IHKA, Climate Control Module (ADR 78)

I.   Scope/ Overview:

This Tutorial shows How to: Connect to IHKA (Climate Control) Module; View Main Menu; View Info/ID about Software & Hardware; Read Fault Memory (Fehlerspeicher); View Live Data/ Status of Inputs. You can also use F6 Activations to Test LED's, Calibrate & Test Flap Motors (8 Flaps in E9x US Models), and to AutoAddress Flap Motor (e.g. after replacement).

Inputs from Sensors: which can be viewed as Live Data include: (1) Temperature Sensors: Outside, at center of Climate Control Panel, Footwell Vent, Ventilation Flap, and Evaporator (Cooling Coil); Refrigerant Pressure Sensor; System Voltage; T-stat Setpoints; Control Panel Button function when pressed; **POSITION of EACH of 8 FLAPS**. Frequent complaint is proper cooling/ heating on ONE side of system, but NOT the other, caused by Mixed Air Flap issue.

How System Works: There is a 'Mixed Air Flap', controlled by Thermostat on each side. If Compressor Valve is active, (Snowflake LED green), Refrigerant Pressure should be in 12-13 Bar range, Evaporator temp should be < 10C and Evaporator (cooling coil) should be de-humidifying air. All air flows through Evaporator coil & is cooled, w/compressor pumping & Refrigeration System properly-charged. 'Mixed Air Flap' modulates air temp by sending air through heater matrix on that side. Full Cool: M/A flap position 0%; Full Heat: near 100%
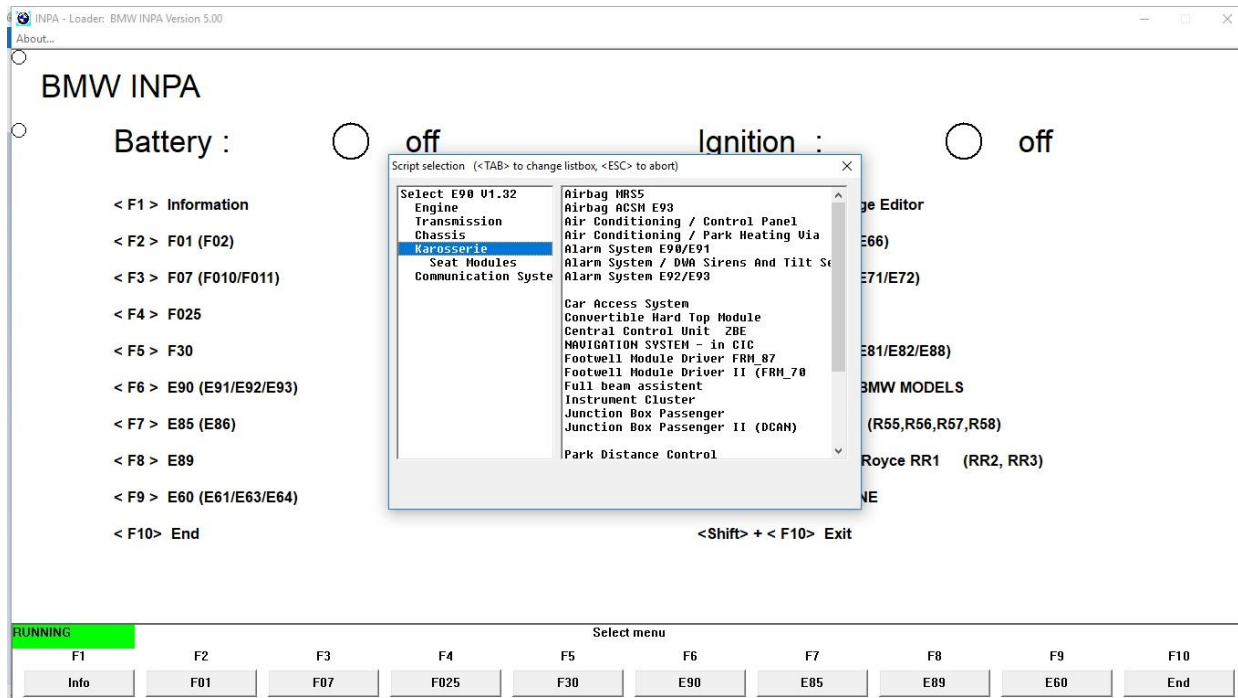
ScreenPrints show SAME Status/Live Data Screens, but under TWO Conditions:
A. Control Panel Settings: Both T-stats @ 68F/20C, Auto Mode, AUC, (my English Translation of 'Labels')
B. MAX Button Pressed: (Center of Driver-side T-Stat); **'Over-riding'** control panel settings, M/A Flaps 0%

II.   Connecting to IHKA Module:

A. *Connect: Body (Karosserie) | Air Conditioning / Control Panel:*

After selecting "E90" in opening screen (F-key varies among INPA versions), in LEFT Listbox, D-Click/ Select "Body/Karosserie", RIGHT Listbox should then show multiple choices; D-Click/ Select "Air Conditioning / Control Panel"; Press Enter; IHKA Main menu appears as shown in (B) below.

