

**CPC****COOPERATIVE PATENT CLASSIFICATION****B60L****ELECTRIC EQUIPMENT OR PROPULSION OF ELECTRICALLY-PROPELLED VEHICLES; MAGNETIC SUSPENSION OR LEVITATION FOR VEHICLES; ELECTRODYNAMIC BRAKE SYSTEMS FOR VEHICLES, IN GENERAL**

(electric coupling devices combined with mechanical couplings of vehicles [B60D 1/62](#); electric heating for vehicles [B60H](#); transmitting drive from electric motors to ultimate propulsive elements in vehicles [B60K](#); disposition of electric propulsion equipment, other than current collectors, in vehicles [B60K](#); auxiliary generator drives on vehicles [B60K](#); lighting for vehicles [B60Q](#); vehicle brake control systems in general [B60T](#); preventing wheel slip by reducing power in rail vehicles [B61C](#); railway track circuits in general [B61L](#); lighting in general [F21](#); [H05B](#); switches in general [H01H](#); coupling devices for electric connections in general [H01R](#); dynamo-electric machines [H02K](#); electric converters [H02M](#); starting, controlling, braking of electric machines or converters in general [H02P](#); electric heating in general [H05B](#))

**NOTE**

This subclass, subject to the above references, covers:  
feeding of power to auxiliary circuits;

current collectors; arrangements thereof on rail or road vehicles or on vehicles in general

electrodynamic brake systems;

electric propulsion of vehicles; control and regulation therefor

In this subclass it is desirable to classify any "additional information" which is of interest for search.

**B60L 1/00**

**Supplying electric power to auxiliary equipment of vehicles** (circuit arrangements for charging batteries [H02J 7/00](#))

**B60L 1/003**

. {to auxiliary motors, e.g. for pumps, compressors}

**B60L 1/006**

. {to power outlets}

**B60L 1/02**

. to electric heating circuits

**B60L 1/04**

.. fed by the power supply line

**B60L 1/06**

... using only one supply

**B60L 1/08**

.... Methods and devices for control or regulation

**B60L 1/10**

... with provision for using different supplies

**B60L 1/12**

.... Methods and devices for control or regulation

**B60L 1/14**

. to electric lighting circuits

**B60L 1/16**

.. fed by the power supply line

**B60L 1/20**

. {Energy regeneration from auxiliary equipment}

<b>B60L 3/00</b>	<b>Electric devices on electrically-propelled vehicles for safety purposes; Monitoring operating variables, e.g. speed, deceleration, power consumption (measuring in general <a href="#">G01</a>)</b>
B60L 3/0007	. {Measures or means for preventing or attenuating collisions}
B60L 3/0015	.. {Prevention of collisions}
B60L 3/0023	. {Detecting, eliminating, remedying or compensating for drive train abnormalities, e.g. failures within the drive train}
B60L 3/003	.. {relating to inverters}
B60L 3/0038	.. {relating to sensors}
B60L 3/0046	.. {relating to electric energy storage systems, e.g. batteries or capacitors}
B60L 3/0053	.. {relating to fuel cells}
B60L 3/0061	.. {relating to electrical machines}
B60L 3/0069	.. {relating to the isolation, e.g. ground fault or leak current}
B60L 3/0076	.. {relating to braking}
B60L 3/0084	.. {relating to control modules}
B60L 3/0092	. {with use of redundant elements for safety purposes}
B60L 3/02	. Dead-man`s devices
B60L 3/04	. Cutting off the power supply under fault conditions ( <a href="#">protective devices and circuit arrangements in general H01H; H02H</a> )
B60L 3/06	. Limiting the traction current under mechanical overload conditions
B60L 3/08	. Means for preventing excessive speed of the vehicle
B60L 3/10	. Indicating wheel slip; { <a href="#">Correction of wheel slip</a> }
B60L 3/102	.. {of individual wheels}
B60L 3/104	.. {by indirect measurement of vehicle speed}
B60L 3/106	.. {for maintaining or recovering the adhesion of the drive wheels}
B60L 3/108	... {whilst braking , i.e. ABS}
B60L 3/12	. Recording operating variables; { <a href="#">Monitoring of operating variables</a> }
<b>B60L 5/00</b>	<b>Current collectors for power supply lines of electrically-propelled vehicles (current collectors in general <a href="#">H01R 41/00</a>)</b>
B60L 5/005	. {without mechanical contact between the collector and the power supply line}
B60L 5/02	. with ice-removing device
B60L 5/04	. using rollers or sliding shoes in contact with trolley wire ( <a href="#">B60L 5/40 takes precedence</a> )
B60L 5/045	.. {with trolley wire finders}
B60L 5/06	.. Structure of the rollers or their carrying means
B60L 5/08	.. Structure of the sliding shoes or their carrying means
B60L 5/085	... {with carbon contact members}
B60L 5/10	.. Devices preventing the collector from jumping off
B60L 5/12	.. Structural features of poles or their bases
B60L 5/14	... Devices for automatic lowering of a jumped-off collector
B60L 5/16	... Devices for lifting and resetting the collector ( <a href="#">B60L 5/34 takes precedence</a> )

