

It seems all interested parties are experiencing the same issues – which are confined to a very specific area of the instrument cluster. Specifically, the common problems are:

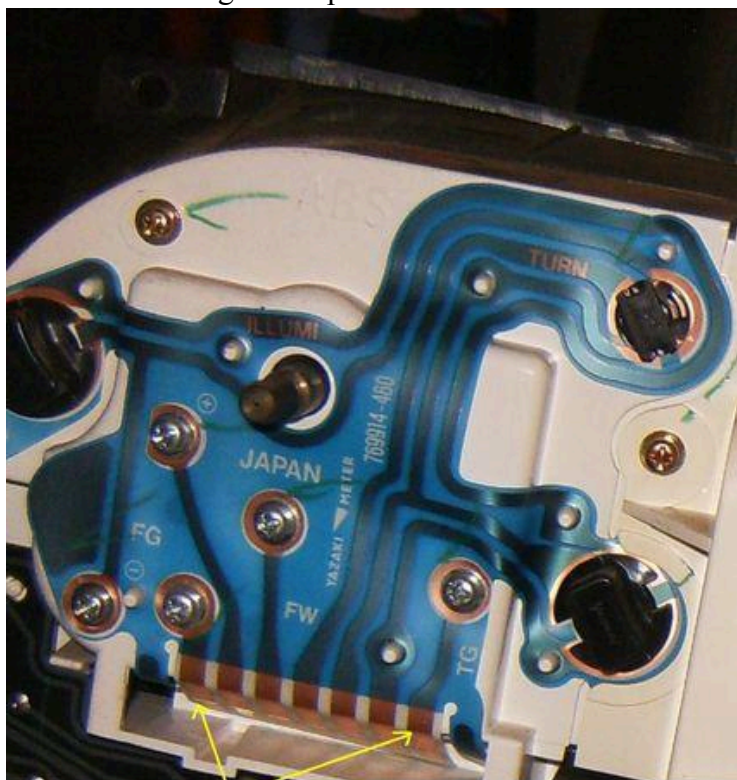
1. Intermittent (but very temporary) erroneous readings provided by both the coolant temperature and fuel tank level indicators.
2. Bill B noted that his Low Fuel Level warning lamp was illuminated as well.

I assume he is referring to the one in the RH section of the cluster – an oval under the gas pump icon (indicates that there is less than 10 liters of gas remaining).

Not the one in the center section - a little arrow/dot combo next to the voltmeter - that when flashing, indicates the driving range has fallen below 30 miles. That range is calculated by the trip computer - based on current fuel consumption and quantity of fuel remaining.

3. No one reported a loss of either the instrument backlighting lamps (2) or the RH turn signal indicator lamp. *But that may well be due to the fact it was daytime and the directional was not in use.*

So we are looking at this printed circuit:



Pins are numbered 1-7 left to right.

