

Adding Cruise Control to Mk1 (and Mk2)

This “how to” will cover how to fit cruise control to the Mk1 Mondeo. Fitting to Mk2 will probably be the same. The set used in my car is from an Mk2.

For this modification you will need:

- Cruise control wheel including the airbag (Scorpio wheel do not fit directly, I’ve tried it)
- Speed control module (containing the actuator) + connector and wiring
- Actuator cable for your engine type (V6: short cable, 1.6 – 2.0: long cable)
- 3 pedal switches + connectors and wiring
- Instrument Interface Module + connector and wiring
- Clock spring (if yours do not have 3 wires in the black connector)
- Cut-off relay if your car have traction control fitted
- Pin for the dash connector if it is missing (mine where)
- Pin for the black clock spring connector if it is missing (mine where)
- 1 bulb for the dashboard
- Cutting nipper (wire cutter)
- Soldering iron, tin solder
- Insulation tape
- Different coloured wires.

The cheapest way to make this modification will be to find the modules and cables at the car breaker. From list above and the size of this “how-to” you probably think it is not worth it, but it took me about 2 days to do but it where not full time. If you are familiar with wiring electronics you will not find it that hard.

Note that I live in Denmark and therefore have the wheel in the left side of the car!

If you want to do this modification I suggest that you read the whole instruction first and then go ahead. I can not take any responsibility for faults made, errors and things mentioned in this “how-to”

Here you have a picture showing all the parts needed for adding cruise control to the Mondeo.



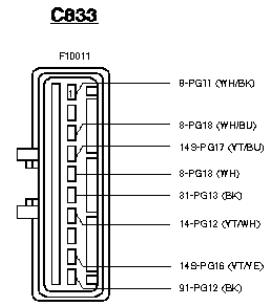
To the right you have the wheel, the 3 pedal switches, the cut-off relay, Instrument Interface Module, clock spring, cruise module connector, cruise module mounting bracket and cruise module. Except the parts above you will need a lot of wiring unless the wiring is in place already.

A few reminders first

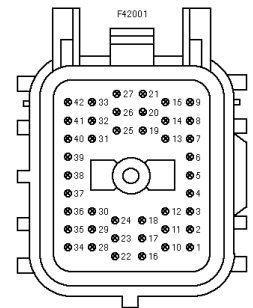
1. When working with wires especially in the engine compartment it is best to solder the wires together and then use insulation tape or heat shrink to close the junction!
2. When working with airbags remember to remove the ‘-‘ wire (15 min. before proceeding) from the main battery to avoid the bag to engage!

Fitting cables through the bulkhead into the cabin

Started by checking if you have the wiring in place. If you have a connector (see picture below) for the cruise module you can skip making a loom, else start making a small loom.



1. Make a loom of 6 wires (different colours)
2. Feed them through the bulkhead into the cabin (where the present big loom is going through). Make sure they are long enough to reach the steering column.
3. Connect the wires from the cruise control module like this:
 Pin 1: Warning light (to Instrument Interface Module)
 Pin 2: Not Connected
 Pin 3: VSS signal (Vehicle Speed Sensor). Connect to pin 5 in the big connector near the air filter case (see picture to the right).
 Pin 4: Pedal switches, clutch
 Pin 5: Clock spring, cruise switches
 Pin 6: Clock spring, cruise switches
 Pin 7: +12V from fuse F23
 Pin 8: Not Connected
 Pin 9: Pedal switches, brake
 Pin 10: Ground connection. Connect to ‘-‘ on battery or another ground connection.



Connect the new loom to these pins in the cruise module connector: Pin1, 4, 5, 6, 7 and 9. Write down what colour wire you connect to which pin for later use when working in the cabin. When this is done the wiring in the engine compartment is finished.

Mounting the cruise control module

The cruise module will be placed in the right side near break fluid tank:



Start mounting the bracket. To do that you will need to remove the plastic inner mudguard.

1. Remove the wheel and the screws holding the guard.
2. Place the cruise module bracket in the 3 holes and mount the 3 nuts. See below.



