Syvecs LTD GDI12 Channel GDI Driver Owner's Manual

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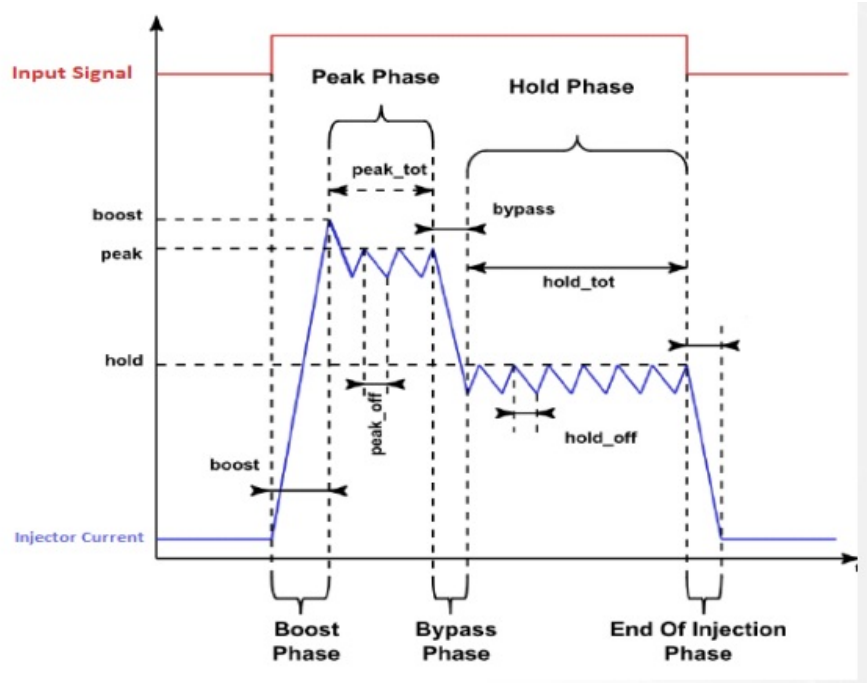
GDI12 Driver

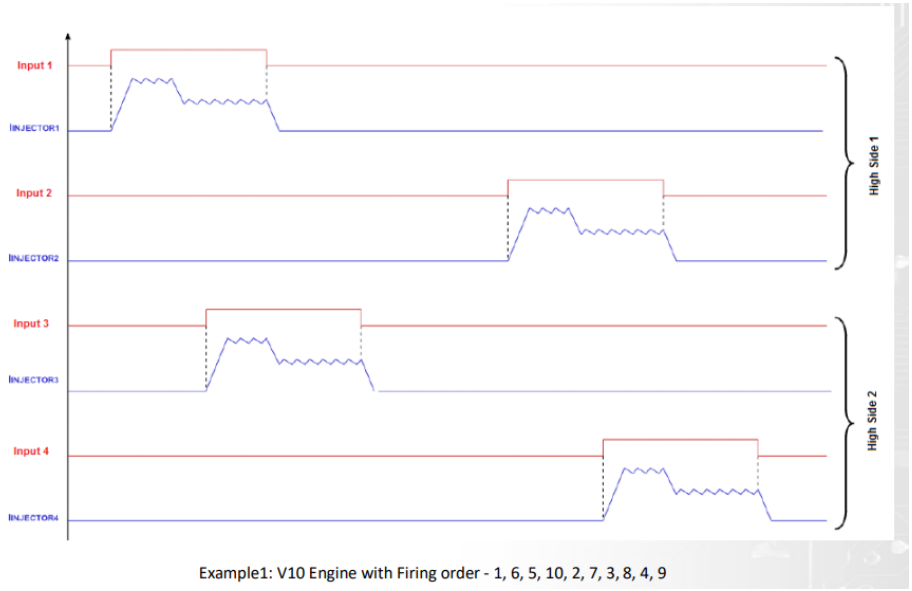
This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.
Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.
Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.**Support@Syvecs.com**

The Syvecs 12 Channel GDI Driver allows 12 GDI Injectors to be driven all from one box, designed to work with all GDI
Solenoid injectors including parts from VAG Group, Ford, GM and Bosch via Updatable Software which can be flashed to the
Unit via a USB in the field BUT as the unit is sealed on shipping its best best done at build-time before shipping.
Designed to work with all types of Engine Management system, the input stage of the driver for each GDI Injector output can receive either IGBT (Pull to Ground) or TTL (5v).
Packaged in a lightweight CNC billet aluminium case with a waterproof 35way AMP Connector.
Default Configuration = 10Amps Boost @ 65v, 6Amps Peak, 4Amps Hold
Maximum available current 20Amps
Adjustment of any of the following parameter can be done to suit any Solenoid Injector.