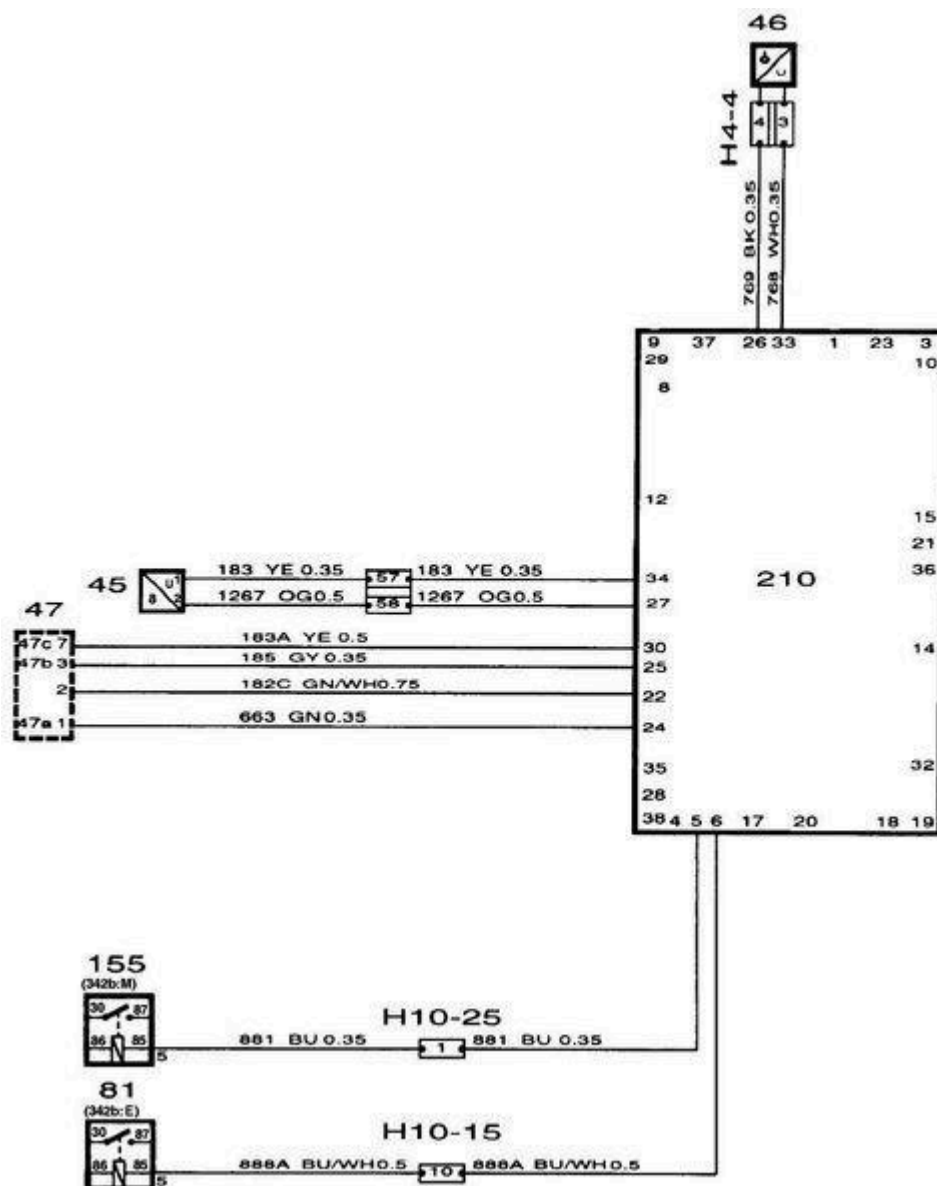
- 1 = Variable 1-9 V control input to gas gauge from EDU
- 2 = Constant 12 V to gas/temp gauges/low fuel lamp from EDU
- 3 = Grounding leg for low fuel warning lamp to EDU
- 4 = Pulsed 12 V to RH turn signal lamp from Hazard/TS flasher
- 5 = Common ground leg for gauges, TS indicator & backlighting
- 6 = Variable 2-9 V to backlighting lamps from dimmer rheostat
- 7 = Variable 1-9 V control input to temp gauge from EDU

Coolant Temperature Gauge 47c

pin 4. The lamp can also be activated directly from the anti-theft alarm control module.

The temperature gauge 47c, fuel gauge 47a, instrument lighting lamps 18, and indicator lamp 47i are connected to ground via pin 5. As noted above, the low fuel level lamp is grounded independently of the other 4 components.

How all components are wired to the EDU - and the associated pins.



Component key:

45 & 46 are the engine coolant and fuel tank level sensors respectively.

47 is the area of the cluster we are talking about but Saab refers to the entire cluster as component 47.

