkbox"/>	<input type="checkbox"/>	8359	0	0.00038			
3	0	<input type="checkbox"/>	<input type="checkbox"/>	8180	0	0.00038			
4	0	<input type="checkbox"/>	<input type="checkbox"/>	8306	0	0.00037			
5	0	<input type="checkbox"/>	<input type="checkbox"/>	8185	0	0.00037			
6	0	<input type="checkbox"/>	<input type="checkbox"/>	8233	0	0.00038			
7	0	<input type="checkbox"/>	<input type="checkbox"/>	8234	0	0.00038			
8	0	<input type="checkbox"/>	<input type="checkbox"/>	8391	0	0.00037			
9	0	<input type="checkbox"/>	<input type="checkbox"/>	8226	0	0.00037			
10	0	<input type="checkbox"/>	<input type="checkbox"/>	8316	0	0.00038			
11	0	<input type="checkbox"/>	<input type="checkbox"/>	8227	0	0.00038			
12	0	<input type="checkbox"/>	<input type="checkbox"/>	8296	0	0.00037			



**NOTE**  
More information and the replacement/calibration procedure can be found in paragraph 9.6.



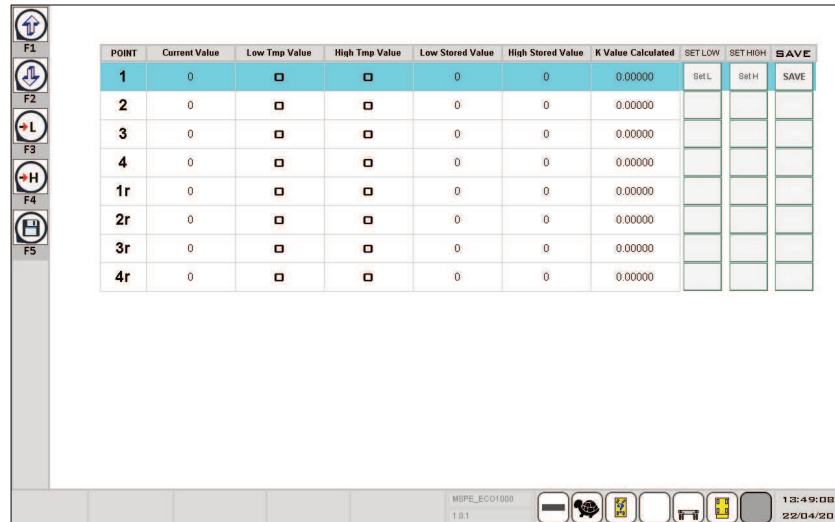
To return to the start screen, tap on the date and time box.

## 4.6. HEIGHT RESET SCREEN

### Opening the page

When replacing and/or calibrating a lifting potentiometer, open the configuration page.  
From the start screen press:

**F2 → Password → Enter → Login → Date&time → F4 → F3 → F2.**



POINT	Current Value	Low Tmp Value	High Tmp Value	Low Stored Value	High Stored Value	K Value Calculated	SET LOW	SET HIGH	SAVE
1	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000	SetL	SetH	SAVE
2	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000			
3	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000			
4	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000			
1r	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000			
2r	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000			
3r	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000			
4r	0	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0.00000			



#### NOTE

More information and the replacement/calibration procedure can be found in paragraph 10.9.



To return to the start screen, tap on the date and time box.

## 4.7. PILOT VALVE SET-UP SCREEN

### Foreword

Using this page, you can set up and save the operating parameters of the motorized axle valve (motorization hydraulic circuit) according to the minimum and maximum pressures within which it operates.