- B60L 5/18 . using bow-type collectors in contact with trolley wire
- B60L 5/19 . . using arrangements for effecting collector movement transverse to the direction of vehicle motion
- B60L 5/20 . . Details of contact bow
- B60L 5/205 . . . {with carbon contact members}
- B60L 5/22 . . Supporting means for the contact bow
- B60L 5/24 . . . Pantographs
- B60L 5/26 . . . Half pantographs, e.g. using counter rocking beams
- B60L 5/28 . . . Devices for lifting and resetting the collector
- B60L 5/30 . . . . using springs
- B60L 5/32 . . . . using fluid pressure
- B60L 5/34 . with devices to enable one vehicle to pass another one using the same power supply line
- B60L 5/36 . with means for collecting current simultaneously from more than one conductor, e.g. from more than one phase
- B60L 5/38 . for collecting current from conductor rails ([B60L 5/40 takes precedence](#))
- B60L 5/39 . . from third rail
- B60L 5/40 . for collecting current from lines in slotted conduits
- B60L 5/42 . for collecting current from individual contact pieces connected to the power supply line

## **B60L 7/00**

### **Electrodynamic brake systems for vehicles in general**

- B60L 7/003 . {Dynamic electric braking by short circuiting the motor}
- B60L 7/006 . {Dynamic electric braking by reversing current, i.e. plugging}
- B60L 7/02 . Dynamic electric resistor braking ([B60L 7/22 takes precedence](#))
- B60L 7/04 . . for vehicles propelled by dc motors
- B60L 7/06 . . for vehicles propelled by ac motors
- B60L 7/08 . . Controlling the braking effect ([B60L 7/04](#), [B60L 7/06 take precedence](#))
- B60L 7/10 . Dynamic electric regenerative braking ([B60L 7/22 takes precedence](#))
- B60L 7/12 . . for vehicles propelled by dc motors
- B60L 7/14 . . for vehicles propelled by ac motors
- B60L 7/16 . . for vehicles comprising converters between the power source and the motor
- B60L 7/18 . . Controlling the braking effect ([B60L 7/12](#), [B60L 7/14](#), [B60L 7/16 take precedence](#))
- B60L 7/20 . Braking by supplying regenerated power to the prime mover of vehicles comprising engine-driven generators
- B60L 7/22 . Dynamic electric resistor braking, combined with dynamic electric regenerative braking
- B60L 7/24 . with additional mechanical or electromagnetic braking
- B60L 7/26 . . Controlling the braking effect
- B60L 7/28 . Eddy-current braking

## **B60L 8/00**

### **Electric propulsion with power supply from force of nature, e.g. sun, wind**

- B60L 8/003 . {Converting light into electric energy, e.g. by using photo-voltaic systems}
- B60L 8/006 . {Converting flow of air into electric energy, e.g. by using wind turbines}

