

RADIO CONTROLS

1. On/Off, Volume, Balance

push: on/off (see also on/off-automatic)
turn: adjust volume
pull-turn: adjust balance

2. Fader

push: sink and release the button
turn: adjust fader

3. Bass

push: sink and release the button
turn: adjust bass

4. Treble

push: sink and release the button
turn: adjust treble

11. Release button

push: - release control panel, set will switch off

12. Blink LED - blinking when set off and code active

13. RDS

push: RDS on/off, default=RDS on: programme name will be displayed instead of frequency.
hold: updates FM learn memory

14. TP (see also TA-, PHONE-volume)

push: TP on (TP), start TP (FM-RDS) search if no TP station selected, interrupt CD. during TA
push: - while TP on: TP off ()
push-push: - while CD.mode + TA: TP off and switch back to CD. mode

15. Search up (see also TA-, SD-, PHONE-volume)

push: - while RDS off: search next receivable station (LOC level)
- while RDS+TP off: manual search up
- while RDS on: scroll stations off learn memory up

16. Detachable control panel

set switches off when released

17. Search down (see also TA-, SD-, PHONE-volume)

push: - while RDS off: search next receivable station (DX level)
- while RDS+TP off: manual search down
- while RDS on: scroll stations off learn memory down

18. AS (see also CODE)

push: switches band from U to U-AS e.g. M to M-AS
hold: search for best stations and store them under presets U-AS e.g. M-AS

19. Presets 1...6

push: select stored stations of the preselected band
hold (2 s): store actual station
hold (5 s): switch REG ON/REG OFF for the concerned station, status will be briefly displayed
REG OFF is default, REG ON is briefly displayed after switch on

20. UML (see also SD-Volume)

push: scroll wavebands-U - M - L-U ...
- while CD. mode: station name e.g. frequency of actual station is displayed
for -5 sec.

STEERING WHEEL CONTROLS (SWC) The SWC

works in parallel to the radio controls.

They are recognized by the set (pin A2 of connectorblock) by different voltages.

| | | |
|----|---------------------------------|--------------------|
| + | volume up | 1,28 V \pm 0,1 V |
| - | volume down | 0,73 V \pm 0,1 V |
| o | source selection (radio - CD) | 1,85 V \pm 0,1 V |
| > | search up | 2,43 V \pm 0,1 V |
| < | search down | 3,05 V \pm 0,1 V |
| -> | scroll presets of selected band | 3,66 V \pm 0,1 V |

ADDITIONAL FEATURES

1. On/Off Automatic

Automatic switch on

When the set is switched on it can be switched off and on with the ignition key (default)

This feature can be switched off as follows:

- ignition on, set off
- switch set on while holding 'PRESET 1' and 'PRESET 3' until bleep

Now the set can only be switched on and off with the the on/off button.

Proceed the same way to activate automatic switch on again.

Just before the confirmation bleeps the status IGNI ON or IGNI OFF is briefly displayed

Automatic switch off

You can switch on the set by pushing the on/off button although when the ignition is off.

After one hour it will switch off automatic.

This feature does not depend on the chosen automatic switch on mode.

2. Individual volume adjustment (optional)

You can set the speed dependent volume control in 5 different levels (car dependent):

- push 'UML' for about 3 sec. until bleep, display shows SD-VOL 2 (default value)
- push '<' or '>' to get the wanted volume level (SD-VOL 0 = OFF)
- push 'UML' for about 3 sec. until bleep to store the setting

3. Telefon

If a telephon is connected to the radio, PHONE will be displayed every time the telephon is switched on. Radio and CD playback will be interrupted. The telephon audio signal can be reproduced via the speakers. The telephon volume can be set in 7 different levels (LEVEL -3....LEVEL +3; +/- 7,5 dB):

- switch set on while holding the 'TP' button depressed until bleep, display shows PH-VOL 2 (default value)
- push '<' or '>' to get the wanted volume level
- push 'TP' for about 3 sec. until bleep to store the setting

Telefon has priority over traffic announcement (ta). In case of a ta during a call the name of the TP station name will be displayed instead of PHONE. By pushing the TP' button you make the ta audible. Push TP' again to switch back to telephon audio reproduction.

4. TA Volume

You can set the TA volume in 7 different levels:

- push TP' for about 3 sec. until bleep, display will show TP-VOL 0 (default value)
- push '<' or '>' to get the wanted volume level (LEVEL -3....LEVEL +3)
- push TP' for about 3 sec. until bleep to store the setting.

5. Display adaptation

The radio can be connected to a 8 or 10 digit display.

To toggle between the display modes switch set on while holding PRESET 4 and PRESET 6 depressed until bleep. Status will be displayed.