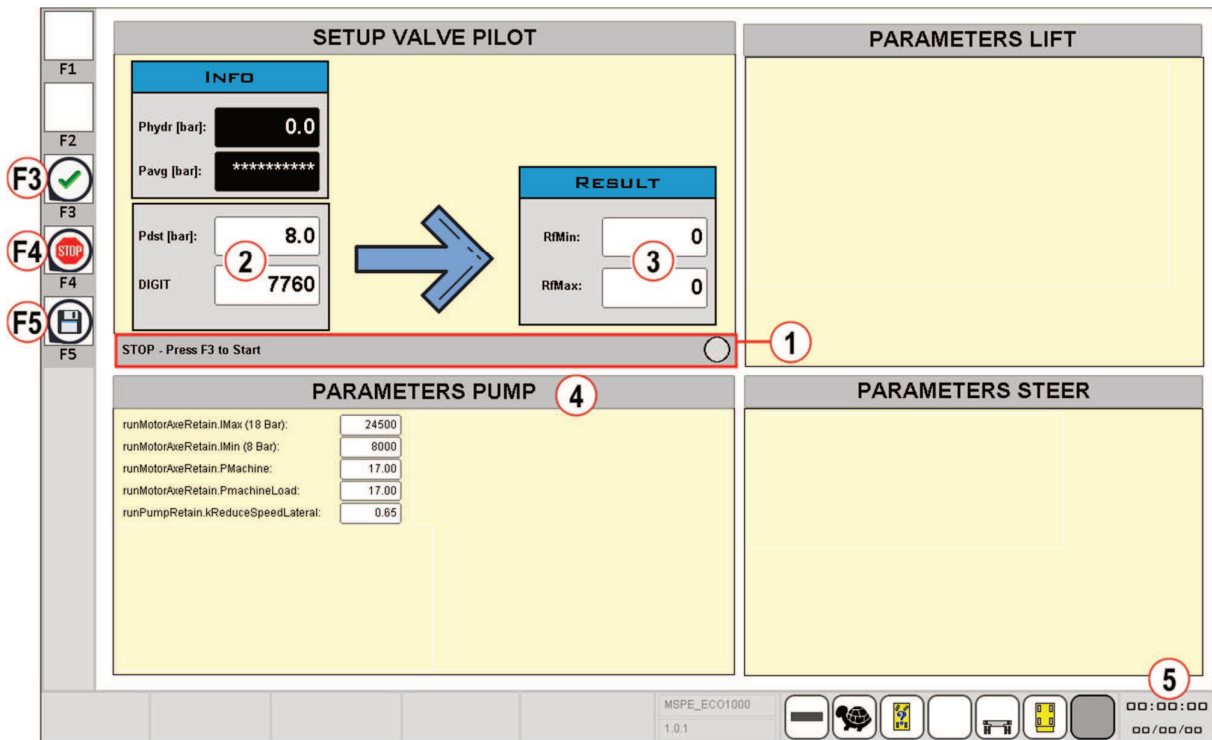
The set-up consists of first finding the minimum working pressure of the pilot valve, then the maximum pressure and identifying the operating parameters corresponding to the two identified conditions.

The set-up is automatic: simply start it, wait until it is complete and then save the results as described below.

### Opening the page

To access the page, press the keys from the home screen:




**F2 → Password → Enter → Login → Date&time → F4 → F3 → F3.**



Pos.	Description
F3	<b>F3 button.</b> It allows you to start the pilot valve set-up.
F4	<b>F4 button.</b> It interrupts the pilot valve set-up. The button only appears after the process has been started.
F5	<b>F5 button.</b> It allows you to save the results of the pilot valve set-up. If the results are not saved, they will be lost when switching off and restarting the vehicle electronics.

Continued →

Continued →

Pos.	Description				
1	<p>After starting the process, the line indicates which stage of the process is in progress:</p> <ul style="list-style-type: none"> <li>• <b>Phase 1/2 - PMin:</b> the control system searches for the minimum working pressure of the pilot valve and identifies the "DIGIT" parameter and the electrical current to be supplied to the motorization pump corresponding to the minimum pressure condition.</li> <li>• <b>Phase 2/2 - PMax:</b> the system performs the same operations as above, but seeking the maximum working pressure of the pilot valve.</li> </ul> <p> <b>NOTE</b> Once the process has started, the light is coloured:</p> <p style="text-align: center;"> → </p>				
2	<p>The values in the two boxes change in real time during the set-up process and indicate:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 15%;"><b>Pdst</b></td> <td>The pressure the control system sets on the pilot valve when searching for the minimum and maximum value [bar].</td> </tr> <tr> <td><b>DIGIT</b></td> <td>Control system parameter corresponding to the pressure indicated in "Pdst".</td> </tr> </table>	<b>Pdst</b>	The pressure the control system sets on the pilot valve when searching for the minimum and maximum value [bar].	<b>DIGIT</b>	Control system parameter corresponding to the pressure indicated in "Pdst".
<b>Pdst</b>	The pressure the control system sets on the pilot valve when searching for the minimum and maximum value [bar].				
<b>DIGIT</b>	Control system parameter corresponding to the pressure indicated in "Pdst".				
3	<p><b>Result.</b> The results of the two steps of the set-up process are shown in the two boxes:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 15%;"><b>RfMin</b></td> <td>The "DIGIT" parameter identified during the first step of the process is shown in this box.</td> </tr> <tr> <td><b>DIGIT</b></td> <td>The "DIGIT" parameter identified during the second step of the process is reported here.</td> </tr> </table>	<b>RfMin</b>	The "DIGIT" parameter identified during the first step of the process is shown in this box.	<b>DIGIT</b>	The "DIGIT" parameter identified during the second step of the process is reported here.
<b>RfMin</b>	The "DIGIT" parameter identified during the first step of the process is shown in this box.				
<b>DIGIT</b>	The "DIGIT" parameter identified during the second step of the process is reported here.				
4	<p><b>Pump parameters.</b> The window lists some parameters related to the motorization pump.</p>				
5	<p><b>Date and time.</b> Tap on the box to return to the home screen.</p>				

