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 }

B60L 3/00 **Electric devices on electrically-propelled vehicles for safety purposes; Monitoring operating variables, e.g. speed, deceleration, power consumption** (measuring in general G01)

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 (protective devices and circuit arrangements in general H01H; H02H)

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; { Correction of wheel slip }
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; { Monitoring of operating variables }

B60L 5/00 **Current collectors for power supply lines of electrically-propelled vehicles** (current collectors in general H01R 41/00)

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 (B60L 5/40 takes precedence)
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 (B60L 5/34 takes precedence)

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 propulsionB60K 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 (B60L 11/1811, B60L 11/182, B60L 11/1822 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 (B60L 13/03 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 (electric devices for safety purposes B60L 3/00)

B60L 15/12 . . with circuits controlled by relays or contactors

B60L 15/14 . . with main controller driven by a servomotor (B60L 15/18 takes precedence)

B60L 15/16 . . with main controller driven through a ratchet mechanism (B60L 15/18 takes precedence)

B60L 15/18 . . without contact making and breaking, e.g. using a transductor

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 (arrangement of control devices for differential gearing B60K 23/02)}

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 (B60L 15/28 takes precedence)
B60L 15/26 . . with main controller driven through a ratchet mechanism (B60L 15/28 takes precedence)
B60L 15/28 . . without contact making and breaking, e.g. using a transductor
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 (devices along the route for controlling devices on rail vehicles B61L 3/00; central rail-traffic control systems B61L 27/00)

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 (B60L 15/32 takes precedence)

B60L 2200/00 Type of vehicles

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