6. Impuls setting

Depending on the car three different kinds of impulses are generated.

To adapt the set to the corresponding impulses switch set on while holding UML and PRESET 1, 2 or 3 depressed until bleep. Status will be displayed.

Setting 1: 7000 impulses/Km (194 Hz)

Setting 2: 16000 impulses/Km (444 Hz)

Setting 3: 25000 impulses/Km (695 Hz)

8. Power on events

Besides switch on by pushing volume knob or by ignition key the set switches on when:

- a CD is inserted (only when no CD was in before switch off)
- the telephon is switched on. After telephon off the set switches off again, except another power on event happens during the call.

MW tuning step setting

The MW search tuning grids can be adapted to the different bands (EUROPE - 9 KHz, US -10 KHz):
- switch set on while holding PRESET 2 and PRESET 5 depressed until bleep. Status will be displayed.

SECURITY CODE HANDLING AND CONTROL PANEL MATCHING

| Action | Displayed character |
|---|---|
| <u>Activation and deactivation</u> | |
| Push 'AS' while switching set on | CODE (for 3 sec.) — |
| Push presets '1 ...4' | Digits of code number changes |
| Push 'AS' 3 sec. until bleep | Mode information |
| When the Code is activated display briefly shows CODE after every power on. | |
| <u>Code entering after power interruption</u> | |
| Switch power on | SAFE |
| Switch set off | |
| Push 'AS' while switching set on | SAFE (for 3 sec.) - 10 - - - - (10 = number of allowed entry trials) |
| Push presets '1 ...4' | Digits of code number changes |
| Push 'AS' 3 sec. until bleep | Mode information |
| <u>Wrong code</u> | |
| Enter wrong code number 1st | SAFE (10 sec. waiting time) - 9 - - - |
| Enter wrong code number 2nd | SAFE (10 sec. waiting time) - 8 - - - |
| Enter wrong code number 3rd | SAFE (10 min. waiting time) - 7 - - - |
| Enter wrong code number 4th | SAFE (20 min. waiting time) - 6 - - - |
| Enter wrong code number 5th | SAFE (40 min. waiting time) - 5 - - - |
| Enter wrong code number 6th | SAFE (80 min. waiting time) - 4 - - - |
| Enter wrong code number 7th | SAFE (160 min. waiting time) - 3 - - - |
| Enter wrong code number 8th | SAFE (320 min. waiting time) - 2 - - - |
| Enter wrong code number 9th | SAFE (640 min. waiting time) - 1 - - - |
| Enter wrong code number 10th | SAFE (Eeprom to be reloaded !) |

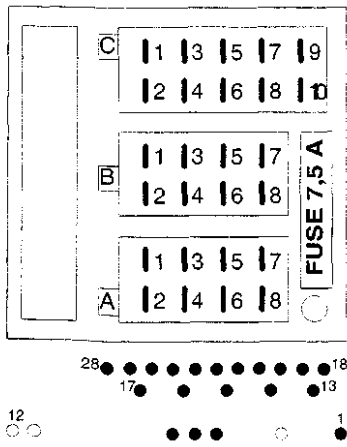
If you have to apply a **new detachable control panel** to a set you have to proceed as described under **Code entering** after the set shows PANEL.

!NOTE

If you have any problems with activation of security code or others which belongs to the code, send the set to:

D-35576
Wetzlar
GERMANY

CONNECTOR BLOCK



| | | | |
|----------------------------|-----|------------------------|-----|
| C1:SDA DISPLAY | >5 | C6: DIAGNOSE | >27 |
| C2:SCL DISPLAY | >26 | C7:NC | |
| C3: TEL. AUDIO IN | >14 | C8:TEL.AUDIO GND | >9 |
| C4:MRQ DISPLAY | >17 | C9:NC | |
| C5:NC | | C10:NC | |
| B1:RR+ | >13 | B5: FL+ | >22 |
| B2: RR- | >25 | B6: FL- | >21 |
| B3: FR+ | >23 | B7: RL+ | >19 |
| B4:FR- | >24 | B8: RL- | >20 |
| A1: GALA | >16 | A5: SWITCHED+ (AERIAL) | >4 |
| A2: STEERING WHEEL CONTROL | >15 | A6: EXT.ILL. | >2 |
| A3:TEL.MUTE | >28 | A7:PERM.+ | >1 |
| A4:IGN.KEY | >3 | A8:GND | >18 |

PARAMETER SETTINGS

With this function several parameters of the car radio can be set to the wishes of the customer.
 To reach the parameter setting menu switch set on while holding 'RDS' depressed for 5 sec. until bleep:
 Testmode A will be executed.
 Push 'RDS' briefly to enter the first parameter P10 and all the next ones up to P55.
 With 'PRESETS 1', 'PRESET 2' and 'PRESET 3' you can change the digits of the parameter values.
 If no key is pushed within 10 sec. set will switch back to testmode A.

