

BMW G30/F90 Facelift Headlights Adapter

Brief Overview and Schematic Diagrams

Revision 1.00

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Table of contents

Designation	3
Technical description	3
Design and pinout	4
Table 1 «System» connector pinout and designation	5
Connections and coding	6
Adapter connection schematic diagram	7
BDC appearance	8
Appendix 1 (Necessary coding)	9



Before starting coding procedure and connection USB cable to PC from retrofit adapter it is ***strongly recommended to disconnect all chargers equipment*** (car charger from the car and laptop charger from the laptop)!

Ignoring this rule can destroy car equipment or the retrofit adapter.

Designation

BMW G30/F90 Facelift Headlights Adapter is designed to retrofit BMW G30, G90 cars produced before July 2020 with updated (facelift) front optics from cars manufactured in 2020 and newer with full functionality retained.

Technical description

The appearance of the adapter is shown in Fig. 1.

The adapter contains of 18 pin connector for connection to the vehicle systems, two led indicators “CAN1” and “CAN2” to indicate CAN Bus activity and USB connector for firmware update and adapter diagnostic.

Adapter 18 pin connector has the following inputs and outputs:

- "CAN1H" (yellow), "CAN1L" (blue) for connection to the vehicle's K-CAN3 of BDC connector A258_8B.
- “CAN2H” (yellow/black), “CAN2L” (blue/black) for connection to headlight's K-CAN3 bus.
- “Input1” (white/red), for connection to Direction Indicator Left of the vehicle.
- “Input2” (white/black), for connection to Direction Indicator Right of the vehicle.
- input “+12V” (red), adapter positive power wire (all time constant power supply(non interrupt)). ***Very important thing – you must be sure the power is non interrupt.***
- input “GND” (black), adapter ground connection power wire.

Adapter 18 pin connector pinout and designation given in Table 1.

