

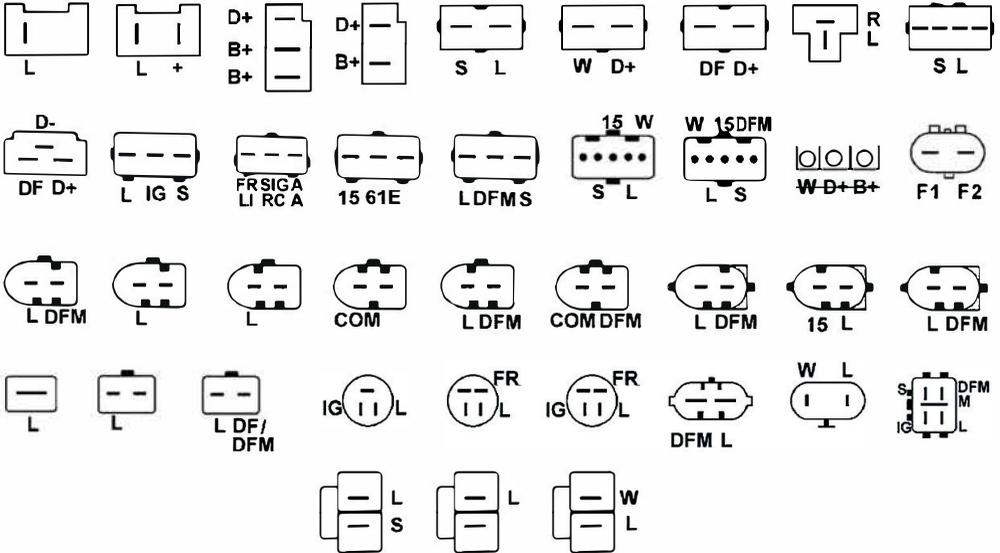
## Connection Terminals of Alternators

Symbols	Functional purpose	Connection
B+	Battery (+)  (Ignition) Input for switch starting	B+
30		
A		
IG		
15		
AS	Alternator Sense	B+
BVS	Battery Voltage Sense	
S	(Sense) Input for voltage comparison at control point	
B-	Battery (-)	B-
31		
E	(Earth) Earth, battery (-)	
D+	Used for connection to an indicator lamp that transfers initial driving voltage, and indicates alternator operability	L/D+
I	Indicator	
IL	Illumination	
L	(Lamp) Output for alternator operability indicator lamp	L/D+
61		
FR	(Field Report) Output for load control on an alternator by engine management block	DFM
DFM	Digital Field Monitor	
M	Monitor	
LI	(Load Indicator) Same as FR, but with universal signal	
D	(Drive) Input of voltage regulator control with terminal P-D Mitsubishi (Mazda) and Hitachi (Kia Sephia 1997-2000)	D
D	(Digital) Input of code voltage installation on American Ford, same as SIG	SIG
RC	(Regulator Control) same as SIG	
SIG	(Signal) Input of code voltage installation	

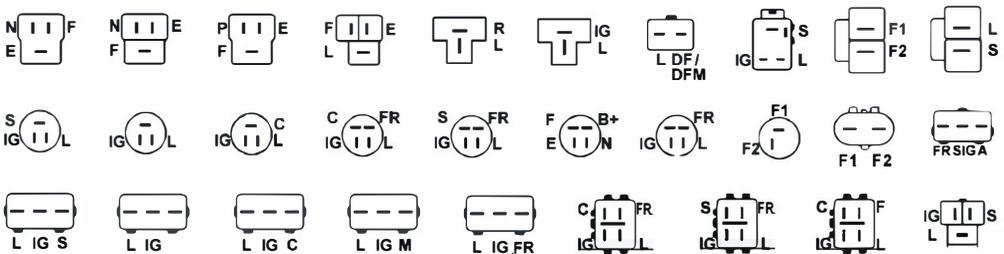
RVC(L)	(Regulated Voltage Control) Similar to SIG, but voltage change ranges from 11.0 V to 15.5 V. Control signal is sent to L terminal	
C	(Communication) Voltage regulator input to control engine operation block. Japanese cars	C
G		
RLO	(Regulated Load Output) Input to control stabilizing voltage with range from 11,8 to 15 V (TOYOTA)	RLO
COM	(Communication) General term for physical interface, alternator control and diagnostics. Protocols of use: BSD (Bit Serial Device), BSS (Bit Synchronized Signal) or LIN (Local Interconnect Network)	COM
LIN	Direct indication on control interface and alternator diagnostics, conducted under protocol LIN (Local Interconnect Network)	
DF	Voltage adjustment output	F67
F		
FLD		
67		
P	Output of one of alternator stator windings. Used for measuring alternator driving voltage	
S		
STA		
Stator		
W	(Wave) Output of one of alternator stator windings for connection of tachometers in diesel engine cars	
N	(Null) Output of average stator winding point. Usually used to regulate alternator operability with mechanically regulated voltage by an indicator lamp	
D	(Dummy) Blank, no connection, mostly in Japanese cars	
N/C	(No connect) No connection	
Options of LRC voltage regulators	(Load Response Control) Function of voltage regulator response delay on load increase on an alternator. Delay duration ranges from 2,5 to 15 seconds. On increasing the load (lights, cooler fan on), a voltage regulator adds driving voltage smoothly, ensuring stability of engine drive rotation. Remarkably seen under idle running	