## 4.8. ELS VALVE SET-UP SCREEN

### Opening the page

The page allows you to change the reference values of the working pressures of the ELS valve (the valve that regulates the pressures of the hydraulic lifting and steering circuit).  
To access the page, press the keys from the home screen:  
**F2 → Password → Enter → Login → Date&time → F4 → F3 → F4.**

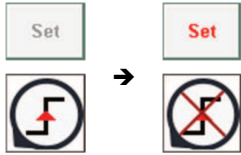

The screenshot shows the 'SETUP ELS' screen with the following elements:

- 1**: Table header with columns: Description, Value, Set, -, +, Save.
- 2**: The 'Value' column containing 250, 200, 300, and 350.
- 3**: The 'Set' column containing 'Set' for each row.
- 4**: The '-' and '+' columns for adjusting values.
- 5**: The 'Save' column containing 'SAVE' for the first row.
- 6**: An 'INFO' box showing 'ELS [bar]: \*\*\*\*\*'.
- 7**: The bottom status bar showing 'MSPE\_ECO1000 1.0.1' and various icons.

Pos.	Description
F1	<b>F1 button.</b> Press the button to select the rows in the "Setup ELS" table.
F2	<b>F2 and F3 buttons.</b> See line (4) of this table.
F3	
F4	<b>F4 button.</b> See line (3) of this table.
F5	<b>F5 button.</b> See line (5) of this table.
1	<b>Description.</b> The boxes show the standard reference values of the ELS valve working pressures. The reference value for standby pressure is 250 bar.
2	<b>Value.</b> The column shows the actual working pressure values of the ELS valve.  <b>NOTE</b> <i>If, when starting the machine and trying to steer the suspension or raise/lower the vehicle, the engine tends to turn off. It may be helpful to increase the standby pressure value.</i>

Continued →

Continued →

Pos.	Description
3	<p><b>Set.</b></p> <p>If a reference value is changed and the “Set” button of the corresponding line is pressed, the inscription inside the button turns red and the change is temporarily stored until the machine is switched off.</p> <p>If the button is pressed again, the text returns to grey and the change is ignored.</p> <p>If the vehicle is switched off and restarted, the reference value reverts to the value before the change. To permanently apply a change, it must be saved with the “Save” button.</p> <p>It is possible to use the <b>F4</b> button as an alternative to the “Set” button: when pressed, the button is crossed out.</p> <div style="text-align: center;">  </div> <p> <b>NOTE</b>  <i>The button is useful for testing whether changing one or more reference values improves vehicle operation. If the outcome is positive, simply access the page again and press the “Save” button to permanently apply the changes; if the outcome is negative, simply press the “Set” button again (depending on the changes made) or switch off and restart the machine to return to the previous condition.</i></p>
4	<p><b>+/- buttons.</b></p> <p>The buttons allow the reference values of the working pressures to be changed:</p> <ul style="list-style-type: none"> <li>• Press “+” to increase the reference value by 10 bar.</li> <li>• Press “-” to decrease the reference value by 10 bar.</li> </ul> <p>The changes are visible in the “Value” column.  Alternatively, use the <b>F2</b> and <b>F3</b> buttons respectively.</p>
5	<p><b>Save.</b></p> <p>Press the button to permanently apply the working pressure reference value change shown on the corresponding line (see also line (3) of this table).  Alternatively, use the <b>F5</b> button.</p>
6	<p><b>Info.</b></p> <p>The box shows the pressure in [bar] currently measured at the ELS valve.</p>
7	<p><b>Date and time.</b></p> <p>Tap on the box to return to the home screen.</p>