Design and pinout

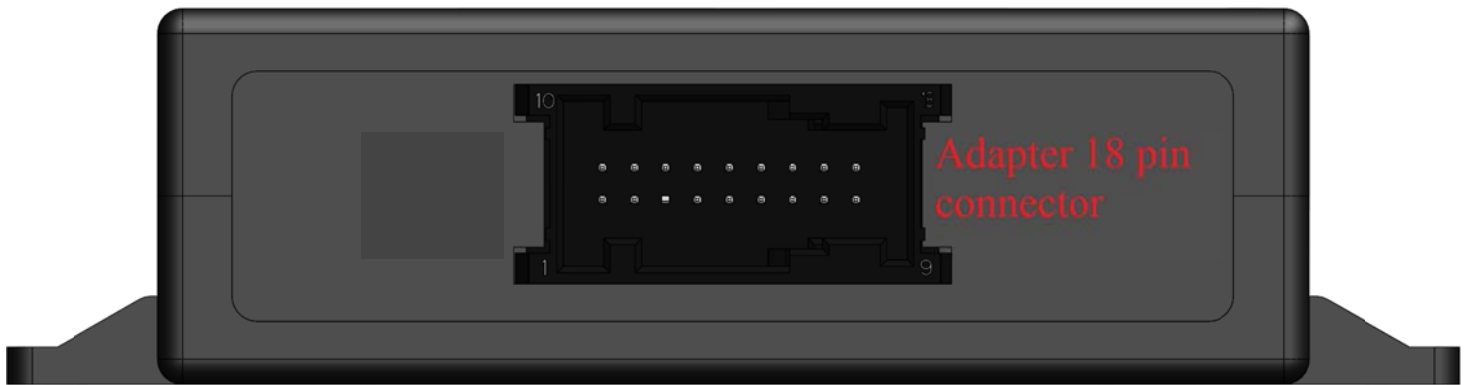


Fig 1a Front view



Fig 1b Rear view

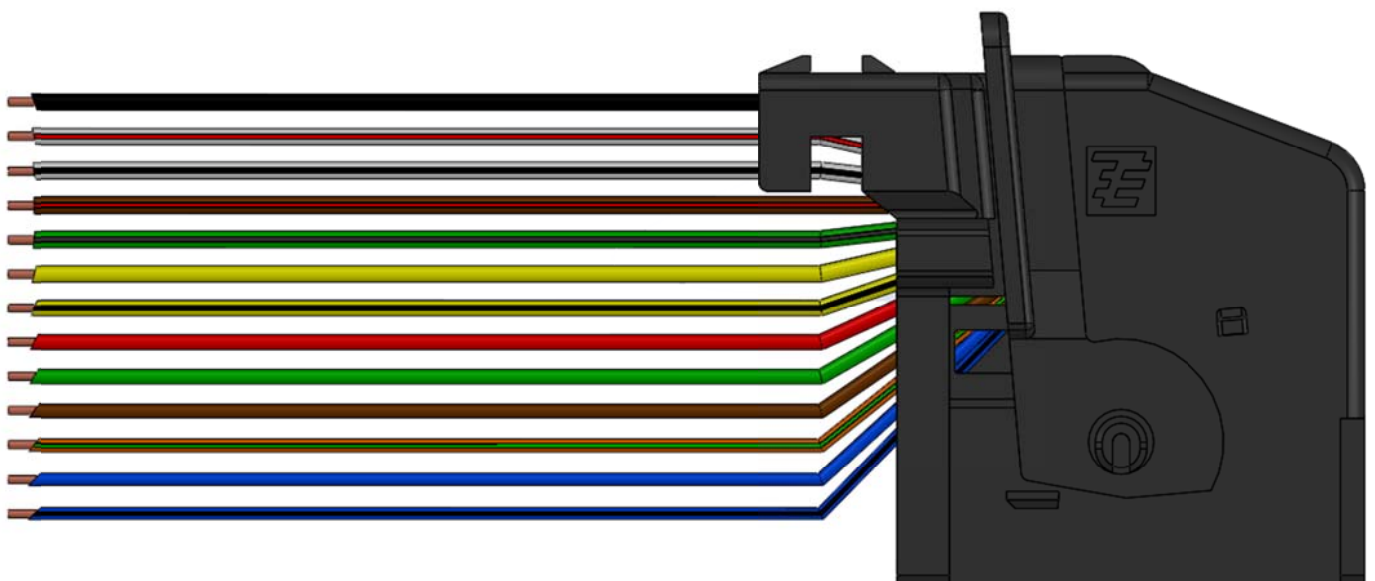


Fig 1c Connector view

Table 1 Adapter 18 pin connector pinout and designation

Pin #	Name	Color	Connection
1	GND	Black	Chassis Ground Point
2	INPUT1	White/Red	Direction Indicator Left
3	INPUT2	White/Black	Direction Indicator Right
4			
5			
6			
7			
8	CAN1H	Yellow	BDC K-CAN3 High
9	CAN2H	Yellow/Black	Hedlight's and tail light's K-CAN3 High
10			
11	+12V	Red	Adapter power supply (all time constant power supply (non interrupt)).
12			
13			
14			
15			
16			
17	CAN1L	Blue	BDC K-CAN3 Low
18	CAN2L	Blue/Black	Hedlight's and tail light's K-CAN3 Low

Connections and coding.

Connection of the " BMW G30/F90 Facelift Headlights Adapter" should to do according to schematic shown in Fig.2, using the supplied cable (Fig.1c). «System» connector pinout and designation you can see at Table 1. Cable consists of 18-pin socket for connecting to the adapter «System» connector and wires for connect to CAN bus, direction indicators and power.

- 1) Connect in parallel CAN1 (yellow(Hi) and blue(Lo)) from the retrofit adapter to the vehicle's K-CAN3 (yellow/brown(Hi) and yellow/black(Lo)) of BDC connector A258_8B (Fig. 3).
- 2) Connect in parallel to connector A258_3B (pin 49) of BDC the white/red wire from retrofit adapter (Left input from direction indicator repeaters) (Fig. 4).
- 3) Connect in parallel to connector A258_3B (pin 37) of BDC the white/black wire from retrofit adapter (Right input from direction indicator repeaters) (Fig. 4).
- 4) Connect Headlight's CAN Bus wires K-CAN2 of the retrofit adapter.
- 5) Connect power 12V according to Adapter connection schematic diagram (Fig.2)
- 6) Perform headlights coding with VIN code from the car where these headlights will be installing, with time criterion – July 2020.
- 7) Perform BDC coding (Appendix 1)