155 is the low fan speed relay

81 is the high fan speed relay

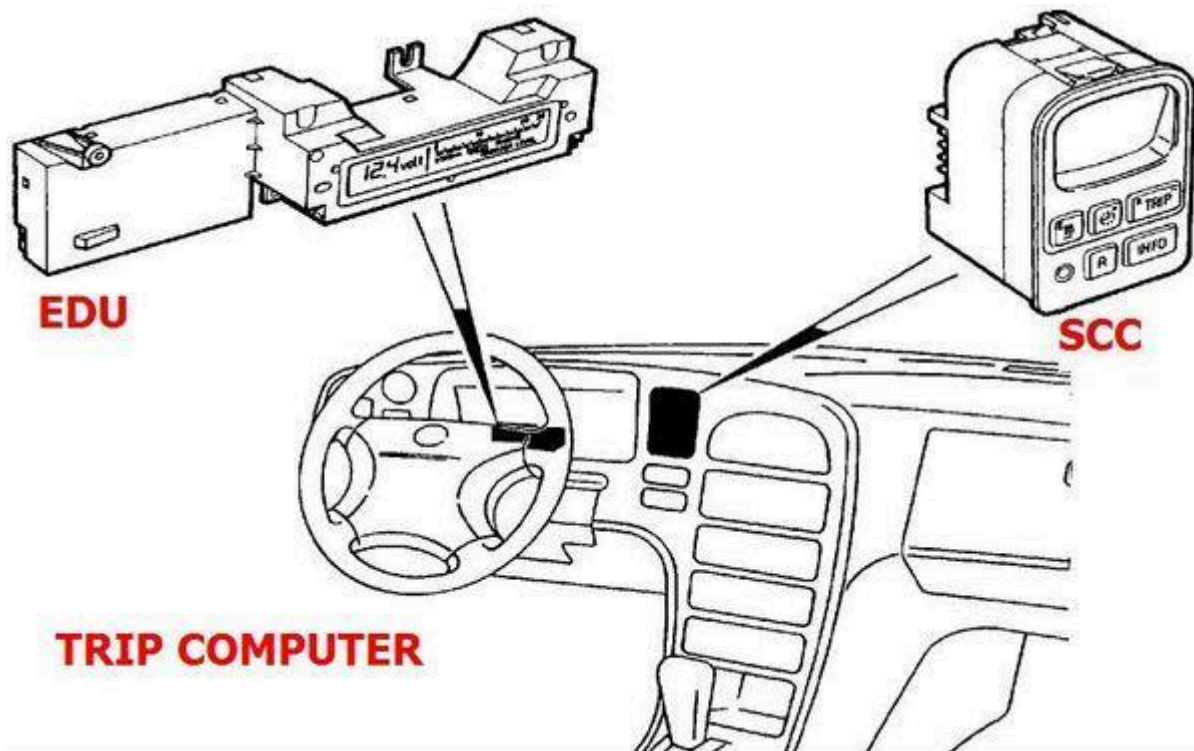
Note: All of the above is just provided as information to aid in diagnosing the problems. The symptoms, causes and remedies will likely vary from individual to individual.