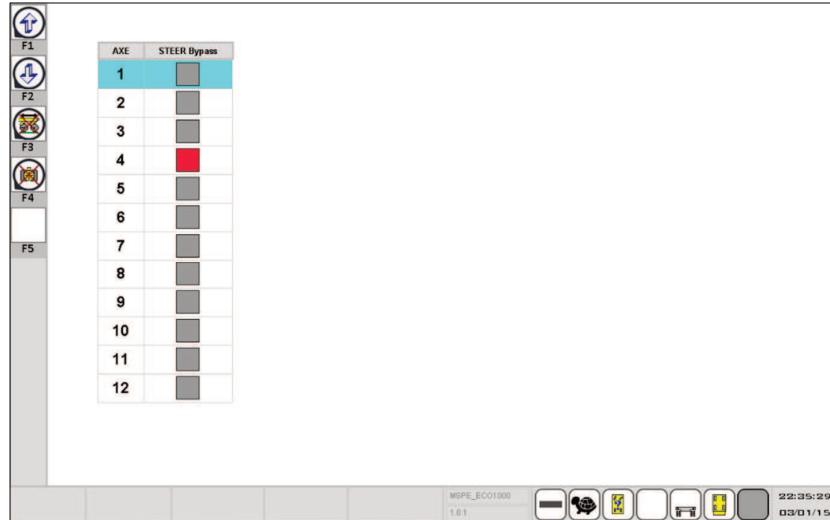
## 4.9. STEERING BYPASS SCREEN

### Opening the page

In order to bypass one or more suspensions in the steering program, open the page.  
From the start screen press:

**F2 → Password → Enter → Login → Date&time → F4 → F3 → F5.**

INDICATIVE FIGURE



**NOTE**

More information and the bypass operating procedure can be found in paragraph 9.7.



To return to the start screen, tap on the date and time box.

## 4.10. OTHER SCREENS

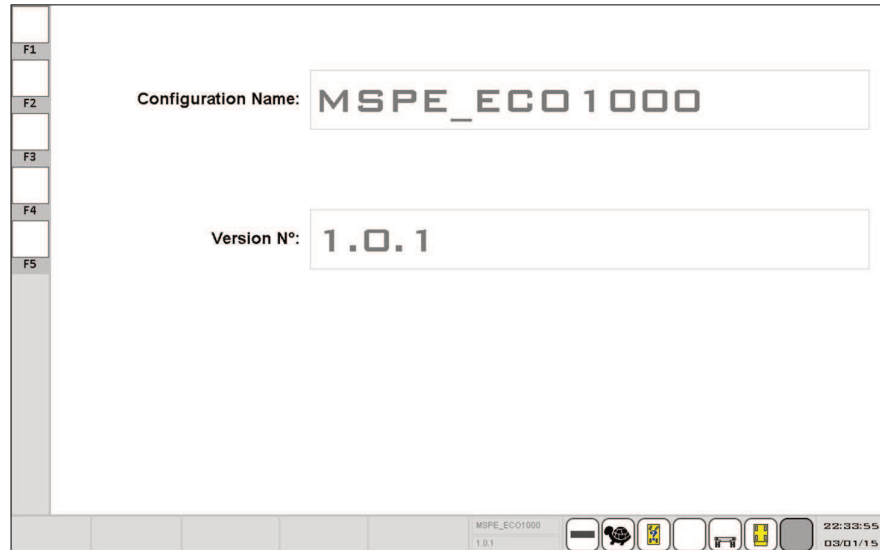
### 4.10.1 Software information screen

#### Opening the page

To open the page, from the start screen press:  
F2 → Password → Enter → Login → Date&time → F4 → F5 → F1.

#### Description

The page shows name and version of the software installed on the vehicle.