B. IHKA Main Menu:

C. F1, Information:

Information & Identification screens (F1 & F2) give general Module Hardware & Software info, such as: 'IPO' data file for IHKA87 Module; Control Unit (ECU) Description File (IHKA87.PRG); BMW Part# (Teilenummer) '9199260', which is last-7 digits of 11-digit part#: 64119199260; and Supplier (Leiferant) of the Module (Siemens VDO).

D. *F2, Identification:*

INPA - Loader: Klimabedienteil IHKA87 (bis 09/09) Version 9.002   — ☐ ✕

About...

Identifikation

BMW Teilenummer	:	**9199260**
Codier-Index	:	**1**
Varianten-Index	:	**18261**
Diagnose-Index	:	**1488**
Hardwarenummer	:	**03**
Softwarenummer Funktionssoftware	:	**11.0.196**
Softwarenummer Betriebssystem	:	**3.3.30**
Softwarenummer Nachrichtenkatalog	:	**0.23.103**
Softwarenummer (Reserve) Zur Zeit nicht benutzt	:	**0.0.0**
Herstelldatum	:	**27.02.2007**
Lieferant	:	**Siemens VDO Automotive**

RUNNING   Hauptmenü ↓

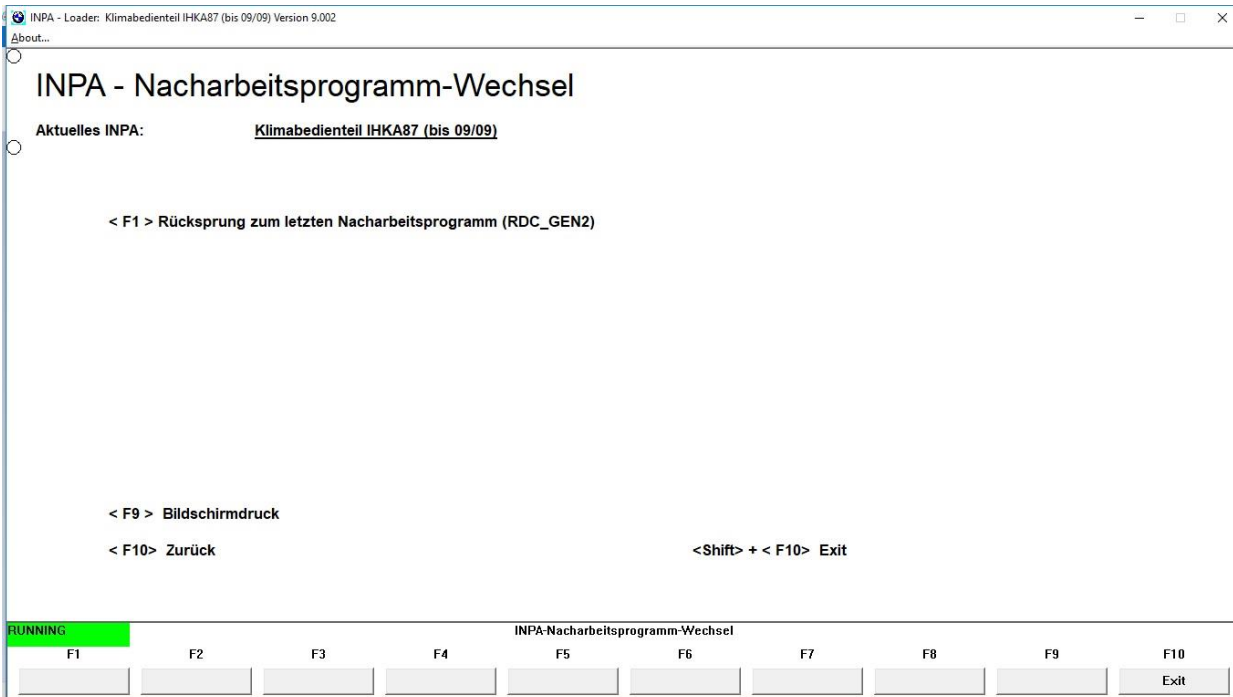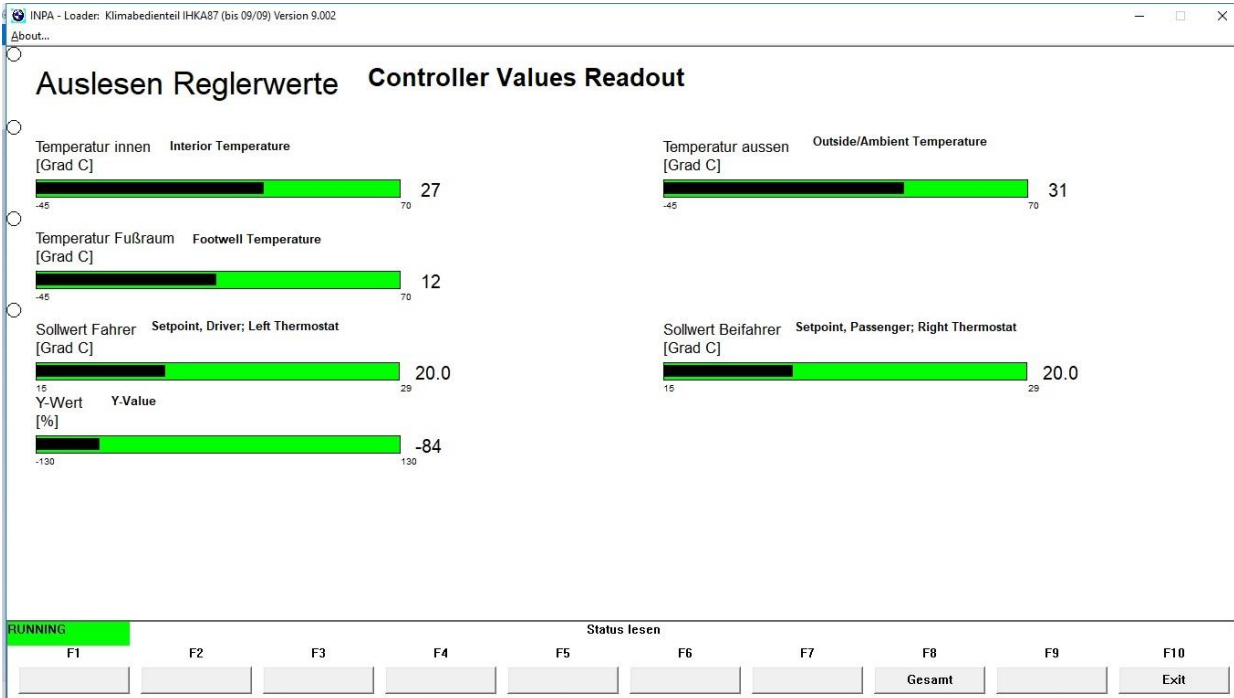| F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
KVP							Gesamt		Exit