## Sockets of Alternators

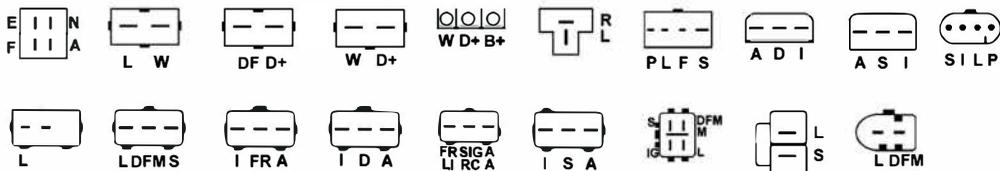
### Bosch



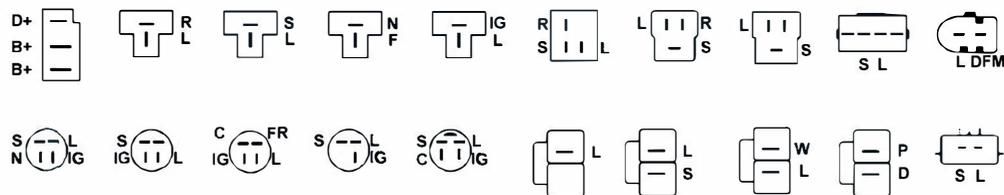
### Denso



## Ford/Lucas



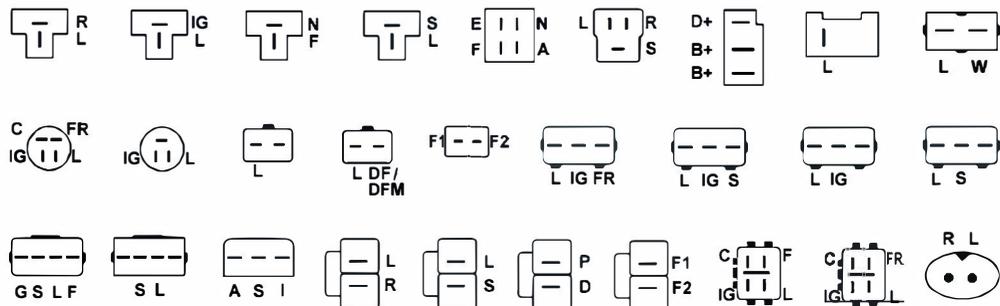
## Hitachi



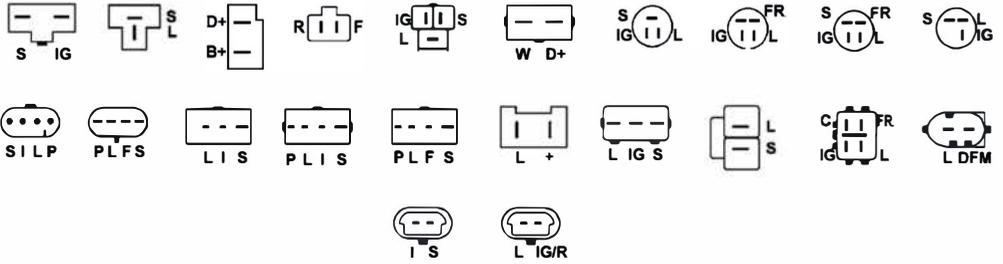
## Magneti Marelli



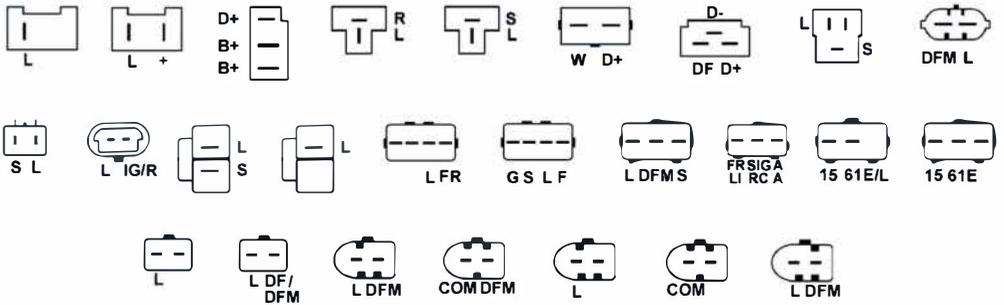
## Mitsubishi



## Delco Remy

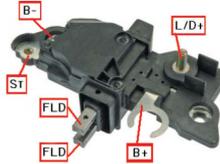


## Valeo

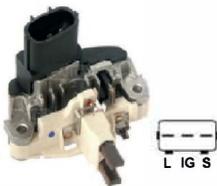
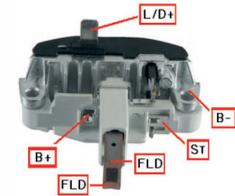
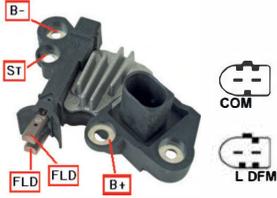


# Connection of Voltage Regulators to the Test Bench

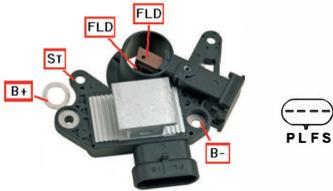