3. Remount the plastic inner mudguard.
4. Place the module in the bracket and fit the nut.
5. Fit the cruise module connector



Mounting the actuator cable

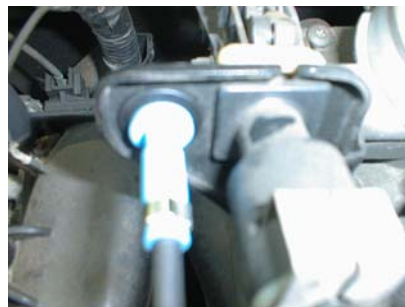
1. Fit the actuator cable to the actuator / cruise module.



2. Route the cable to the throttle and fit the outer ring in the hole.



3. Fit the inner ring into the outer ring.
4. Fit the actuator cable to the throttle.



After this has been done, all the mechanical work is finished in the engine compartment.

Steering wheel mounting

Now remove the old steering wheel (remember to disconnect the battery for at least 15 min.).

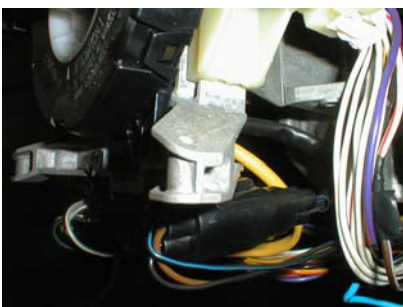
1. Remove the 2 torx screws (the ones in the middle) on the back of the wheel.
2. Unplug and remove the airbag unit.
3. Remove the big bolt holding the wheel and remove the old wheel.
4. If your clock spring only has two wires/pins in the black connector then you will need to replace it with a unit containing 3 wires/pins.
5. Put the cruise wheel in place.
6. Tighten the bolt holding the wheel
7. Plug the cruise switches and airbag unit into the connectors and fit the airbag unit
8. Tighten the torx screws holding the airbag unit (see picture below)



Wiring up the clock spring

Now the wires from the engine compartment need to be connected in the cabin. You can start by fitting the wires for the wheel switches.

1. Start by routing the wires from cruise module connector (CMC) pin 5 and 6 to the steering column.
2. Cut the wire going to pin 1 in the female black clock spring connector and solder the wire from CMC pin 6 to the wire going into pin 1 in the black clock spring connector.
3. If your female black clock spring connector does not have 3 pins add the missing pin/wire from a scraped car. See below how to open the connector and fit the wire.
4. Solder the wire from CMC pin 5 to the wire going into pin 3 (the new pin added before) in the black clock spring connector.

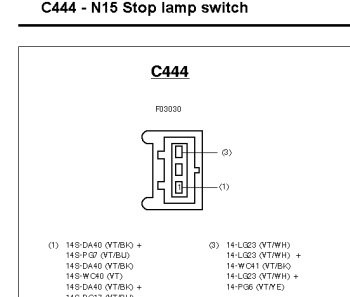
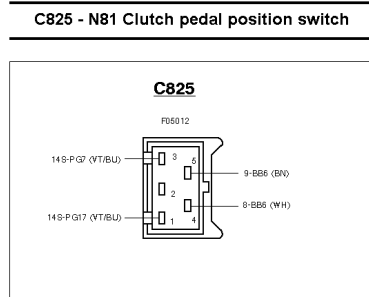
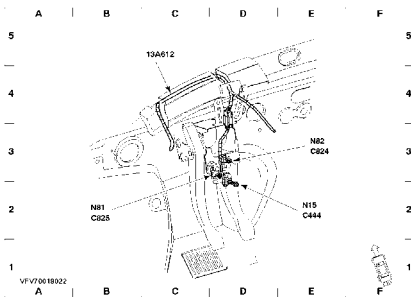
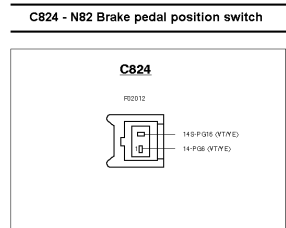


When this is done the wheel switches are done and should be working.

Wiring up the pedal switches

The pedal switches are located in 3 holes at the clutch and brake pedals, 1 for the clutch and 2 for the brake. The red switch is for the clutch, the black for stop light and green is the brake pedal position switch.

The pedal switches ensure that when you step on one of the pedals, the cruise function will be disabled.