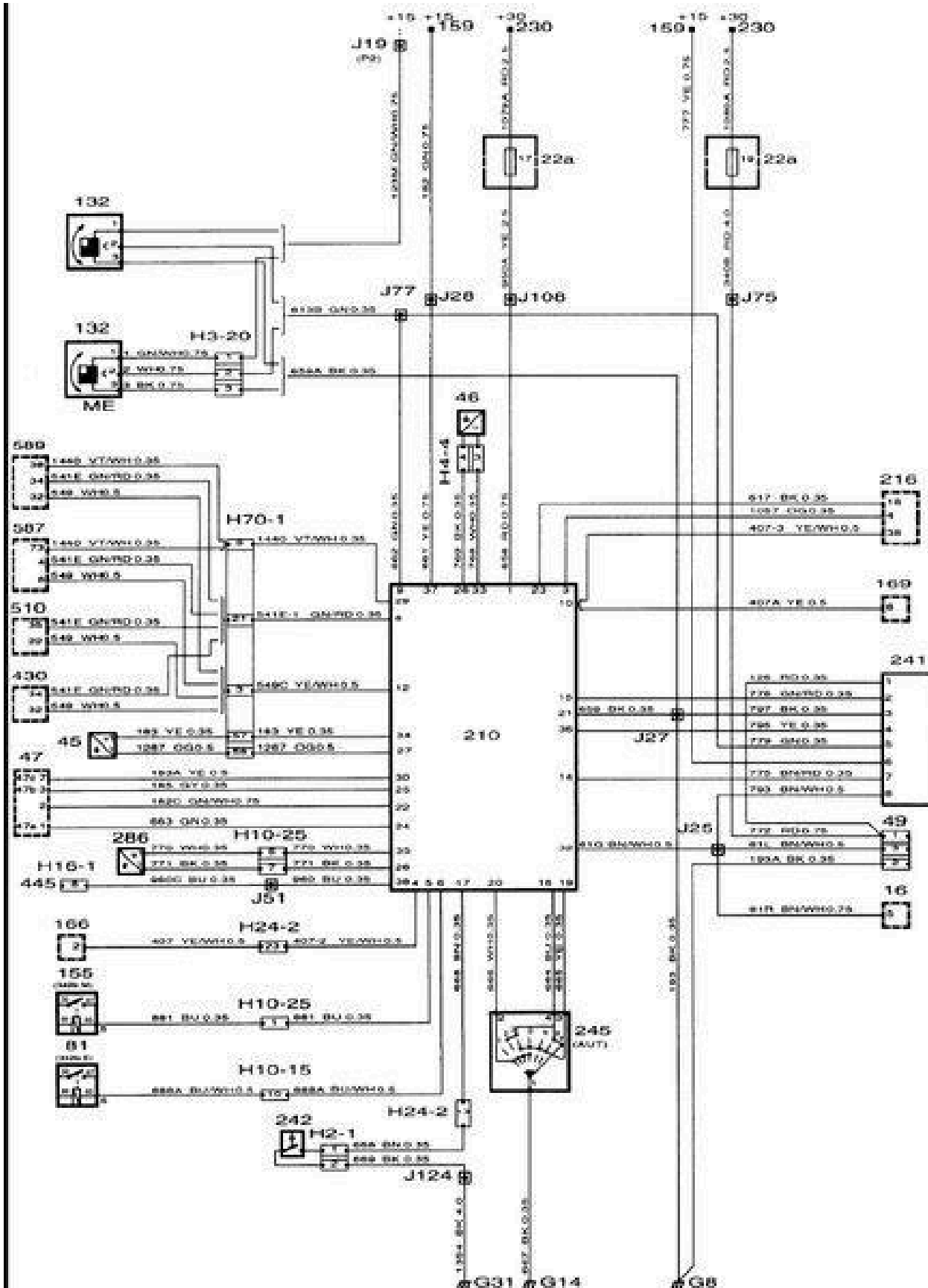
First, here are the pinouts for the EDU.

Pin	Component Function	In/Out	Measurement conditions	Measured value	Between
1	Battery positive voltage +30	in		<0.5 V	BATT+ - 1
2	No connection				
3	ACC wake up	in	Command from ACC No command	BATT+ 0 V	3 - 21
4	A/C, out	out	ISAT activate A/C ON OFF	BATT+ 0 V	4 - 21
5	Radiator fan, step 1	out	ISAT activate A/C ON OFF	0 V BATT+	5 - 21
6	Radiator fan, step 2	out	ISAT activate A/C ON OFF	0 V BATT+	6 - 21
7	No connection				
8	Fuel pulses Motronic TRIONIC	in	Idle, warm engine Idle, warm engine	6.25 Hz 3 ms 7.5 Hz 2.5 ms	8 - 21
9	Speed signal	in	Rotate front wheels 1 revolution/s 20 km/tim	Alternates between 0 and approx. 11 V approx. 12 Hz	9 - 21
10	A/C, in	in	AC/ACC ON OFF	BATT+ 0 V	10 - 21
11	No connection				