E. *F3, Alternation or Exchange (Wechsel) with Prior Program:*

Allows jumping between Modules or return to prior Module Program Connection; skip for now; If anyone has tips on HOW to use this feature, please advise.
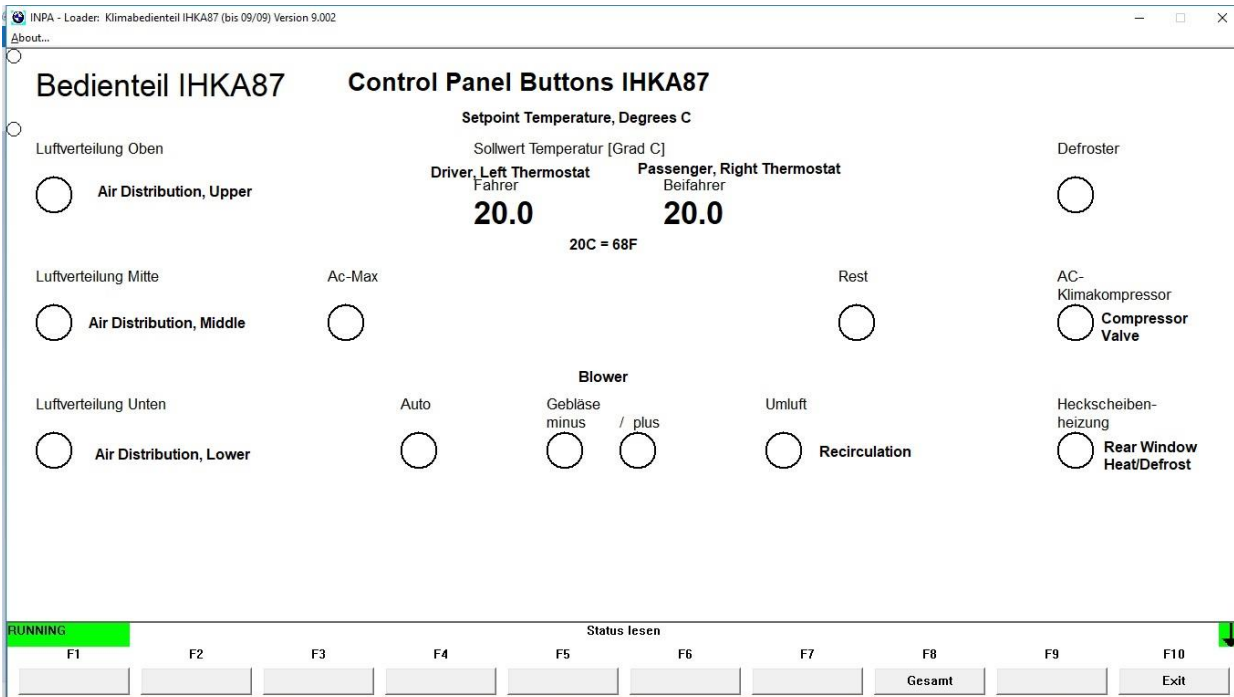
INPA - Loader: Klimabedienteil IHKA87 (bis 09/09) Version 9.002   — ☐ ✕

About...