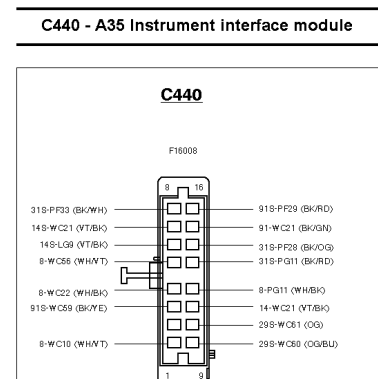
1. Start by routing the wires from cruise module connector (CMC) pin 4 and 9 to the top of the pedals (where the wire for the stop light / brake switch is located).
2. In my car there were 2 wires going for the stoplight switch. Cut these and solder the wire going to pin 3 to the new (6 pins) female Pedal Switch Connector (PSC) pin number 2. This wire will then be routed connected to the brake pedal switch (green)
3. Solder the other wire to the new female PSC pin 1.
4. Solder the wire from cruise module connector CMC pin 4 to the wire going into pin 6 in the new female PSC.
5. Solder the wire from CMC pin 9 to the wire going into pin 3 in the new female PSC.
6. Solder a wire to female PSC pin 1 and route it to the Instrument Interface Module (IIM), see next section.

Wiring up the Instrument Interface Module (IIM)

The IIM will enable the cruise warning light in the cluster when the cruise module is active. It also ensures that the strength of the warning light is dimmed when the headlight is on (driving at night). The IIM can also be used together with the trip computer (if fitted) to give beeps when buttons are pushed and when running low on fuel.

I only wired up a few of the wires for the IIM since I only wanted to function mentioned above.

The IIM is located behind the light switch panel.



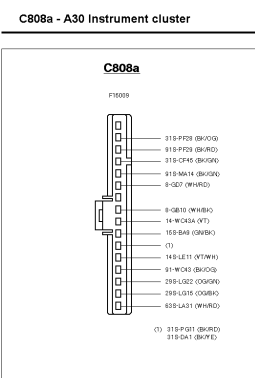
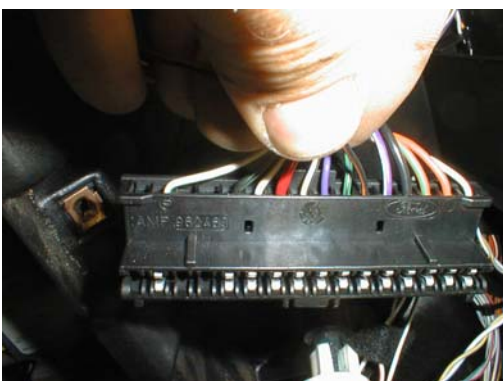
1. Start by routing the wires from cruise module connector (CMC) pin 1 to the IIM.
2. Solder the wire to the wire going to pin 12 on the IIM.
3. Solder a wire to pin 10 on the IIM and route it to the Interior lighting dimmer pin 2 (orange/white). This makes the cruise warning light dim at night.
4. Solder a wire to pin 11 on the IIM and route it to fuse F30.
5. Solder a wire to pin 15 on the IIM and route it to a ground connection e.g. near light switch.
6. Solder a wire to pin 13 on the IIM and route it to the back of the dash cluster.

Wiring up the cruise warning light

The wire from IIM pin 13 needs to be routed to the back of the cluster. This is an output that makes the cruise warning light up when the cruise function is enabled.

My cluster had the cruise symbol next to the battery symbol, but the wire for warning light was missing. I fitted a wire and pin from a scrapped connector.

1. Remove the dash surround (5 + screws)
2. Remove the cluster (5 + screws)
3. Fit a pin in the connector for the cluster. To do that you will need to open the connector.
4. Solder the wire from IIM pin 13 to the wire from pin 6 from the right in the picture below.
5. Fit a bulb in the bulb holder.
6. Refit the cluster and dash surround.



Testing

Now every thing should be in place and ready for testing.

1. Start the engine and push the upper left button to power up the cruise system.
2. Take the car for a test run on a strait road and. Speed up until at least 40km/h
3. Push the '+' or '-' button to engage the cruise function. Now the warning light should turn on.

Here you can see the cruise light is on.



Using the cruise function

The cruse control has 5 buttons.