| PAR-NO. | Function | PAR-range | value range | default PAR | Grid | default value | EEPROM-location |
|--------------------------|--|-----------|-------------|-------------|---------|---------------|-----------------|
| Tuner adjustments | | | | | | | |
| P10 | TP maximum time out / auto tuning time cycle | 01-0F | 10-150 sec | 06 | 10 sec | 60 sec | A0 45 |
| RDS Parameter | | | | | | | |
| P16 | TP synchronization break down time out cycle | 01-0F | 10-150 sec | 0C | 10 sec | 120 sec | A0 4F |
| P17 | TP-EON acceptance level for TA | 35-C0 | 10-200uV | 8A | * 1 | 36 dBuV | A0 46 |
| P18 | FM memory, non RDS station acceptance level | 35-C0 | 10-200 uV | 8A | * 1 | 36 dBuV | A0 3F |
| P19 | LV = Field strenght level | 00-06 | | 03 | *2 | | A0 42 |
| P20 | MP = Multipath reaction level | 00-06 | | 03 | *2 | | A0 44 |
| P21 | REL = Suppression counter release | 40-C0 | | 60 | *2 | | A0 41 |
| P22 | SUPP = Suppression counter | 10-C0 | | 96 | *2 | | A0 40 |
| P23 | NS = Noise reaction level | 00-06 | | 03 | *2 | | A0 43 |
| P24 | AF check agility static | 11-30 | | 1A | *2 | | A0 4B |
| P25 | AF check agility dynamic | 02-05 | 0,2-0,5 sec | 04 | 0,1 sec | 0,4 sec | A0 4C |
| P26 | Minimum duration between AF checks | 02-14 | 0,2-2,0 sec | 04 | 0,2 sec | 0,8 sec | A0 4D |
| P27 | AF minimum quality base | 5A-80 | | 74 | *2 | | A0 4E |
| Audio controls | | | | | | | |
| P31 | TA bass level | 003-300 | -6dB - +6dB | 003 | 2dB | -6dB | A0 53 |
| P32 | TA treble level | 003-300 | -6dB +6dB | 001 | 2dB | -2dB | A0 54 |
| P33 | TA fader level | 000-600 | -15dB-0dB | 500 | 2,5 dB | -2,5 dB | A0 52 |
| P34 | Telephone bass level | 003-300 | -6dB - +6dB | 002 | 2dB | -4dB | A0 59 |
| P35 | Telephone treble level | 003-300 | -6dB - +6dB | 001 | 2dB | -2dB | A0 5A |
| P36 | Telephone fader level | 000-600 | -15dB-0dB | 500 | 2,5 dB | -2,5 dB | A0 58 |
| P37 | Power on volume level | 00-1A | -80dB - OdB | 06 | *3 | -37 dB | A0 5E |
| Speed dependent controls | | | | | | | |
| P41 | SD-FRQ1 (V1)/+2dBBASS | 00-FF | 0-255 Km/h | 46 | 1 Km/h | 70 Km/h | A0 63 |
| P42 | SD-FRQ 2 (V2) / +2 dB BASS | 00-FF | 0-255 Km/h | 78 | 1 Km/h | 120 Km/h | A0 64 |
| P43 | SD-FRQ 3 (V3) / +2 dB BASS | 00-FF | 0-255 Km/h | 28 | 1 Km/h | 40 Km/h | A0 65 |
| P44 | SD-FRQ 4 (V4) / +2 dB BASS | 00-FF | 0-255 Km/h | 5A | 1 Km/h | 90 Km/h | A0 66 |
| P45 | SD-FRQ 5 (V5) / +2 dB BASS | 00-FF | 0-255 Km/h | 8C | 1 Km/h | 140 Km/h | A0 67 |
| Illumination | | | | | | | |
| P51 | Illumination logic A/B | 00-01 | A-B | 01 | on/off | Logic B | A0 68 |
| P52 | Illumination level X0 | 00-FF | | 30 | *4 | 940 mV | A0 69 |
| P53 | Illumination level Y0 | 00-FF | | 30 | *4 | 18% | A0 6A |
| P54 | Illumination level X1 | 00-FF | | BE | *4 | 3,742 V | A0 6B |
| P55 | Illumination level Y1 | 00-FF | | BE | *4 | 74,5 % | A0 6C |

* 1 see table 'Representation of fieldstrength'

* 2 synthetic values for receiver subsystem

* 3 see table 'volume levels' *4 see figure 'illumination conversion curve'