INPA - Nacharbeitsprogramm-Wechsel

Aktuelles INPA: **Klimabedienteil IHKA87 (bis 09/09)**

     < F1 > Rücksprung zum letzten Nacharbeitsprogramm (RDC_GEN2)

     < F9 > Bildschirmdruck

     < F10> Zurück   **<Shift> + < F10> Exit**

RUNNING   INPA-Nacharbeitsprogramm-Wechsel

F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
									Exit

F. F4, Fault Memory (Fehlerspeicher):

What you want to see: "Kein Fehler gefunden" = NO Fault found

If there were Fault Code(s), such as those related to Flap Motor(s) NOT functioning correctly, you would Read Fault Memory in IHKA Module to get Fault Code, Definition, and Fault Details, such as whether Fault is currently present (Fehler momentan vorhanden), km Odometer reading when Fault Code was saved, etc.

G. F5 Status, Live Data: Control Panel Settings: 68F/20C, Auto, AUC; ENGLISH TRANSLATION:

INPA versions are mostly German, except menus; English "Sub-titles" added by me; using Google Translate

1. F5, F1, Analogport/ Inputs Readout:

2. <u>F5, F2, Controller Values Readout:</u>

INPA - Loader: Klimabedienteil IHKA87 (bis 09/09) Version 9.002   — ☐ ✕
About...

Auslesen Reglerwerte   **Controller Values Readout**

Temperatur innen   **Interior Temperature**
[Grad C]
-45   70   **27**

Temperatur aussen   **Outside/Ambient Temperature**
[Grad C]
-45   70   **31**

Temperatur Fußraum   **Footwell Temperature**
[Grad C]
-45   70   **12**

Sollwert Fahrer   **Setpoint, Driver; Left Thermostat**
[Grad C]
15   29   **20.0**

Sollwert Beifahrer   **Setpoint, Passenger; Right Thermostat**
[Grad C]
15   29   **20.0**

Y-Wert   **Y-Value**
[%]
-130   130   **-84**

RUNNING   Status lesen

F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
							Gesamt		Exit

3. <u>F5, F3, Control Panel Buttons, IHKA87:</u>

White circle "Fills"/Black ONLY as long as you press button. Button test ONLY; NOT position on/off selected digitally by button press; NO buttons were pressed when this ScreenPrint was saved.

INPA - Loader: Klimabedienteil IHKA87 (bis 09/09) Version 9.002   — ☐ ✕
About...

Bedienteil IHKA87   **Control Panel Buttons IHKA87**

Setpoint Temperature, Degrees C

Sollwert Temperatur [Grad C]

Driver, Left Thermostat   **Passenger, Right Thermostat**
Fahrer   Beifahrer
20.0   **20.0**
20C = 68F

Luftverteilung Oben   ○ **Air Distribution, Upper**

Defroster   ○

Luftverteilung Mitte   ○ **Air Distribution, Middle**

Ac-Max   ○

Rest   ○

AC-Klimakompressor   ○ **Compressor Valve**

Blower

Luftverteilung Unten   ○ **Air Distribution, Lower**

Auto   ○

Gebläse minus / plus   ○ ○

Umluft   ○ **Recirculation**

Heckscheiben-heizung   ○ **Rear Window Heat/Defrost**

RUNNING   Status lesen   ↓

| F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
							Gesamt		Exit

4. <u>F5, F4, Flap Positions:</u>

Observe position, test movement, of Eight (8) Flaps in IHKA System; Left & Right Mixed Air Flaps direct cooled air through heater core to regulate delivery Temp EXCEPT in MAX Setting, (Button in center of Driver T-stat) OR when Defrost button pressed (Right side of Climate Control Panel). Pressing Defrost 'Over-rides'