**B60L 9/00**      **Electric propulsion with power supply external to vehicle** ([B60L 8/00](#),  
[B60L 13/00](#) take precedence)

- B60L 9/005      . {Interference suppression}
- B60L 9/02      . using dc motors
- B60L 9/04      . . fed from dc supply lines
- B60L 9/06      . . . with conversion by metadyne
- B60L 9/08      . . fed from ac supply lines
- B60L 9/10      . . . with rotary converters
- B60L 9/12      . . . with static converters
- B60L 9/14      . . fed from different kinds of power-supply lines
- B60L 9/16      . using ac induction motors
- B60L 9/18      . . fed from dc supply lines
- B60L 9/20      . . . single-phase motors
- B60L 9/22      . . . polyphase motors
- B60L 9/24      . . fed from ac supply lines
- B60L 9/26      . . . single-phase motors
- B60L 9/28      . . . polyphase motors
- B60L 9/30      . . fed from different kinds of power-supply lines
- B60L 9/32      . using ac brush displacement motors

**B60L 11/00**      **Electric propulsion with power supplied within the vehicle** ([B60L 8/00](#),  
[B60L 13/00](#) take precedence; arrangements or mounting of plural diverse prime-  
movers for mutual or common propulsion [B60K 6/20](#) ; control systems specially  
adapted for hybrid vehicles [B60W 20/00](#))

- B60L 11/002      . {using electric power supply other than engine driven generators, electrical or fuel-  
cells}
- B60L 11/005      . . {using capacitors}
- B60L 11/007      . . {using auxiliary power supplied by humans}
- B60L 11/02      . using engine-driven generators
- B60L 11/04      . . using dc generators and motors
- B60L 11/06      . . using ac generators and dc motors
- B60L 11/08      . . using ac generators and motors
- B60L 11/10      . . using dc generators and ac motors
- B60L 11/12      . . with additional electric power supply, e.g. accumulator
- B60L 11/123      . . . {using range extenders, e. g. series hybrid vehicles}
- B60L 11/126      . . . . {the range extender having low power output with respect to maximum  
power output of the vehicle}
- B60L 11/14      . . with provision for direct mechanical propulsion
- B60L 11/16      . using power stored mechanically, e.g. in fly-wheel
- B60L 11/18      . using power supply from primary cells, secondary cells, or fuel cells
- B60L 11/1801      . . {combined with an external power supply}