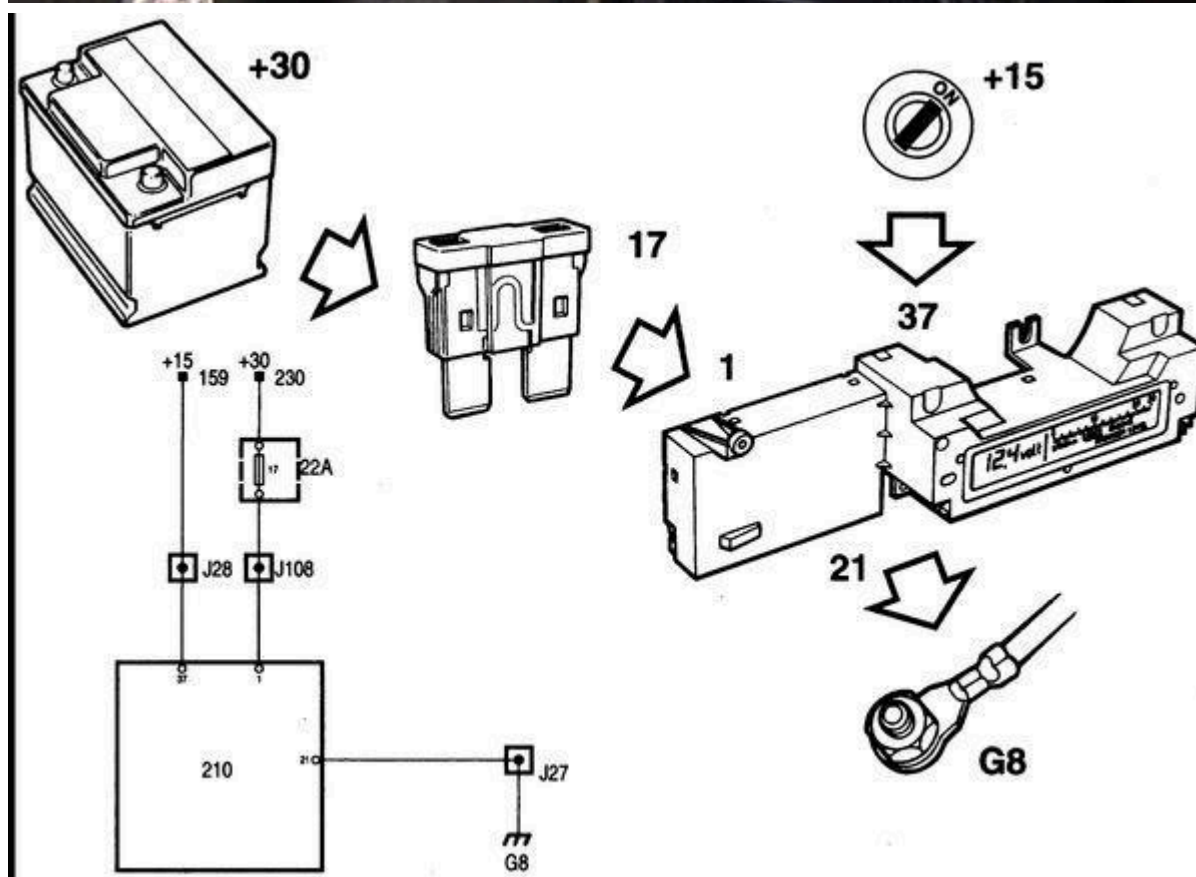
Pin	Component Function	In/Out	Measurement conditions	Measured value	Between
12	CHECK ENGINE	in	Lamp on lamp off	0 V BATT+	12 - 21
13	No connection				
14	INFO button	in	Button depressed button out	0 V BATT+	14 - 21
15	R button	in	Button depressed button out	0 V BATT+	15 - 21
16	No connection				
17	Coolant level	in	Lamp lit Lamp out	0 V BATT+	17 - 21
18	Trans. range switch A	in	P, R, 3, 2 N, D, 1	0 V 12 V	18 - 21
19	Trans. range switch B	in	R, N, D, 3 P, 2, 1	0 V 12 V	19 - 21
20	Trans. range switch C	in	D, 3, 2, 1 P, R, N	0 V 12 V	20 - 21
21	Ground	in		< 0.1 V	21 - BATT-
22	Voltage supply to fuel/temp. gauge	out		1 V under BATT+	22 - 21
23	Outside temperature signal	out		Fluctuates between 7 - 13 V	23 - 21
24	Fuel level gauge	out	Empty tank Full tank	approx. 1 V approx. 9 V	24 - 21
25	Lamp, low fuel level	out	Activate with ISAT Lamp ON Lamp OFF	0 V BATT+	25 - 21
26	Ground, fuel level sensor	in		< 0.1 V	26 - 21
27	Ground, coolant temperature sensor	in		< 0.1	27 - 21
28	Ground, outside temperature sensor	in		< 0.1	28 - 21
29	No connection				
30	Engine temperature display	out		1 - 9 V depending on coolant temp.	30 - 21
31	No connection				
32	Rheostat	in	Rheostat min. Rheostat max.	13 - 100% PWM approx. 2 V Batt+	32 - 21
33	Fuel level sensor	in	Empty tank Full tank	approx 0.4 V approx. 3 V	33 - 21