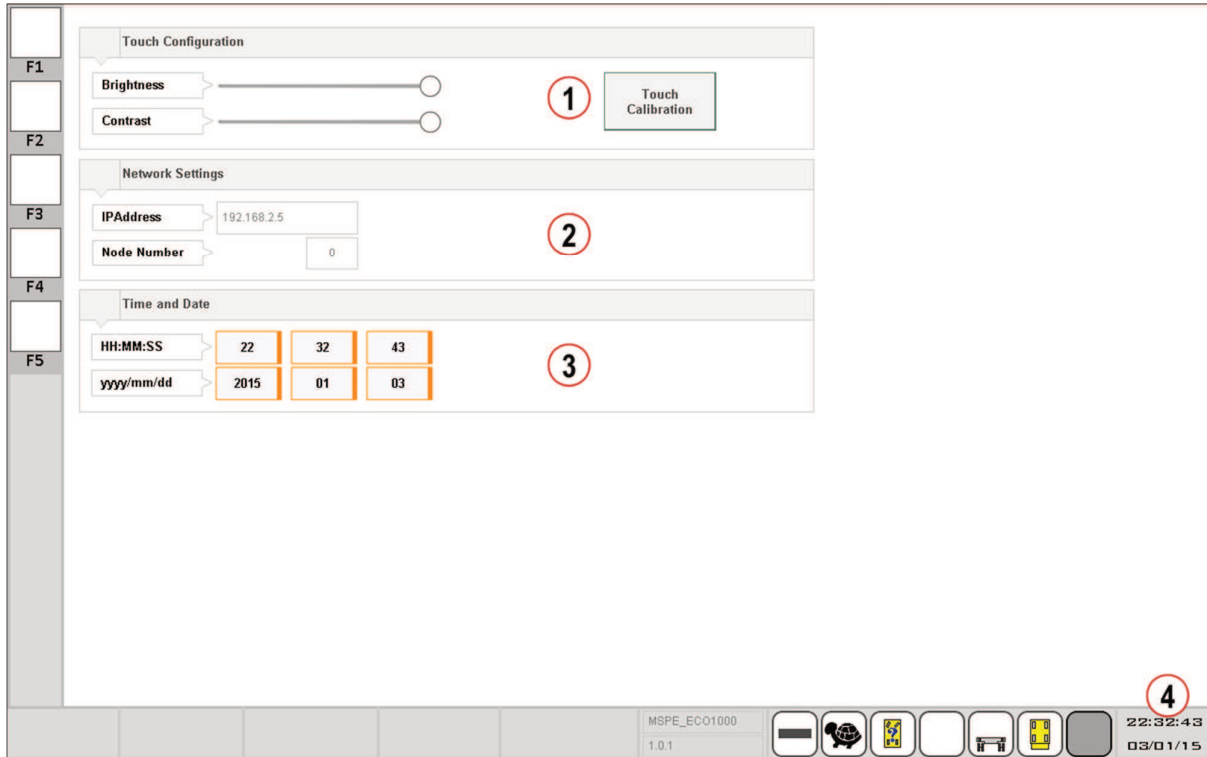


To return to the start screen, tap on the date and time box.

## 4.10.2 Display settings screen

### Opening the page

To open the page, from the start screen press:  
F2 → Password → Enter → Login → Date&time → F4 → F5 → F5.



Pos.	Description						
1	<p><b>Touch Configuration.</b> To change the screen settings:</p> <table border="1"> <tr> <td><b>Brightness</b></td> <td>Press and drag the slider to increase/decrease the brightness.</td> </tr> <tr> <td><b>Contrast</b></td> <td>Press and drag the slider to increase/decrease the contrast.</td> </tr> <tr> <td><b>Touch calibration</b></td> <td>Press the button to calibrate the touch screen.</td> </tr> </table>	<b>Brightness</b>	Press and drag the slider to increase/decrease the brightness.	<b>Contrast</b>	Press and drag the slider to increase/decrease the contrast.	<b>Touch calibration</b>	Press the button to calibrate the touch screen.
<b>Brightness</b>	Press and drag the slider to increase/decrease the brightness.						
<b>Contrast</b>	Press and drag the slider to increase/decrease the contrast.						
<b>Touch calibration</b>	Press the button to calibrate the touch screen.						
2	<p><b>Network Settings.</b> Read-only field.</p>						
3	<p><b>Time and Date.</b> Tap on this field; the system will display a numeric keypad that can be used to edit and confirm the date and time.</p>						
4	<p><b>Date and time.</b> Tap on the box to return to the start screen.</p>						

## 4.11. ICONS














### NOTE

Below is a list of all the error/fault and notification/warning icons that may be displayed on the [EB1] panel. Some of these icons may also be displayed on the radio control, on the dedicated screen → see chapter 5.