B60L 11/1803	..	{for vehicles propelled by ac-motors}
B60L 11/1805	..	{for vehicles propelled by dc-motors}
B60L 11/1807	..	{for vehicles propelled by position controlled motors}
B60L 11/1809	..	{Charging electric vehicles}
B60L 11/1811	...	{using converters}
B60L 11/1812	....	{Physical arrangements or structures of charging converters specially adapted for charging electric vehicles}
B60L 11/1814	....	{the vehicle's propulsion converter is used for charging}
B60L 11/1816	...	{by conductive energy transfer, e.g. connectors}
B60L 11/1818	....	{Adaptations of plugs or sockets for charging electric vehicles}
B60L 11/182	...	{by inductive energy transfer}
B60L 11/1822	...	{by exchange of energy storage elements, e.g. removable batteries}
B60L 11/1824	...	{Details of charging stations, e.g. vehicle recognition or billing ( <a href="#">B60L 11/1811</a> , <a href="#">B60L 11/182</a> , <a href="#">B60L 11/1822</a> take precedence)}
B60L 11/1825	....	{Charging columns for electric vehicles}
B60L 11/1827	....	{Automatic adjustment of relative position between charging device and vehicle}
B60L 11/1829	.....	{for inductive energy transfer}
B60L 11/1831	.....	{with position related activation of primary coils}
B60L 11/1833	.....	{the vehicle being positioned}
B60L 11/1835	.....	{with optical position determination, e.g. by a camera}
B60L 11/1837	....	{by charging in short intervals along the itinerary, e.g. during short stops}
B60L 11/1838	....	{Methods for the transfer of electrical energy or data between charging station and vehicle }
B60L 11/184	.....	{Optimising energy costs, e.g. by charging depending on electricity rates}
B60L 11/1842	.....	{Energy stored in the vehicle is provided to the network, i.e. vehicle to grid (V2G) arrangements}
B60L 11/1844	.....	{the charging being dependent on network capabilities}
B60L 11/1846	.....	{Identification of the vehicle}
B60L 11/1848	.....	{Methods related to measuring, billing or payment}
B60L 11/185	.....	{Fast charging}
B60L 11/1851	..	{Battery monitoring or controlling; Arrangements of batteries, structures or switching circuits therefore}
B60L 11/1853	...	{by battery splitting}
B60L 11/1855	....	{by series/parallel switching}
B60L 11/1857	...	{Battery age determination}
B60L 11/1859	...	{Preventing deep discharging}
B60L 11/1861	...	{Monitoring or controlling state of charge (SOC)}
B60L 11/1862	....	{Target range for state of charge (SOC)}
B60L 11/1864	...	{Control of a battery packs, i.e. of a set of batteries with the same voltage}
B60L 11/1866	....	{Balancing the charge of multiple batteries or cells}
B60L 11/1868	...	{Controlling two or more batteries with different voltages}

B60L 11/187	...	{Battery temperature regulation}
B60L 11/1872	....	{by control of electric loads}
B60L 11/1874	....	{by cooling}
B60L 11/1875	....	{by heating}
B60L 11/1877	...	{Arrangements of batteries}
B60L 11/1879	...	{Adaptation of battery structures for electric vehicles}
B60L 11/1881	..	{Fuel cells monitoring or controlling; Arrangements of fuel cells, structures or switching circuits therefore}
B60L 11/1883	...	{Details of fuel cells}
B60L 11/1885	...	{Starting of fuel cells}
B60L 11/1887	...	{combined with battery control}
B60L 11/1888	...	{Fuel cell temperature regulation}
B60L 11/189	....	{by control of electric loads}
B60L 11/1892	....	{by cooling}
B60L 11/1894	....	{by heating}
B60L 11/1896	...	{Arrangements of the fuel cells}
B60L 11/1898	...	{Adaptation of fuel cell structures for electric vehicles}

**B60L 13/00**

**Electric propulsion for monorail vehicles, suspension vehicles or rack railways; Magnetic suspension or levitation for vehicles** ({tracks for Maglev-type trains [E01B 25/30](#);} electromagnets per se [H01F 7/06](#); linear motors per se [H02K 41/00](#))

B60L 13/003	.	{Crossings; Points}
B60L 13/006	.	{Electric propulsion adapted for monorail vehicles, suspension vehicles or rack railways ( <a href="#">B60L 13/03</a> takes precedence)}
B60L 13/03	.	Electric propulsion by linear motors
B60L 13/035	..	{Suspension of the vehicle-borne motorparts}
B60L 13/04	.	Magnetic suspension or levitation for vehicles
B60L 13/06	..	Means to sense or control vehicle position or attitude with respect to railway
B60L 13/08	...	for the lateral position
B60L 13/10	.	Combination of electric propulsion and magnetic suspension or levitation

**B60L 15/00**

**Methods, circuits, or devices for controlling the traction-motor speed of electrically-propelled vehicles**

B60L 15/002	.	{for control of propulsion for monorail vehicles, suspension vehicles or rack railways; for control of magnetic suspension or levitation for vehicles for propulsion purposes}
B60L 15/005	..	{for control of propulsion for vehicles propelled by linear motors}
B60L 15/007	.	{Physical arrangements or structures of drive train converters specially adapted for the propulsion motors of electric vehicles}
B60L 15/02	.	characterised by the form of the current used in the control circuit
B60L 15/025	..	{using field orientation; Vector control; Direct Torque Control (DTC)}
B60L 15/04	..	using dc
B60L 15/06	..	using substantially sinusoidal ac