1. Upper left: Power up the system.
2. Lower left: Power down the system (resets the speed memory of the system)
3. Upper right: Pause/resume. When the cruise function is engaged the button will work as an off/resume function.
4. Middle right: Increase speed/memory. Push once and the system will remember the current speed. Hold to speed up until the button is released. If the warning light is on, a single quick click on the button will increase the speed ~ 1.5km/h.
5. Lower right: Lower speed/memory. Push once and the system will remember the current speed. Hold to lower the speed until the button is released. If the warning light is on, a single quick click on the button will lower the speed ~ 1.5km/h.

Try to use it and get to know the functions of the buttons.

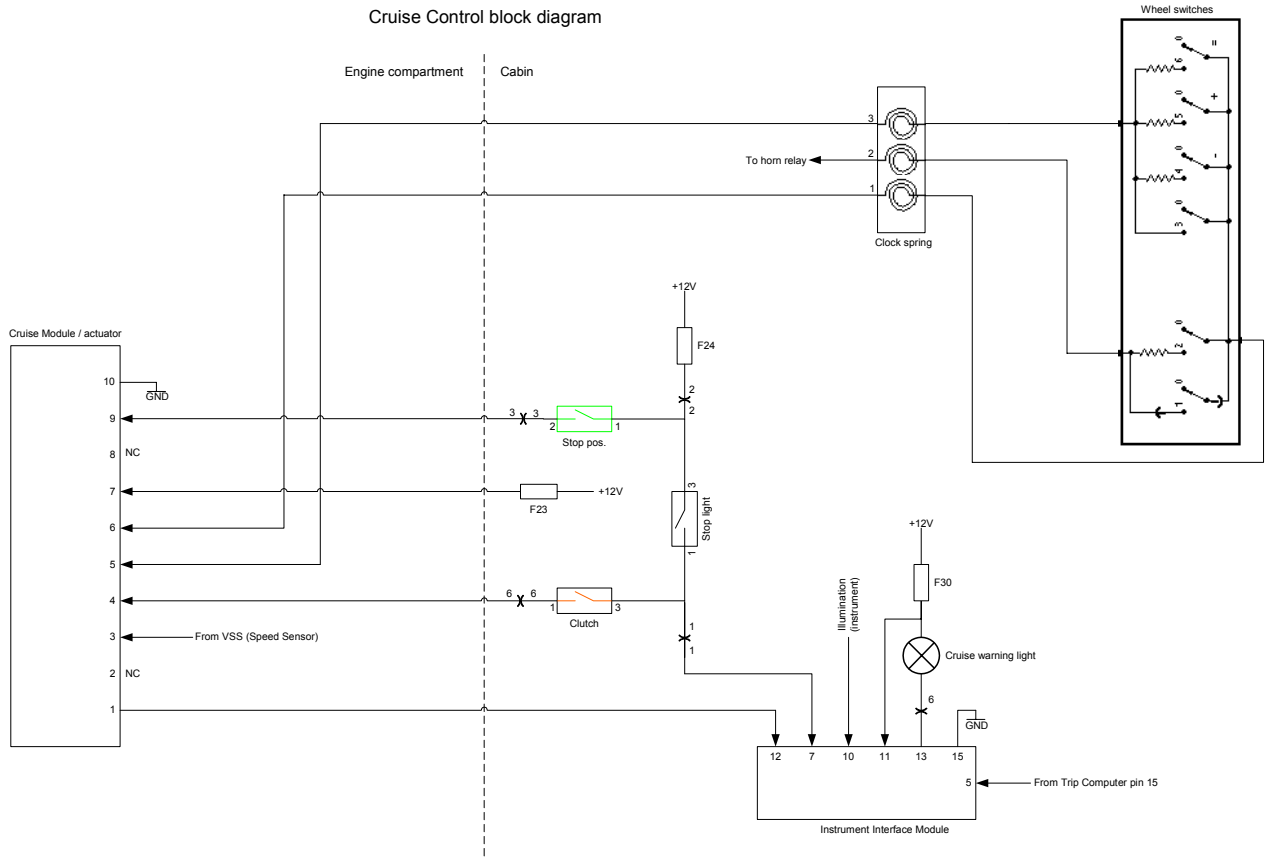
After this has been done enjoy your new and finished work 😊

Best regards,
Flash (Martin)

PS. Excuse me if the grammar is horrible, I am from Denmark so English is my 2nd. Language.

