

# oMux.36x41


Multiplexer

oMux.36x41, a part of the Multiplexer product family, is a Body Control Unit that fulfills essential control functions such as door control, signaling, lamp operation, wiper motor control, air conditioner motor control, and window raising/lowering in vehicles. It can be installed in different parts of the vehicle and provide real time information via CAN-Bus communication interface.

Due to its capability to execute simultaneous operations, it provides the most cost-effective and economical solution for the vehicle. It can operate 7 oMux devices on the same CAN-Bus with identical embedded software due to its master/slave operation capability. This allows seamless integration and efficient management of multiple oMux units within the vehicle system.

With the user-friendly oMux.Designer development GUI application one can effortlessly create user-defined scenarios using functional block diagrams. Real-time software updates, diagnostics, and software retrieval processes can be performed via CAN-Bus, ensuring efficient operations and hassle-free maintenance. With the ability of the CAN-Bus communication interface, embedded software updates can be transmitted to all devices concurrently without uninstalling them from the vehicle.

**9-36 VDC**  
**Operating Voltage**  
 (Applicable to 12/24 V Systems)




**36 Input**  
 (28 Digital Input  
 8 Analog Input)



**41 Output**  
 (30 High Side, 8 Half Bridge  
 3 Sensor Supply)



**Sensor Supply**  
 (5V Output, 9V Output,  
 1A Current Output)



**Wake Up via CAN and  
 Digital Input**



**3x CAN Interface**  
 (Protocol SAE J1939)



**397 mm x 167 mm x 50 mm**  
**Dimensions**



**-40 °C ~ +85 °C**  
**Operating Temperature**



## Supply Characteristics

Input Voltage Range	9-36 V
Overvoltage	36 V
Current (24 V Operation Mode)	30 mA
Current (24 V Sleep Mode)	3 mA
Overvoltage (5 minutes)	36 V
Vbb_Logic Current (For every connector)	0.05 - 1 A
Vbb1 Current (For every connector)	40 A
Vbb2 Current (For every connector)	40 A
Vbb3 Current (For every connector)	20 A
Vbb4 Current (For every connector)	20 A

## 5V Supply Characteristics

Input Voltage Range (5 V Output)	9-36 V
Overvoltage	36 V
Output Voltage Range (5 V Output)	5 V
Output Voltage Accuracy	6%
Output Current	1000 mA

## 9V Supply Characteristics

Input Voltage Range (9 V Output)	14-36 V
Overvoltage	36 V
Output Voltage Range (9 V Output)	9 V
Output Voltage Accuracy	6%
Output Current	1000 mA

## 1A Current Driver Characteristics

Input Voltage Range	0-Vbat V
Overvoltage	36 V
Output Voltage Range	9 V
Output Voltage Accuracy	6%
Output Current	1000 mA

## Digital Input Characteristics

Input Voltage Range	0-Vbat V
Overvoltage	36 V
Inductive Load Protection	Available
Pull-up/down Resistor	47 K $\Omega$
Pin's Capacitance	0.1 $\mu$ F
Pull-up/down (When Active)	10 ms

## Digital Frequency Input Characteristics

Input Voltage Range	0-10V
Overvoltage	12 V
Inductive Load Protection	Available
Frequency	0-50 kHz
Resolution	10 Bit

## Analog Inputs Characteristics

Input Voltage Range	0-Vbat V
Overvoltage	36 V
Inductive load Protection	Available
Pin's Capacitance	0.1 $\mu$ F
Resolution	8 Bit

## 10A "High-Side" Output Features with Current Measurement

Switchable Voltage Range	9 - 36 V
Output Current	10A
ON state Output Resistance	16 m $\Omega$
Overvoltage	36 V
Internal Flyback Diode	Available
Inductive Impact Protection	750 V (Peak)

## 2.5A/10A "Half-Bridge" Output Characteristics

Switchable Voltage Range	9 - 36 V
Output Current	-2.5 ~ +10 A
"High-Side" Output ON Resistor	16 m $\Omega$
"Low-Side" Output ON Resistance	50 m $\Omega$
Overvoltage	36 V
Internal Flyback Diode	Unavailable
Inductive Impact Protection	750 V (Peak)

## 2.5A/2.5A "Half-Bridge" Output Characteristics

Switchable Voltage Range	9 - 36 V
Output Current	-2.5 ~ +2.5 A
"High-Side" Output ON Resistor	100 m $\Omega$
"Low-Side" Output ON Resistance	50 m $\Omega$
Overvoltage	36 V
Internal Flyback Diode	Unavailable
Inductive Impact Protection	750 V (Peak)

## 10A "High-Side Pwm" Output Features with Current Measurement

Switchable Voltage Range	0 - 36 V
Output Current	10A
ON state Output Resistance	6.7 mΩ
Overvoltage	36 V
PWM Frequency	0-10kHz
PWM Resolution	1%
Internal Flyback Diode	Available
Inductive Impact Protection	750 V (Peak)

## 2.5A "High-Side Pwm" Output Features with Current Measurement

Switchable Voltage Range	9 - 36 V
Output Current	10A
ON state Output Resistance	565 mΩ
Overvoltage	36 V
PWM Frequency	0-50kHz
PWM Resolution	1%
Internal Flyback Diode	Available
Inductive Impact Protection	750 V (Peak)

## CAN Characteristics

Overvoltage protection	-58 ~ +58 V
Bit Rate	50 - 1000 kbps
J1939 Compatibility	Available
Internal programmable Termination Resistor (120Ω)	Available

## CAN Characteristics

Battery Short Circuit (Sensor Supply =Battery Voltage)	When the short circuit is over, the Sensor Supply Voltage returns.
Ground Short Circuit (Sensor Supply =Ground)	When the short circuit is over, the Sensor Supply Voltage returns.
Overcurrent (Sensor Supply =Ground)	When the overcurrent condition is over, the Sensor Supply Voltage returns.

## Environmental Conditions

Operating Temperature	-40 °C ~ +85 °C
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