B60L 15/08	.. using pulses
B60L 15/10	. for automatic control superimposed on human control to limit the acceleration of the vehicle, e.g. to prevent excessive motor current ( <a href="#">electric devices for safety purposes B60L 3/00</a> )
B60L 15/12	.. with circuits controlled by relays or contactors
B60L 15/14	.. with main controller driven by a servomotor ( <a href="#">B60L 15/18 takes precedence</a> )
B60L 15/16	.. with main controller driven through a ratchet mechanism ( <a href="#">B60L 15/18 takes precedence</a> )
B60L 15/18	.. without contact making and breaking, e.g. using a transducer
B60L 15/20	. for control of the vehicle or its driving motor to achieve a desired performance, e.g. speed, torque, programmed variation of speed
B60L 15/2009	.. {for braking }
B60L 15/2018	... {for braking on a slope}
B60L 15/2027	.... {whilst maintaining constant speed}
B60L 15/2036	.. {Electric differentials, e.g. for supporting steering of vehicles ( <a href="#">arrangement of control devices for differential gearing B60K 23/02</a> )}
B60L 15/2045	.. {for optimising the use of energy}
B60L 15/2054	.. {by controlling transmissions or clutches}
B60L 15/2063	.. {for creeping}
B60L 15/2072	.. {for drive off }
B60L 15/2081	... {for drive off on a slope}
B60L 15/209	.. {for overtaking}
B60L 15/22	.. with sequential operation of interdependent switches, e.g. relays, contactors, programme drum
B60L 15/24	.. with main controller driven by a servomotor ( <a href="#">B60L 15/28 takes precedence</a> )
B60L 15/26	.. with main controller driven through a ratchet mechanism ( <a href="#">B60L 15/28 takes precedence</a> )
B60L 15/28	.. without contact making and breaking, e.g. using a transducer
B60L 15/30	.. with means to change over to human control
B60L 15/32	. Control or regulation of multiple-unit electrically-propelled vehicles
B60L 15/34	.. with human control of a setting device
B60L 15/36	... with automatic control superimposed, e.g. to prevent excessive motor current
B60L 15/38	.. with automatic control
B60L 15/40	. Adaptation of control equipment on vehicle for remote actuation from a stationary place ( <a href="#">devices along the route for controlling devices on rail vehicles B61L 3/00; central rail-traffic control systems B61L 27/00</a> )
B60L 15/42	. Adaptation of control equipment on vehicle for actuation from alternative parts of the vehicle or from alternative vehicles of the same vehicle train ( <a href="#">B60L 15/32 takes precedence</a> )
<b>B60L 2200/00</b>	<b>Type of vehicles</b>
B60L 2200/10	. Air crafts
B60L 2200/12	. Bikes

B60L 2200/14	. Vehicles with one wheel only
B60L 2200/16	. Single-axle vehicles
B60L 2200/18	. Buses
B60L 2200/20	. Vehicles specially adapted for children, e.g. toy vehicles
B60L 2200/22	. Micro-cars, e.g. golf cars
B60L 2200/24	. Personal mobility vehicles
B60L 2200/26	. Rail vehicles
B60L 2200/28	. Trailers
B60L 2200/30	. Trolleys
B60L 2200/32	. Waterborne vessels
B60L 2200/34	. Wheel chairs
B60L 2200/36	. Vehicles designed to transport cargo, e.g. trucks
B60L 2200/40	. Working vehicles
B60L 2200/42	.. Fork lift trucks
B60L 2200/44	.. Industrial trucks or floor conveyers
B60L 2200/46	. Vehicles with auxiliary ad-on propulsions, e.g. add-on electric motor kits for bicycles