### 4.11.1 Error/fault icons

Icon	Description
	<b>Braking system failure.</b>  <b>WARNING</b> The vehicle may NOT BRAKE! Check the braking system immediately.
	<b>Low braking system pressure.</b>
	<b>Parking brake engaged.</b> The icon may remain on screen even after releasing the parking brake if the pressure needed to release the brake is low.
	<b>Inconsistency between the speed of the engine and the operation of the throttle (joystick).</b>
	<b>Diesel engine error/fault.</b> The error/fault code is displayed on the Diesel engine diagnostics screen. The list of fault/error codes and their description can be found in the attached Diesel engine manual. 
	<b>Communication error between the Diesel engine control unit and the X90 control unit of the vehicle.</b>
	 <b>ATTENTION</b> <i>To avoid damage to the Diesel engine it is recommended to turn off the latter as soon as the icon turns on.</i>  Check the level of coolant and, if necessary, top up → for specific information, please see the Diesel engine manual. 
	 <b>ATTENTION</b> <i>To avoid damage to the Diesel engine it is recommended to turn off the latter as soon as the icon turns on.</i>  Check the engine cooling system.   <b>NOTE</b> <i>If, after restarting the engine, the error persists, contact a specialised workshop.</i>
	<b>Steering fault.</b> The icon lights up when there is a steering fault on the fifth wheel groups.   <b>ATTENTION</b> <b>Stop the vehicle and check the steering system.</b>

Continued →

Continued "Error/fault icons" →

Icon	Description
	<p><b>Steering error.</b> This icon lights up while steering if one or more suspensions fail to reach their correct position.</p> <p> <b>ATTENTION</b> <i>Stop the vehicle and check the steering system.</i></p>
	<p><b>Steering potentiometer fault.</b> The icon lights up when there is an error on one or more steering potentiometers.</p> <p> <b>ATTENTION</b> <i>Stop the vehicle and check the steering system.</i></p> <p>Identify the faulty potentiometer on the [ACTIVE ALARMS] page. Check the electrical connections and, if necessary, replace the potentiometer – see paragraph 9.6. </p>
	<p><b>SCR clogged.</b> <sup>(1)</sup> The selective catalytic reduction system is clogged and is not working.</p> <p> <b>ATTENTION</b> <i>If the catalyst of the SCR system is clogged, replace it → refer to the instructions in the Diesel engine manual.</i> </p>
	<p><b>Low engine oil level.</b></p> <p> <b>ATTENTION</b> <i>To avoid damage to the Diesel engine it is recommended to turn off the latter as soon as the icon turns on.</i></p> <p>Check the level of engine oil and, if necessary, top up → for specific information, please see the Diesel engine manual. </p> <p> <b>NOTE</b> <i>If, after restarting the engine, the error persists, contact a specialised workshop.</i></p>
	<p><b>High engine oil temperature.</b></p> <p> <b>ATTENTION</b> <i>To avoid damage to the Diesel engine it is recommended to turn off the latter as soon as the icon turns on.</i></p> <p> <b>NOTE</b> <i>If, after restarting the engine, the error persists, contact a specialised workshop.</i></p>
	<p><b>Low engine oil pressure.</b> The presence of the icon is normal if the motor is turned off or in the first seconds after ignition; otherwise:</p> <ol style="list-style-type: none"> <li>1) Stop the vehicle.</li> <li>2) Turn off the diesel engine.</li> <li>3) Check the level of engine oil and, if necessary, top up → for specific information, please see the Diesel engine manual. </li> </ol> <p> <b>ATTENTION</b> <i>If the icon blinks even when the level of engine oil is correct, please request the intervention of qualified staff.</i></p> <ul style="list-style-type: none"> <li>• <b>Do not proceed on your own.</b></li> <li>• <b>Do not operate the engine, not even slightly.</b></li> </ul> <p> <b>NOTE</b> <i>The oil pressure warning is not an indication of the oil level. The oil level must be checked at regular intervals → for specific information, please see the Diesel engine manual.</i> </p>

<sup>(1)</sup> = the SCR system (see paragraph 1.13.6) is available only on some of the Diesel engine equipped vehicles.