Pin	Component Function	In/Out	Measurement conditions	Measured value	Between
34	Coolant temperature	in		0 - 1 V, depending on temp.	34 - 21
35	Outside temperature sensor	in		1.5 - 5 V depending on temp.	35 - 21
36	Light sensor	in	Min. light intensity Max. light intensity	0 V 10 V	36 - 21
37	+15	in		< 0.5 V	37 - BATT+
38	Scan tool diagnostics	in/out	ISAT connected ISAT not connected	Batt + 5 V	38 - 21

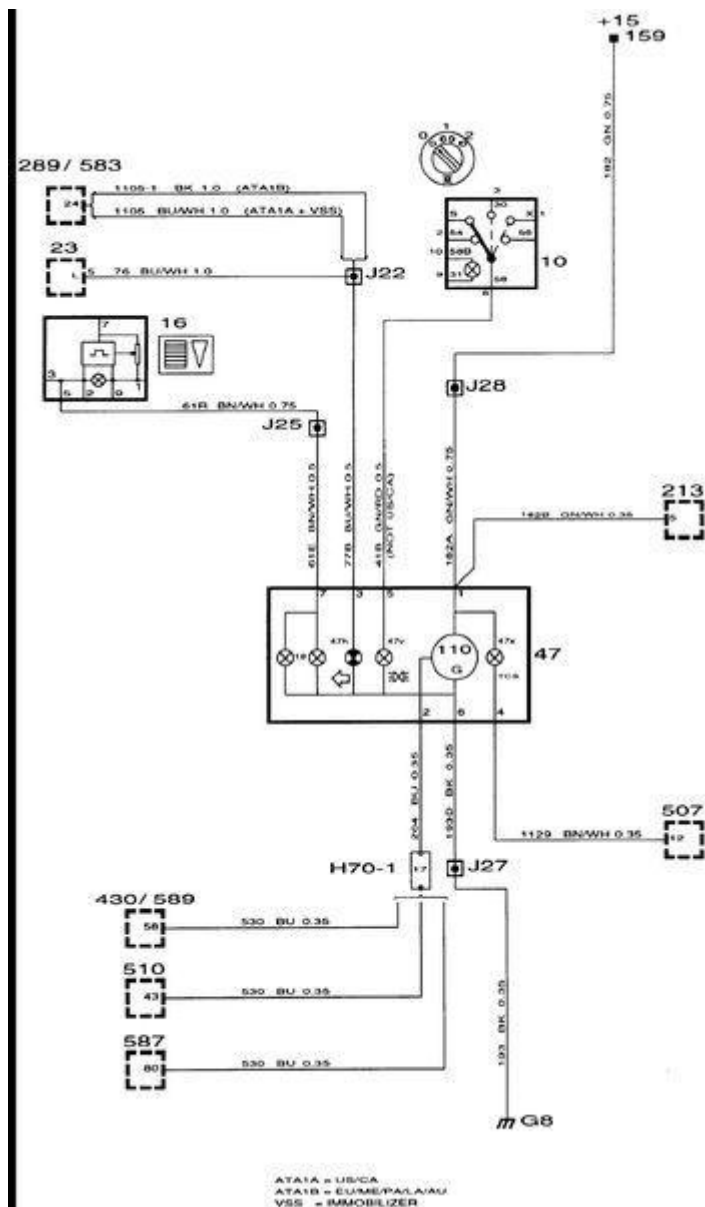




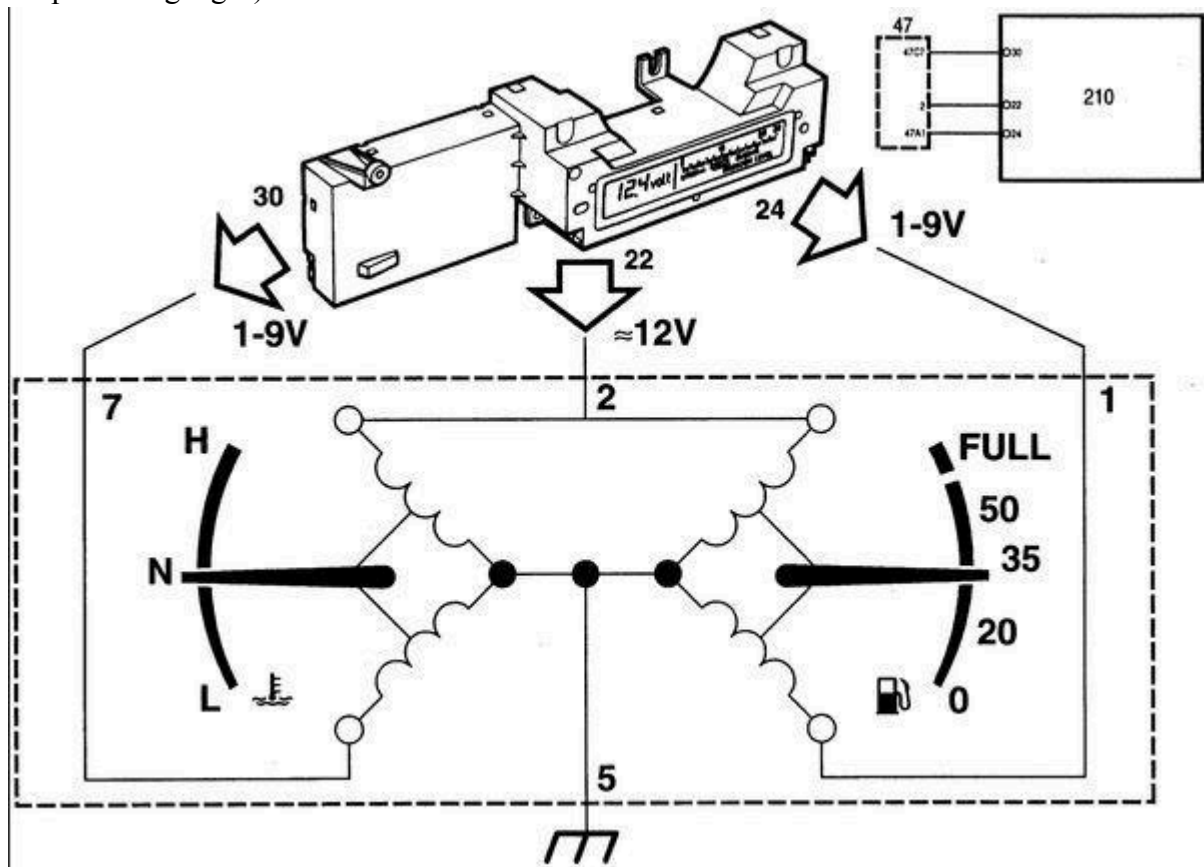
I was just lucky I guess. Whenever they complained of a no gas/temp gauge condition, I was always able to get them working again by sticking my hand in the SCC opening and reseating the 7 pin plug in it's socket.



They fail to mention that after the ignition switch, the +15 is fed through fuse #13 - and then to the EDU and the warning lights section of the instrument panel. These warning lights:



Schematic and brief explanation of the "Combined Instrument" (i.e. the fuel tank & coolant temperature gauges):



Färddator EDU2:

+12V går från batteriet, till ett fördelningsblock, och sedan till tändningslåsets pinne "30", när nyckeln står i tändläge går strömmen ut på pinne "15" till en säkringsdosa där en säkring benämnd "F13" leder den vidare direkt EDU-enheten

Lösning:

**Omlödning av EDUns
spänningsmätning stift
EDUn löser**



**4 breda stift i
problemet.**