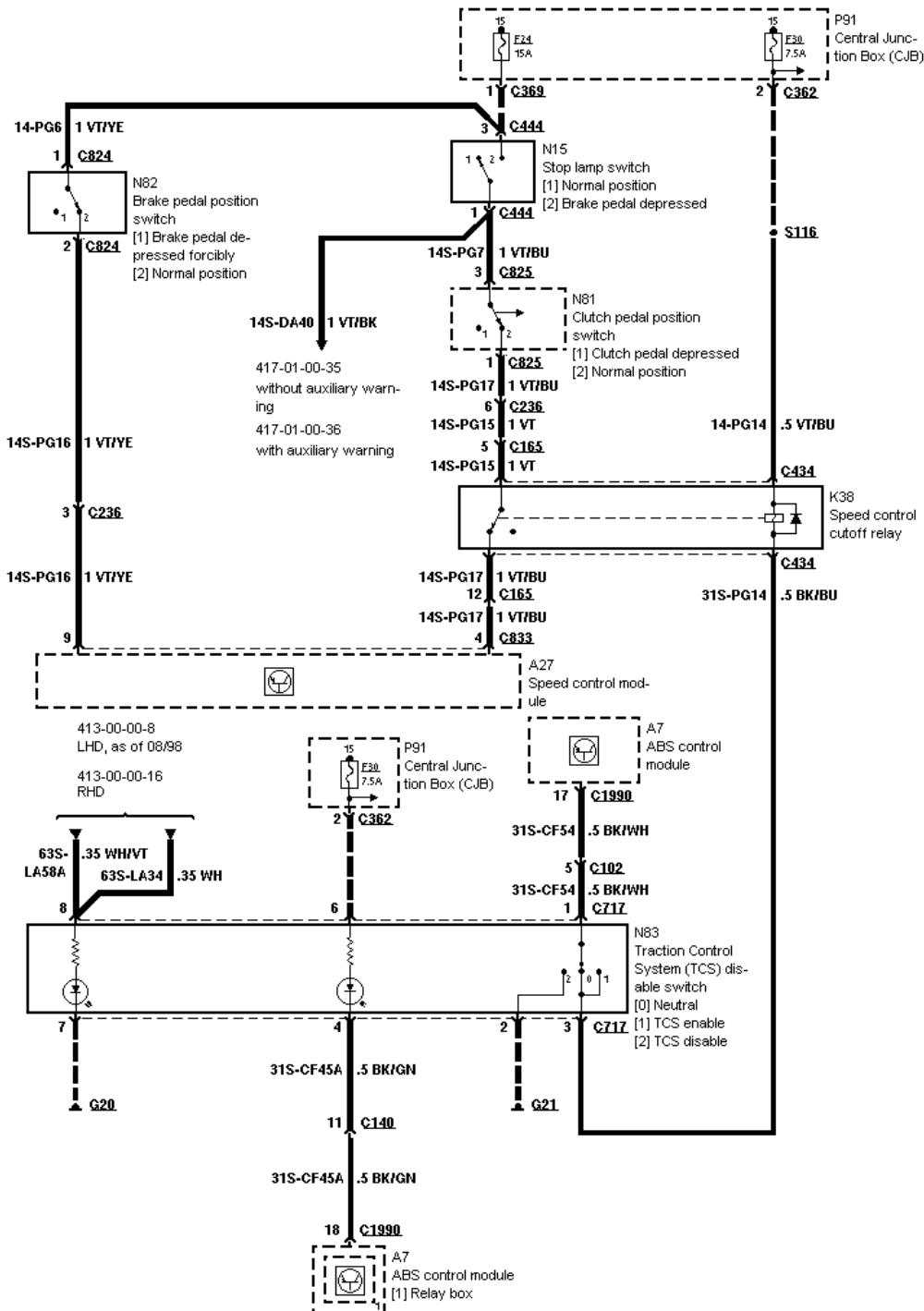
Wiring Diagram

This is the wiring diagram for the complete cruise control system.