control panel setting and Mixed Air Flaps go to full heat (all air directed through Heater core), blower speed goes to Maximum Speed, and all air directed to Windscreen/ Windshield.
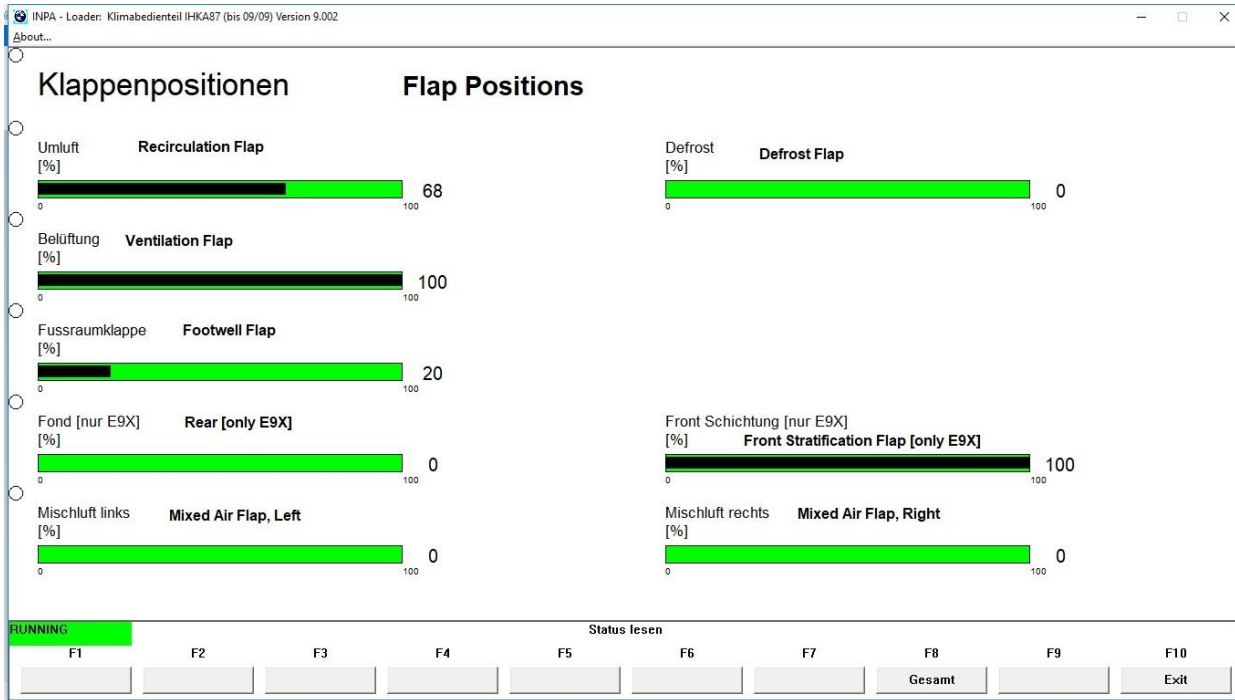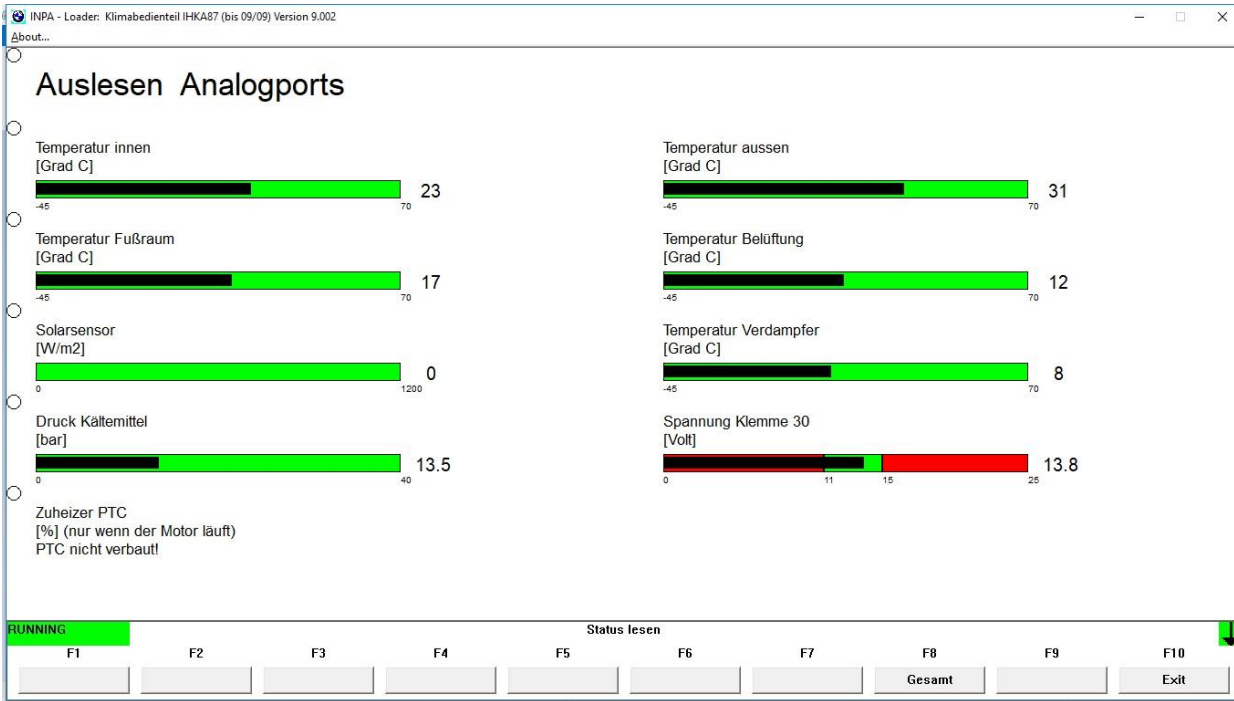