**B60L 2210/00****Converter types**

B60L 2210/10	. DC to DC converters
B60L 2210/12	.. Buck converters
B60L 2210/14	.. Boost converters
B60L 2210/20	. AC to AC converters
B60L 2210/22	.. without intermediate conversion to DC
B60L 2210/30	. AC to DC converters
B60L 2210/40	. DC to AC converters
B60L 2210/42	.. Voltage source inverters
B60L 2210/44	.. Current source inverters
B60L 2210/46	.. with more than three phases

**B60L 2220/00****Electrical machine types; Structures or applications thereof**

B60L 2220/10	. Electrical machine types
B60L 2220/12	.. Induction machines
B60L 2220/14	.. Synchronous machines
B60L 2220/16	.. DC brushless machines
B60L 2220/18	.. Reluctance machines
B60L 2220/20	.. DC electrical machines
B60L 2220/30	.. Universal machines
B60L 2220/40	. Electrical machine applications
B60L 2220/42	.. with use of more than one motor
B60L 2220/44	.. Wheel Hub motors, i.e. integrated in the wheel hub
B60L 2220/46	.. Wheel motors, i.e. motor connected to only one wheel



- B60L 2220/50 . . Structural details of electrical machines
- B60L 2220/52 . . . Clutch motors
- B60L 2220/54 . . . Windings for different functions
- B60L 2220/56 . . . with switched windings
- B60L 2220/58 . . . with more than three phases

**B60L 2230/00****Charging station details**

- B60L 2230/10 . . Parts thereof
- B60L 2230/12 . . . Connection cables
- B60L 2230/14 . . . Contact less plugs
- B60L 2230/16 . . . Communication interfaces
- B60L 2230/20 . . Power generation within charging stations
- B60L 2230/22 . . . by solar panels
- B60L 2230/24 . . . by wind generators
- B60L 2230/26 . . . by power stored mechanically, e.g. by fly wheel
- B60L 2230/28 . . . by fuel cells
- B60L 2230/30 . . . by batteries
- B60L 2230/32 . . . by capacitors
- B60L 2230/34 . . . Charging station being an island
- B60L 2230/40 . . Remote controls for charging stations

**B60L 2240/00****Control parameters of input or output; Target parameters**

- B60L 2240/10 . . Vehicle control parameters
- B60L 2240/12 . . . Speed
- B60L 2240/14 . . . Acceleration
- B60L 2240/16 . . . . longitudinal
- B60L 2240/18 . . . . lateral
- B60L 2240/20 . . . . angular
- B60L 2240/22 . . . Yaw angle
- B60L 2240/24 . . . Steering angle
- B60L 2240/26 . . . Vehicle weight
- B60L 2240/28 . . . Door position
- B60L 2240/30 . . . Parking brake position
- B60L 2240/32 . . . Driving direction
- B60L 2240/34 . . . Cabin temperature
- B60L 2240/36 . . . Temperature of vehicle components or parts
- B60L 2240/40 . . Drive Train control parameters
- B60L 2240/42 . . . related to electric machines
- B60L 2240/421 . . . . Speed
- B60L 2240/423 . . . . Torque
- B60L 2240/425 . . . . Temperature