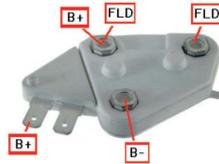
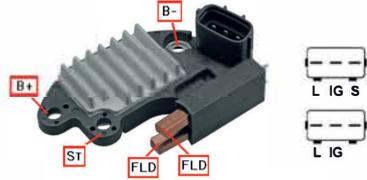
## BOSCH



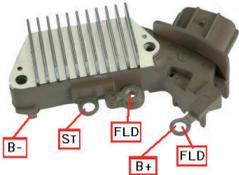
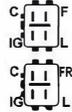

# BOSCH



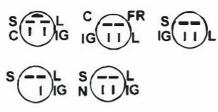
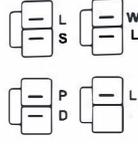
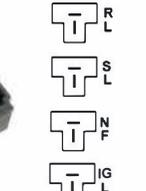
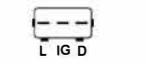
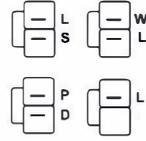
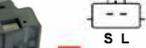
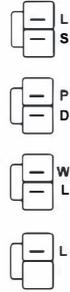
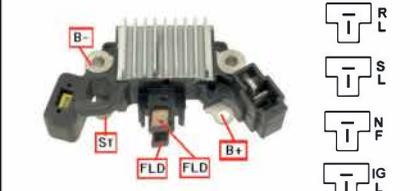
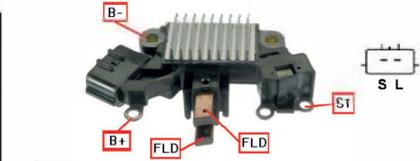
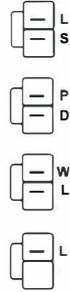
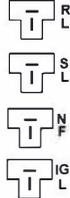
# DELCO REMY