5. F5, F5, Klimasystem (Climate System):

Use & significance of this screen is unknown to me; summary of fault codes? (I had none) ???
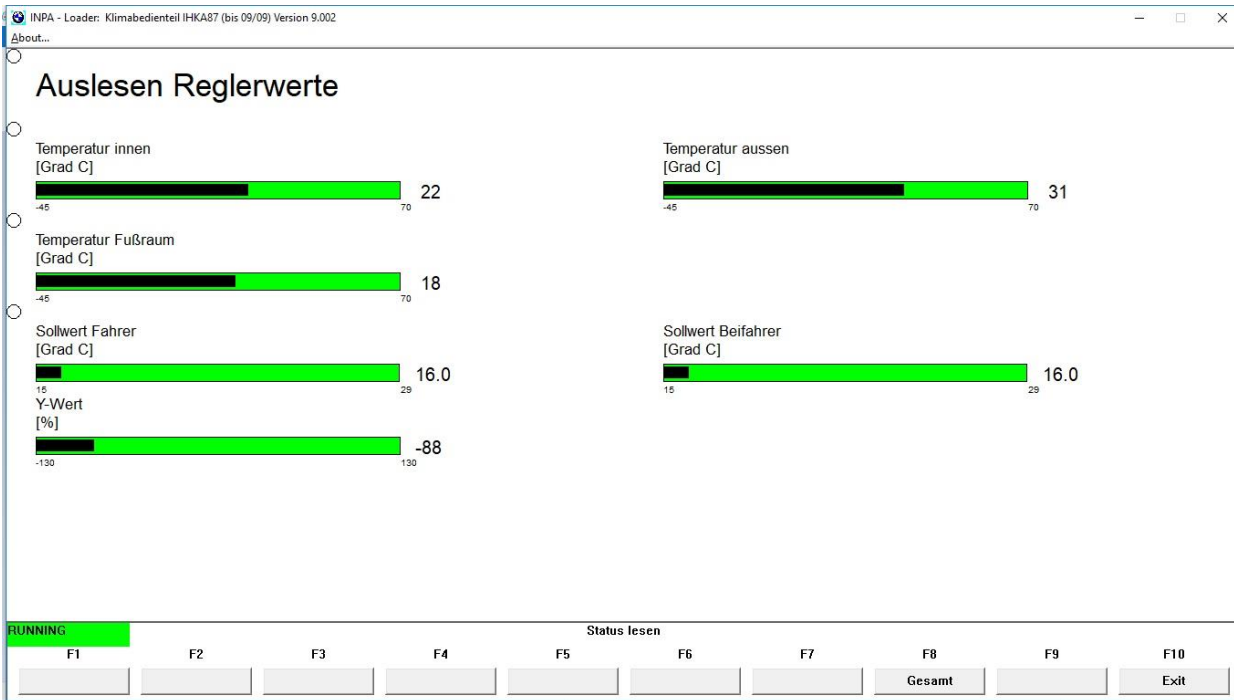Anyone with a CLUE on Use/Significance, please advise.
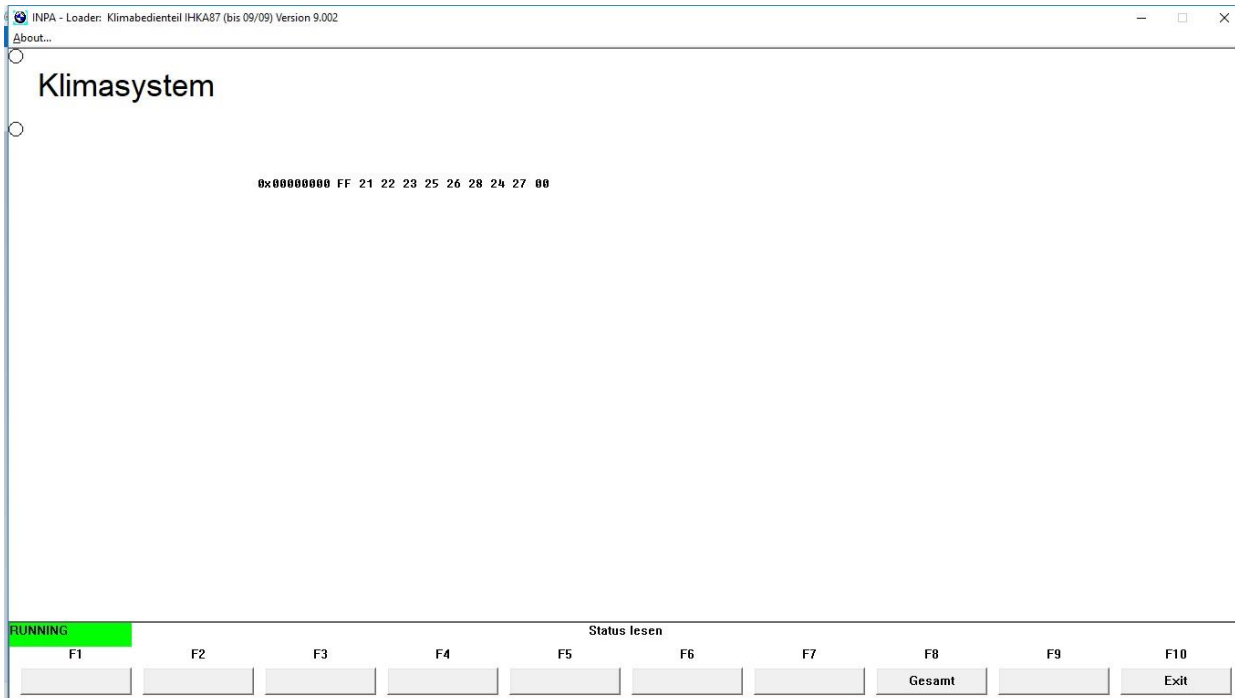
H. F5, Status; Settings: ==MAX Button Pressed== (otherwise panel settings same as "G" above):