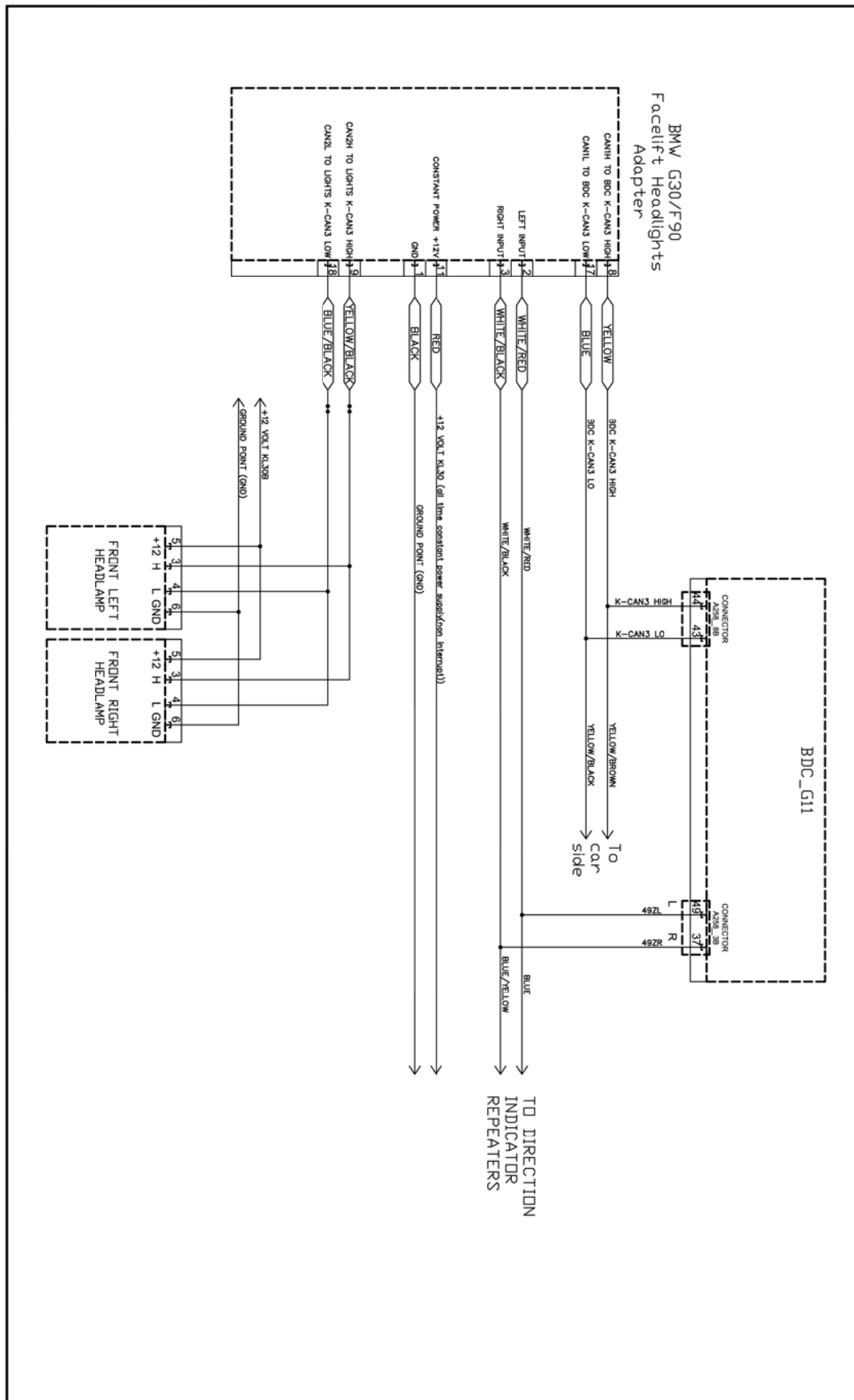


Fig. 2 Adapter connection schematic diagram

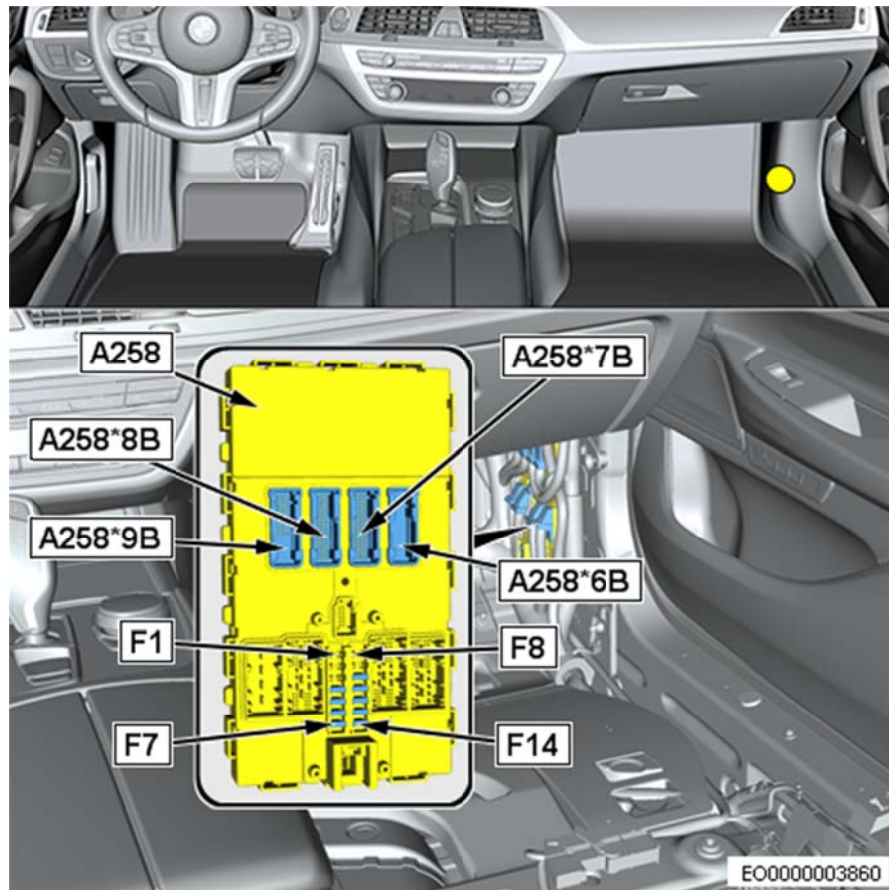


Fig. 3 BDC appearance

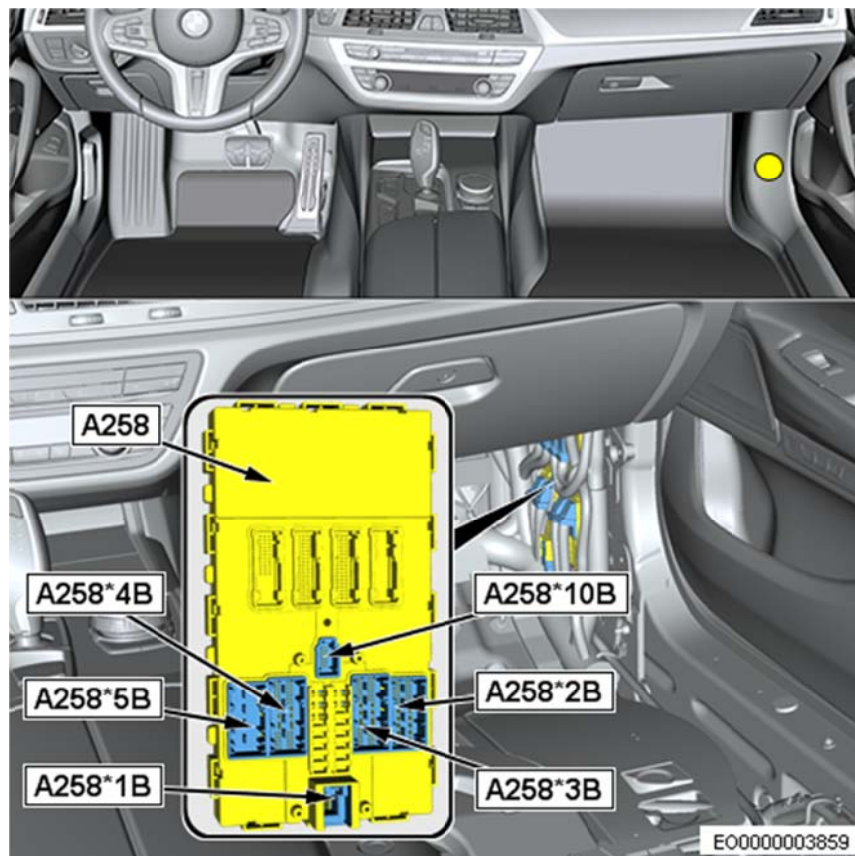


Fig. 4 BDC appearance

Appendix 1 (Necessary coding).

FRA_V_L_BANANA_PROFILE_ID: profil_0 [00]
FRA_V_L_CCM: default, off [00 00]
FRA_V_L_IS_LED: aktiv [01]
FRA_V_L_KALTUEBERWACHUNG: default, nicht_aktiv [00]
FRA_V_L_MIN_PWM: 3% [03]
FRA_V_L_OPENLOAD_SW_THRESHOLD: 110mA [0B]
FRA_V_L_PWM_FREQ: 100Hz, default [00]
FRA_V_L_SPANNUNGSREGELUNG: default, nicht_aktiv [00]
FRA_V_L_UE_SPG_SCHUTZ: nicht_aktiv [00]