Continued →

Continued →

Icon	Description
	<p><b>Diesel engine air filter clogged.</b></p> <p> <b>ATTENTION</b>  <i>The air filter must be cleaned → for specific information, please see the Diesel engine manual.</i> </p>
	<p><b>Overload.</b>  The system indicates that there is a danger of overload if one or more hydraulic points have exceeded the rated load for a period of time long enough to dismiss false alarms due to road surface roughness.</p> <p> <b>NOTE</b>  <i>The overload warning does not stop the system; it is intended to draw the attention of the operator on the fact that there is a risk of damage to the vehicle.</i></p>
	<p><b>Overturning hazard.</b>  When the centre of gravity of the load is close to the edge of the indicator (see the figure below), the program warns the operator that the vehicle may overturn.</p> <p></p> <p> <b>ATTENTION</b>  <i>The danger of overturning is due to a significant difference in pressure between the hydraulic points. <u>Balance the pressure values as soon as possible to restore the centre of gravity of the load as far as possible to the centre of the indicator.</u></i></p>
	<p><b>Lifting system error.</b>  The error occurs when the difference in height, between the highest point and the lowest point of the vehicle, exceeds 60 mm. A point is intended as the height detected on the external suspension equipped with a potentiometer.</p>
	<p><b>Inclinometer fault.</b>  The icon turns on when there is an inclinometer fault.</p>
	<p><b>DPF clogged.</b> <sup>(1)</sup>  This icon is displayed when the particulate filter of the Diesel engine (DPF) is clogged. Perform a regeneration cycle.</p> <p> <b>NOTE</b>  <i>Depending on the level of clogging of the filter, regeneration can either be performed automatically or manually – see paragraph 13.6.</i> </p>
	<p><b>DPF regeneration underway.</b>  This icon is displayed when the Diesel engine particulate filter (DPF) regeneration is being performed.</p> <p> <b>NOTE</b>  <i>Depending on the level of clogging of the filter, regeneration can either be performed automatically or manually – see paragraph 13.6.</i> </p>
	<p><b>DPF regeneration enabled.</b>  This icon indicates that the manual regeneration of the Diesel engine particulate filter (DPF) is enabled.</p>
	<p><b>High exhaust temperature.</b>  It is normal for the icon to be on during any manual Diesel engine particulate filter (DPF) regeneration cycle.</p>
	<p><b>DPF fault.</b></p> <p> <b>NOTE</b>  <i>Refer to the Diesel engine manual.</i> </p>

<sup>(1)</sup> = for vehicles with Perkins engines only.

Continued →












Continued "Error/fault icons" →

Icon	Description
	<b>Limited engine speed.</b> This icon indicates that the Diesel engine speed is limited due to a particulate filter (DPF) malfunction.
	<b>Motor pump fault.</b>
	<b>Lifting and steering pump fault.</b>
	<p><b>Lifting potentiometer fault.</b> The icon lights up when there is an error on one or more lifting potentiometers.</p> <p> <b>ATTENTION</b> <i>Stop the vehicle and check the lifting system.</i></p> <p>Identify the faulty potentiometer on the [ACTIVE ALARMS] page. Check the electrical connections and, if necessary, replace the potentiometer – see paragraph 10.9. </p>
	<p><b>Battery error.</b> <sup>(1)</sup> The icon lights up when there is an error/fault on the battery pack.</p>
	<p><b>Oil filter clogged – Motorization system filter.</b> If the icon is present on the display, even with a normal hydraulic oil temperature, you must replace the filter cartridge → please see chapter 13. </p>
	<p><b>Oil filter clogged – Tank oil return filter.</b> If the icon is present on the display, even with a normal hydraulic oil temperature, you must replace the filter cartridge → please see chapter 13. </p>
	<p><b>Oil filter clogged – Hydraulic pump intake filter.</b> If the icon is present on the display, even with a normal hydraulic oil temperature, you must replace the filter cartridge → please see chapter 13. </p>
	<p><b>Oil filter clogged – Lifting/steering pump filter.</b> If the icon is present on the display, even with a normal hydraulic oil temperature, you must replace the filter cartridge → please see chapter 13. </p>
	<p><b>Vehicle fault/error.</b></p> <p> <b>NOTE</b> <i>The specific description of this fault/error, indicated by the icon , can be found on the [ACTIVE ALARMS] page → see paragraph 4.3.6. </i></p>
	<p><b>Low hydraulic oil temperature.</b></p> <p> <b>ATTENTION</b> <i>Keep the engine idling until the hydraulic oil reaches the correct operating temperature → the icon disappears.</i></p>
	<p><b>High hydraulic oil temperature.</b> This icon is displayed when the hydraulic oil temperature reaches or exceeds 90°C.</p> <p> <b>ATTENTION</b> <i>To avoid any vehicle damage, put it in safe mode and stop it as soon as possible</i></p>

<sup>(1)</sup> = electric and hybrid vehicles only.