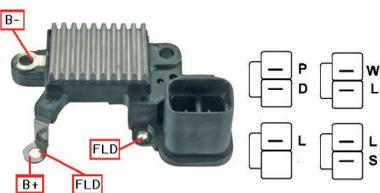
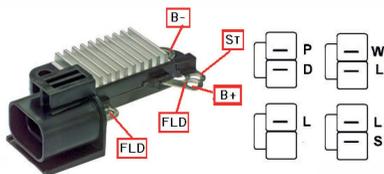
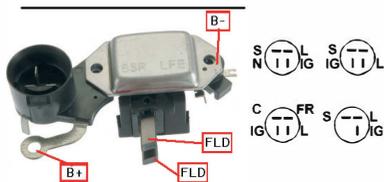
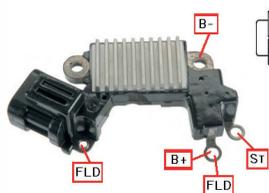
# DENSO



# HITACHI



# HITACHI

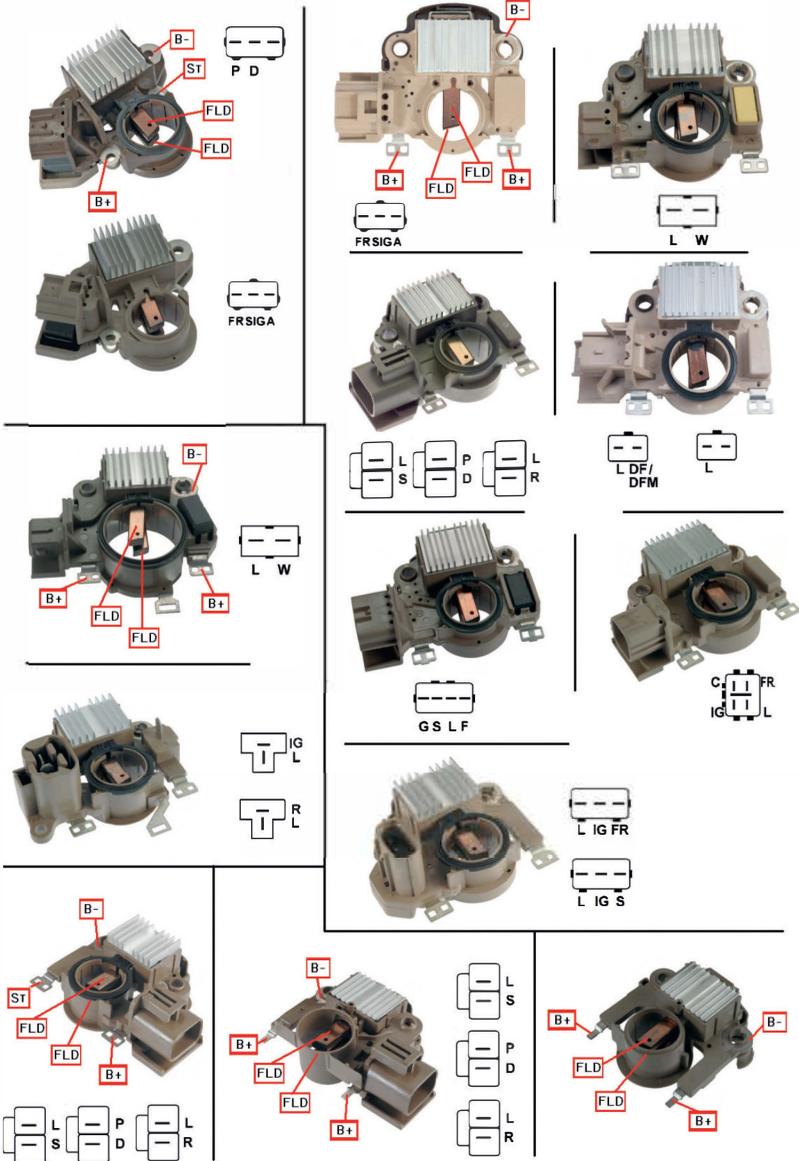


# MAGNETI MARELLI

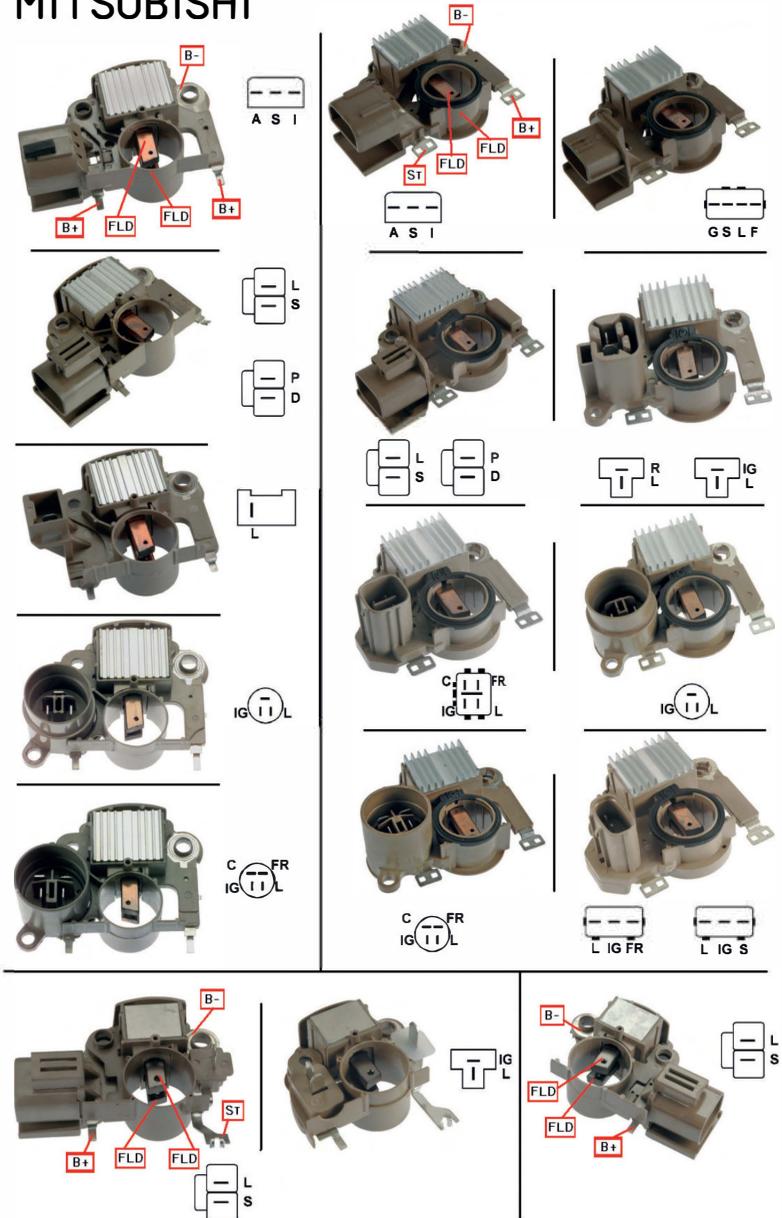


FRS  
LI  
RCA

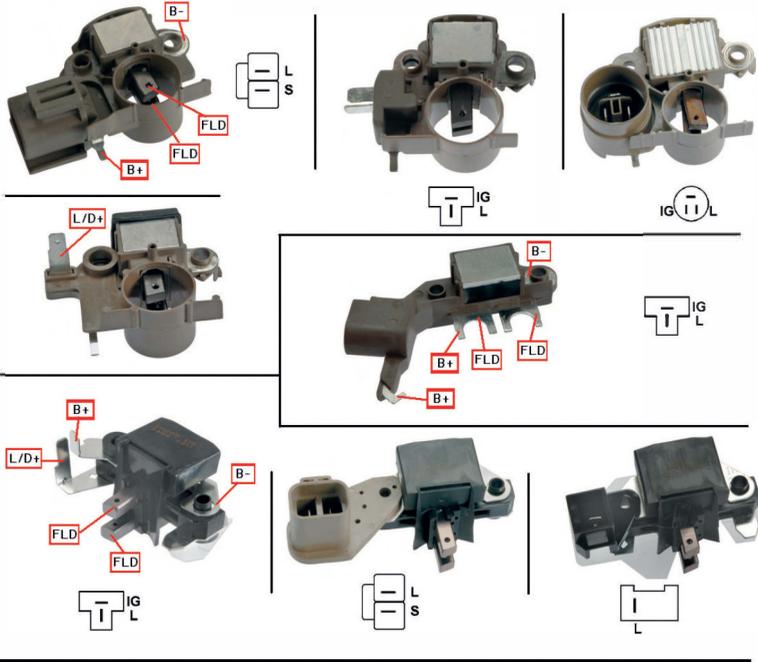
# MITSUBISHI



# MITSUBISHI



# MITSUBISHI



# VALEO