Parameter	**Description**
Boost	Current threshold in Boost Phase
Peak	Current threshold in Peak Phase
Hold	Current threshold in Hold Phase
Peak_Off	Fixed time for high side switch off in Peak phase
Peak_TOT	Fixed time for end of Peak phase
Bypass	Fixed time for Bypass phase
Hold_Off	Fixed time for high side switch off in Hold phase
Hold_TOT	Fixed time for end of Hold Phase (timeout)



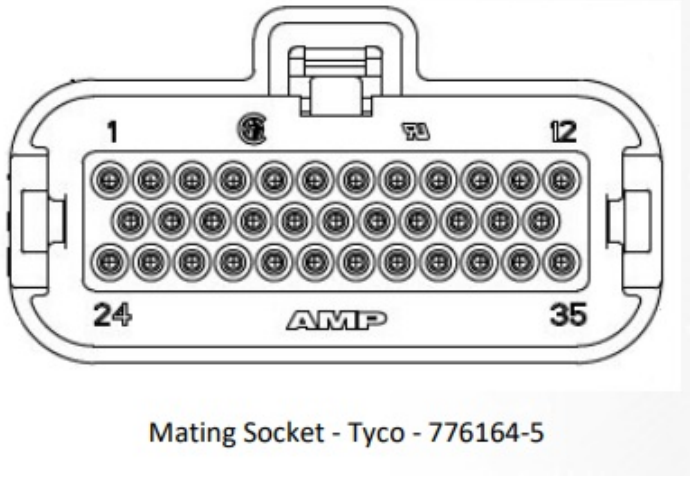
Each High Side Driver output has a current sensor present in the circuit which means that 2 injectors can't be driven at the same time on each High Side output so it's important to assign the firing points of each Injector carefully.



Example1: V10 Engine with Firing order - 1, 6, 5, 10, 2, 7, 3, 8, 4, 9

Example1: V10 Engine with Firing order – 1, 6, 5, 10, 2, 7, 3, 8, 4, 9
Best to Assign as below where the spacing between each Injector on one High side is 360 which is more than enough required injection time for a Direct injection engine.

HS1,2 – Injector 1 and 7
HS3,4 – Injector 6 and 3
HS5,6 – Injector 5 and 8
HS7,8 – Injector 10 and 4
HS9,10 – DI Pump1 & 2 as Default HS11, 12 – – Injector 2 and 9
Example2: V6 Engine with Firing Order – 1, 2, 3, 4, 5, 6
HS1,2 – Injector 1 & 4 HS3,4 – Injector 2 HS5,6 – Injector 3 HS7,8 – Injector 5
HS9,10 – DI Pump1 & 2 as Default HS11, 12 – Injector 6



Mating Socket - Tyco - 776164-5

Pinouts

Pin	Name	Notes
1	LS1	Injector Low Side Output 1
2	LS2	Injector Low Side Output 2
3	LS3	Injector Low Side Output 3
4	LS4	Injector Low Side Output 4
5	LS5	Injector Low Side Output 5
6	LS6	Injector Low Side Output 6
7	LS12	Injector Low Side Output 12
8	LS11	Injector Low Side Output 11
9	LS10	DI Pump2 Low Side Output / Injector Low Side Output 10

10	LS9	DI Pump1 Low Side Output / Injector Low Side Output 9
11	LS8	Injector Low Side Output 8
12	LS7	Injector Low Side Output 7
13	Input 1	Output 1 Input Signal (IGBT Signal Required as Default)
14	Input 2	Output 2 Input Signal (IGBT Signal Required as Default)
15	Input 3	Output 3 Input Signal (IGBT Signal Required as Default)
16	Input 4	Output 4 Input Signal (IGBT Signal Required as Default)
17	Input 5	Output 5 Input Signal (IGBT Signal Required as Default)
18	KLINE	Diagnostics for Internal Use
19	Input 11	Output 11 Input Signal (IGBT Signal Required as Default)
20	Input 10	Di Pump2 Input Signal / Output 10 Input Signal
21	Input 9	Di Pump1 Input Signal / Output 9 Input Signal
22	Input 8	Output 8 Input Signal (IGBT Signal Required as Default)
23	Input 7	Output 7 Input Signal (IGBT Signal Required as Default)

24	VBAT1	12V Supply for HS Outputs 1-6
25	HS1,2	High Side Injector + to Pair with Outputs 1,2 Low Side
26	PWRGND	Ground – Must be Connected
27	HS3,4	High Side Injector + to Pair with Outputs 3,4 Low Side
28	HS5,6	High Side Injector + to Pair with Outputs 5,6 Low Side
29	Input 6	Output 6 Input Signal (IGBT Signal Required as Default)
30	Input 12	Output 12 Input Signal (IGBT Signal Required as Default)
31	HS11,12	High Side Injector + to Pair with Outputs 11,12 Low Side
32	HS9,10	DI Pump2 High Side / High Side Injector + to Pair with Outputs 9,10 Low Side
33	PWRGND	Ground – Must be Connected
34	HS7,8	High Side Injector + to Pair with Outputs 7,8 Low Side
35	VBAT2	12V Supply for HS Outputs 7-12

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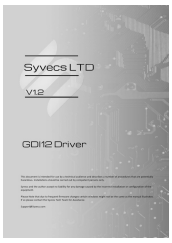

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