Continued →

Continued →

Icon	Description
	<b>Cooling unit error.</b> The icon lights up when there is an error/fault on the hydraulic oil cooling system.
	<b>Phonic wheel pick-up fault.</b>  <i>NOTE</i> <i>Phonic wheels are used to detect any inconsistencies between the rotation of the motorized wheels and the rotation of the towed wheels (e.g. in case of drive wheel slippage).</i>
	<b>Electronic board fault.</b> The electronic boards are located inside the [EB1] panel.
	<b>Keyboard error.</b> The icon lights up when there's an error on the keyboards or on their connection to the PC.
	<b>Low hydraulic oil level.</b>   <b>ATTENTION</b> <i>Top up the oil.</i>
	<b>Alternator failure.</b> The icon indicates that the alternator is not charging the batteries. The presence of the icon is normal if the motor is turned off or in the first seconds after ignition.
	<b>[EB2] cabinet open.</b> This icon indicates that the door of the [EB2] cabinet is open (where applicable).
	<b>Uncovered [XPEO] socket.</b>   <b>ATTENTION</b> <i>The [XPEO] connector is used only in case of emergency, to start the Diesel engine → see paragraph 8.1.3.</i> <i>Otherwise, the connector <u>must always be covered</u> with its cap.</i> 

**NOTE**














The error/fault type is displayed on the [ACTIVE ALARMS] screen → see paragraph 4.3.9.


**ATTENTION**

The danger is not indicated only by the icon but also by the buzzer installed on the vehicle (light and acoustic signals). In particular, the buzzer starts in case of:

- **Low coolant level.**
- **Low hydraulic oil level.**
- **Steering fault.**
- **Braking system failure.**
- **Lifting/lowering fault.**
- **Overload.**
- **Overturning.**

### 4.11.2 Notification/warning icons

Icon	Description
	<b>Work lights on.</b>
	<b>Level of clogging.</b> The number and colour of the field indicate the level of clogging of the Diesel engine particulate filter (DPF). Depending on the clogging level, the field shows the time left to DPF regeneration end. For more information → see paragraph 13.6. 
	<b>Low fuel level.</b>  <b>ATTENTION</b> <i>Refill the tank.</i>
	<b>Low AdBlue® additive level. <sup>(1)</sup></b>  <b>ATTENTION</b> <i>Refill the tank → for specific information, please see the Diesel engine manual.</i> 
	<b>Diesel engine preheating system running.</b>
	<b>Diesel Engine ON.</b>
	<b>Diesel Engine OFF.</b>
	<b>DC / DC converter fault. <sup>(2)</sup></b>
	<b>Emergency stop activated.</b> This icon indicates that a vehicle emergency stop button has been pressed. The radio control display shows which emergency button has been pressed.
<b>ASR</b>	<b>ASR engaged. <sup>(3)</sup></b> This icon indicates that the anti-slip regulation system (ASR) is engaged.
	<b>Battery unit operational. <sup>(3) (4)</sup></b> On convoy set-ups, the icon identifies the ECO1000 vehicle to which the battery packs used to supply the convoy belong.
	<b>Battery charging. <sup>(3)</sup></b> The icons indicate if any of the batteries is currently being charged: <ul style="list-style-type: none"> <li>• <b>ON:</b> charging enabled and in progress.</li> <li>• <b>OFF:</b> charging disabled and not in progress.</li> </ul>
	
	<b>Electric motor fault. <sup>(3)</sup></b>
	<b>Electric motor inverter fault. <sup>(3)</sup></b>

<sup>(1)</sup> = the SCR system (see paragraph 1.13.6) is available only on vehicles equipped with at least 85 kW maximum power Diesel motors. 









<sup>(2)</sup> = for electric and hybrid vehicles only, or for vehicles with Perkins engines.

<sup>(3)</sup> = for electric and hybrid vehicles only.

<sup>(4)</sup> = where applicable.

Continued →

Continued →

Icon	Description
	<b>Point-to-point lifting.</b> This icon indicates that the point-to-point lifting of the loading platform has been selected from the radio control.
	<b>Lifting/lowering limit bypass enabled.</b> This icon is displayed together with the one shown below.
	<b>Lifting/lowering limit bypass and travel mode change.</b> This icon indicates that the transmitter  (BYPASS) button has been operated.
	<b>Audio OFF.</b> This icon shows up when vehicle's sound alarms are silenced. For the switch-off procedure of the acoustic devices, refer to paragraph 5.5. 
	<b>Disabled steering.</b> The icon is displayed when at least one suspension is bypassed in the steering program. For more information, see paragraph 9.6. 

**ATTENTION**

*The danger is not indicated only by the icon but also by the buzzer installed on the vehicle (light and acoustic signals). In particular, the buzzer starts in case of:*

- *Low coolant level.*
- *Low hydraulic oil level.*
- *Steering fault.*
- *Braking system failure.*
- *Lifting/lowering fault.*
- *Overload.*
- *Overturning.*

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