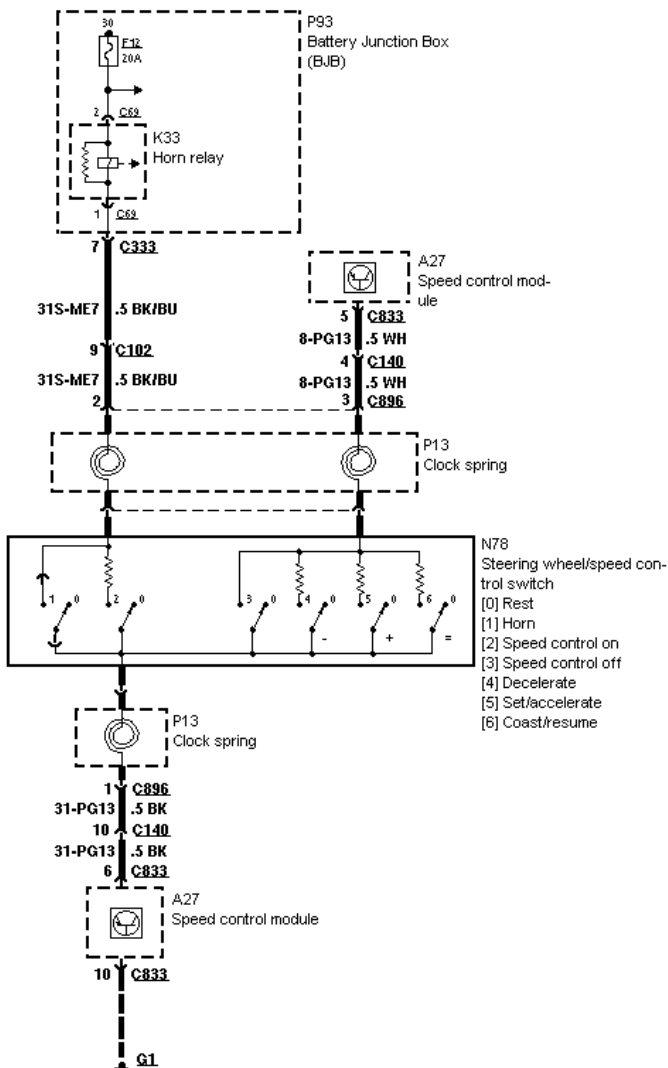


Cruise Control block diagram

310-03-00-014, Vehicle Speed Control, speed control, manual transmission, Bosch 5.3 ABS, as of 08/98

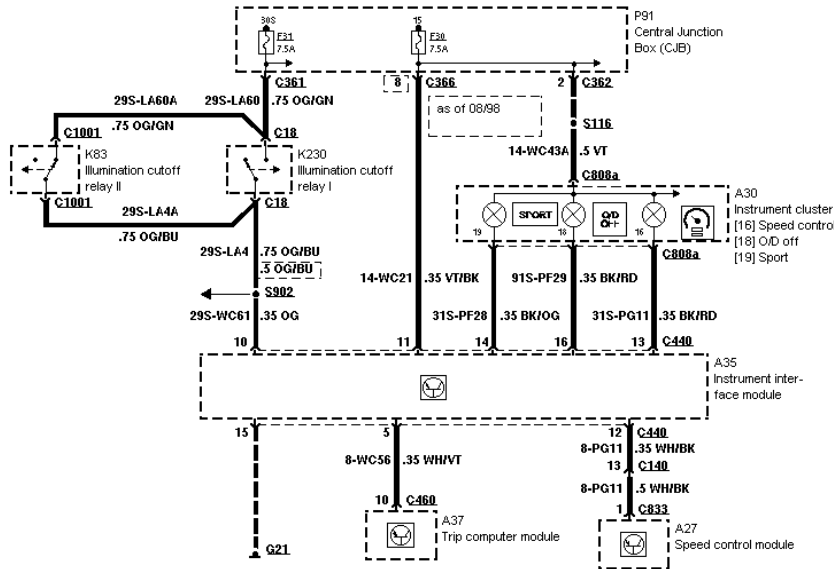


310-03-00-015, Vehicle Speed Control, speed control



Instrument Interface Module block diagrams

418-00A-00-002, Module Communications Network, Instrument Interface Control, LHD with daytime running lamps



418-00A-00-500, Module Communications Network, Instrument Interface Control, Block diagram