B60L 2240/427	...	Voltage
B60L 2240/429	...	Current
B60L 2240/44	..	related to combustion engines
B60L 2240/441	...	Speed
B60L 2240/443	...	Torque
B60L 2240/445	...	Temperature
B60L 2240/46	..	related to wheels
B60L 2240/461	...	Speed
B60L 2240/463	...	Torque
B60L 2240/465	...	Slip
B60L 2240/48	..	related to transmissions
B60L 2240/485	...	Temperature
B60L 2240/486	...	Operating parameters
B60L 2240/50	..	related to clutches
B60L 2240/507	...	Operating parameters
B60L 2240/52	..	related to converters
B60L 2240/525	...	Temperature of converter or components thereof
B60L 2240/526	...	Operating parameters
B60L 2240/527	...	Voltage
B60L 2240/529	...	Current
B60L 2240/54	..	related to batteries
B60L 2240/545	...	Temperature
B60L 2240/547	...	Voltage
B60L 2240/549	...	Current
B60L 2240/60	.	Navigation input
B60L 2240/62	..	Vehicle position
B60L 2240/622	...	by satellite navigation
B60L 2240/625	...	by GSM
B60L 2240/627	...	by WLAN
B60L 2240/64	..	Road conditions
B60L 2240/642	...	Slope of road
B60L 2240/645	...	Type of road
B60L 2240/647	...	Surface situation of road, e.g. type of paving
B60L 2240/66	..	Ambient conditions
B60L 2240/662	...	Temperature
B60L 2240/665	...	Light intensity
B60L 2240/667	...	Precipitation
B60L 2240/68	..	Traffic data
B60L 2240/70	.	Interactions with external data bases e.g. traffic centres
B60L 2240/72	..	Charging station selection relying on external data

B60L 2240/80

- . Time limits

**B60L 2250/00****Driver interactions**

B60L 2250/10

- . by alarm

B60L 2250/12

- . by confirmation, e.g. of the input

B60L 2250/14

- . by input of vehicle departure time

B60L 2250/16

- . by display

B60L 2250/18

- . by enquiring driving style

B60L 2250/20

- . by driver identification

B60L 2250/22

- . by presence detection

B60L 2250/24

- . by lever actuation

B60L 2250/26

- . by pedal actuation

B60L 2250/28

- .. Accelerator pedal thresholds

B60L 2250/30

- . by voice

**B60L 2260/00****Operating Modes**

B60L 2260/10

- . Temporary overload

B60L 2260/12

- .. of combustion engines

B60L 2260/14

- .. of transmissions

B60L 2260/16

- .. of electrical drive trains

B60L 2260/162

- ... of electrical cells or capacitors

B60L 2260/165

- ... of converters

B60L 2260/167

- ... of motors or generators

B60L 2260/20

- . Drive modes; Transition between modes

B60L 2260/22

- .. Standstill, e.g. zero speed

B60L 2260/24

- .. Coasting mode

B60L 2260/26

- .. Transition between different drive modes

B60L 2260/28

- .. Four wheel or all wheel drive

B60L 2260/30

- .. Engine braking emulation

B60L 2260/32

- .. Auto pilot mode

B60L 2260/34

- .. Stabilising upright position of vehicles, e.g. of single axle vehicles

B60L 2260/40

- . Control modes

B60L 2260/42

- .. by adaptive correction

B60L 2260/44

- .. by parameter estimation

B60L 2260/46

- .. by self learning

B60L 2260/48

- .. by fuzzy logic

B60L 2260/50

- .. by future state prediction

B60L 2260/52

- ... drive range estimation e.g. of estimation of available travel distance

B60L 2260/54

- ... Energy consumption estimation

B60L 2260/56

- ... Temperature prediction e.g. for pre-cooling

B60L 2260/58

- ... Departure time prediction

**B60L 2270/00****Problem solutions or means not otherwise provided for**

B60L 2270/10

. Emission reduction

B60L 2270/12

. . of exhaust

B60L 2270/14

. . of noise

B60L 2270/142

. . . acoustic

B60L 2270/145

. . . Structure borne vibrations

B60L 2270/147

. . . electro magnetic (EMI)

B60L 2270/20

. Inrush current reduction, i.e. avoiding high currents when connecting the battery

B60L 2270/30

. Preventing theft during charging

B60L 2270/32

. . of electricity

B60L 2270/34

. . of parts

B60L 2270/36

. . of vehicles

B60L 2270/38

. . of data

B60L 2270/40

. related to technical updates when adding new parts or software

B60L 2270/42

. Means to improve acoustic vehicle detection by humans

B60L 2270/44

. Heat storages, e.g. for cabin heating

B60L 2270/46

. Heat pumps, e.g. for cabin heating