1. F5, F1, Analogports:

2. F5, F2, Reglerwerte:

3. F5, F3, Bedientiel (Control Panel Buttons/Settings):

Digital Circles Fill/ Black ONLY while button pressed, as test of button function. Mode changes digitally (On/Off) by pressing button, but circle black ONLY while button pressed. NOT indication of Mode. See LED on button for Mode selected. e.g. Defrost LED is green when Defrost sending all air to Windscreen.

4. F5, F4, Flap Positions (Klappenpositionen):

Shows 0% position of BOTH Mixed Air Flaps (NO air directed through Heater Core) when MAX button is pressed in center of Driver-side Thermostat control.
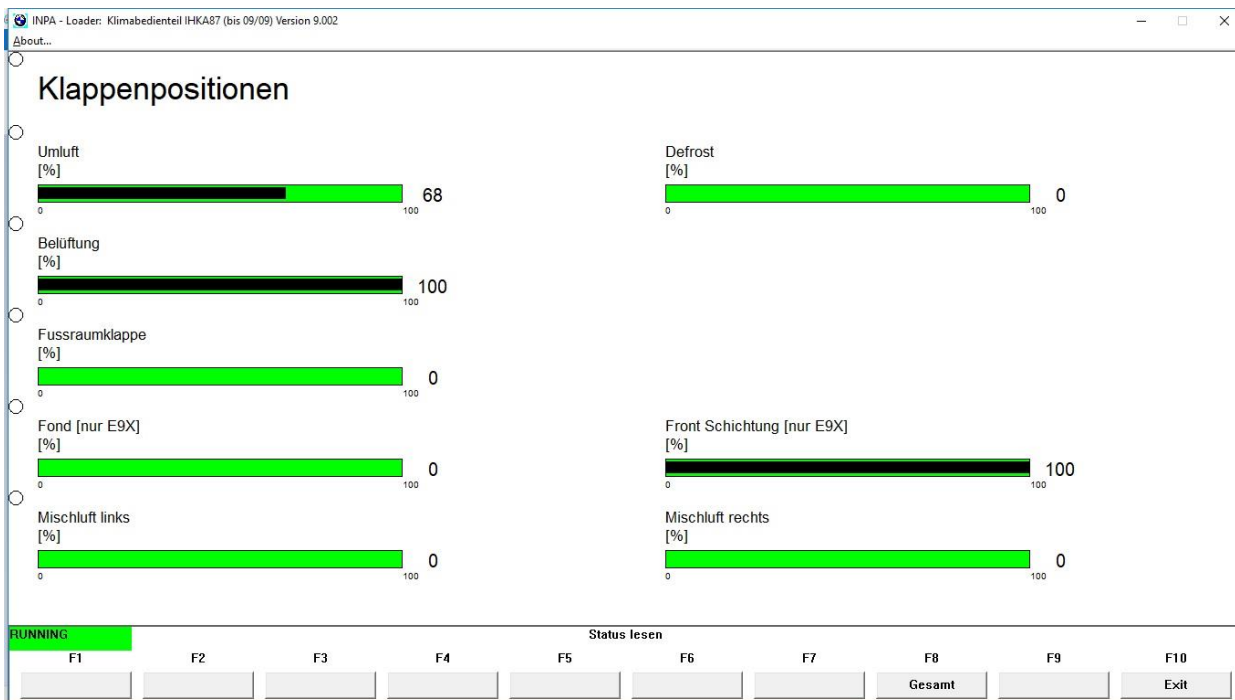
5. <u>F5, F5, Klimasystem:</u>
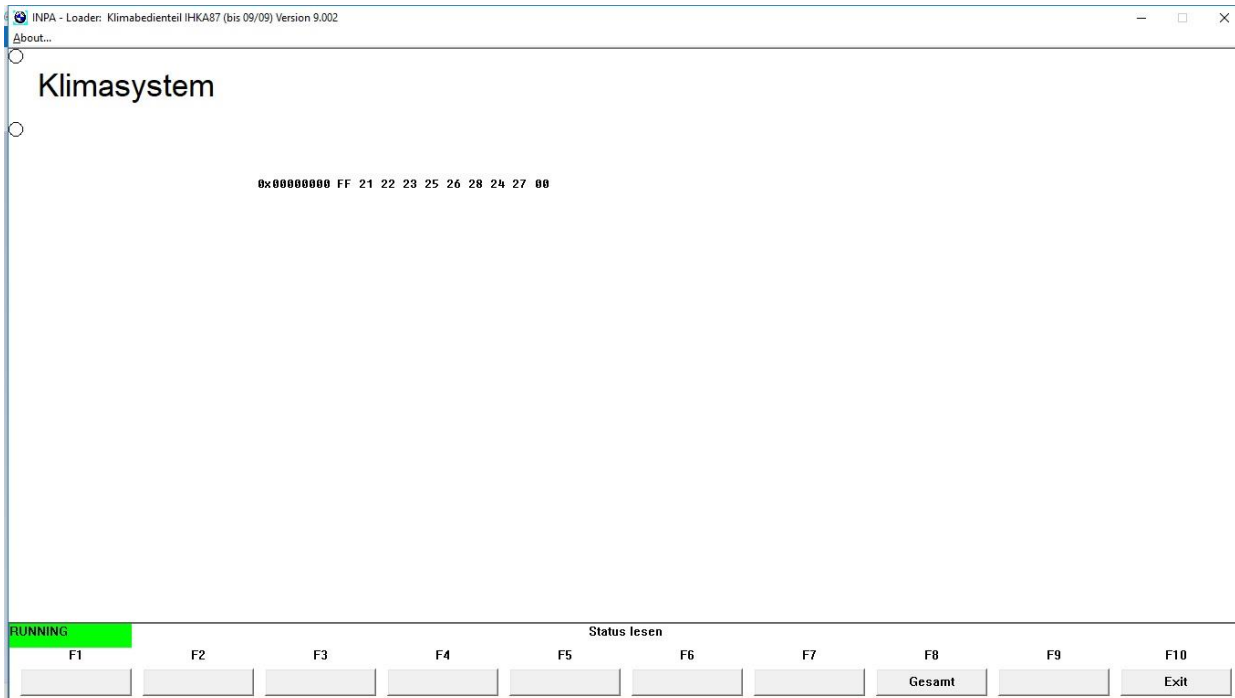
III. <u>Appendix:</u>

A. *<u>Concepts & Definitions:</u>*

Proper **CONCEPT** of how a system works, and WHAT a particular word/phrase/ LABEL means is important, regardless of LANGUAGE used. Most of us need to (A) translate German to English AND ALSO (B) RE-examine our concept of meaning/ application of particular English Technical Terminology. Taking Time to use Google Translate helps those of us who don't understand Technical German to do the former, and starts us thinking about what the English actually means. ISTA as a desk reference helps use do the latter. NO MORE 'Fuzzy Thinking' or 'Thingies'. ☺

B. *<u>Google Translate, German to English:</u>*

https://translate.google.com/#view=home&op=translate&sl=de&tl=en

C. *<u>ISTA as Desk Reference: Documents:</u>*

See separate ISTA Tutorial pdf: "**ISTA as Shop Manual**", linked in same post that links this Tutorial.
ISTA provides such things as SSP Wiring Diagram (Interactive) for Flap Motor wiring, Component Locations (where a particular Sensor or Flap is located), Connector View showing what particular connector looks like along with Pin# identification, so you know what socket to test, and REP Repair Instructions that explain HOW to access a particular component, e.g. what to remove to access the Defroster Flap Motor.

ISTA Documents can be viewed on ANY Windows OS computer, Desktop or Laptop, WITHOUT being connected to the vehicle. Once downloaded & installed, its ALL on YOUR Hard Drive. Approximately 24 GB disk space required for installation of BMW Standard Tools, E89 Datens & Rheingold (ISTA+).