FRA_V_L_WARMUEBERWACHUNG: nicht_aktiv [00]
FRA_V_R_BANANA_PROFILE_ID: profil_0 [00]
FRA_V_R_CCM: default, off [00 00]
FRA_V_R_IS_LED: aktiv [01]
FRA_V_R_KALTUEBERWACHUNG: default, nicht_aktiv [00]
FRA_V_R_MIN_PWM: 3% [03]
FRA_V_R_OPENLOAD_SW_THRESHOLD: 110mA [0B]
FRA_V_R_PWM_FREQ: 100Hz, default [00]
FRA_V_R_SPANNUNGSREGELUNG: default, nicht_aktiv [00]
FRA_V_R_UE_SPG_SCHUTZ: nicht_aktiv [00]
FRA_V_R_WARMUEBERWACHUNG: nicht_aktiv [00]
FRA_Z_L_BANANA_PROFILE_ID: profil_0 [00]
FRA_Z_L_CCM: ccm_925 [03 9D]
FRA_Z_L_IS_LED: aktiv [01]
FRA_Z_L_KALTUEBERWACHUNG: default, nicht_aktiv [00]
FRA_Z_L_MIN_PWM: 3% [03]
FRA_Z_L_OPENLOAD_SW_THRESHOLD: 100mA, default [0A]
FRA_Z_L_PWM_FREQ: 100Hz, default [00]
FRA_Z_L_SPANNUNGSREGELUNG: default, nicht_aktiv [00]
FRA_Z_L_UE_SPG_SCHUTZ: dimmed [02]
FRA_Z_L_WARMUEBERWACHUNG: nicht_aktiv [00]
FRA_Z_R_BANANA_PROFILE_ID: profil_0 [00]
FRA_Z_R_CCM: ccm_924 [03 9C]
FRA_Z_R_IS_LED: aktiv [01]
FRA_Z_R_KALTUEBERWACHUNG: default, nicht_aktiv [00]
FRA_Z_R_MIN_PWM: 3% [03]
FRA_Z_R_OPENLOAD_SW_THRESHOLD: 100mA, default [0A]
FRA_Z_R_PWM_FREQ: 100Hz, default [00]

FRA_Z_R_SPANNUNGSREGELUNG: default, nicht_aktiv [00]

FRA_Z_R_UE_SPG_SCHUTZ: dimmed [02]

FRA_Z_R_WARMUEBERWACHUNG: nicht_aktiv [00]