

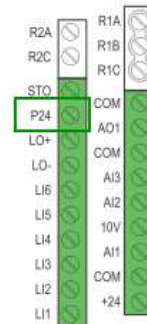
### P24 terminal

To connect the External 24Vdc supply to the ATV32 / ATV320 / ATV32 / ATV320 0 control bloc, the P24 input have to be used.

The P24 in ATV32 / ATV320 is an input and output.

When there is no external supplies connect to this input, the P24 is an output and deliver 24Vdc.

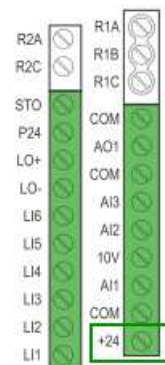
When there is external supplies connect to this input, the P24 become an input and the drive is supply by the external input.



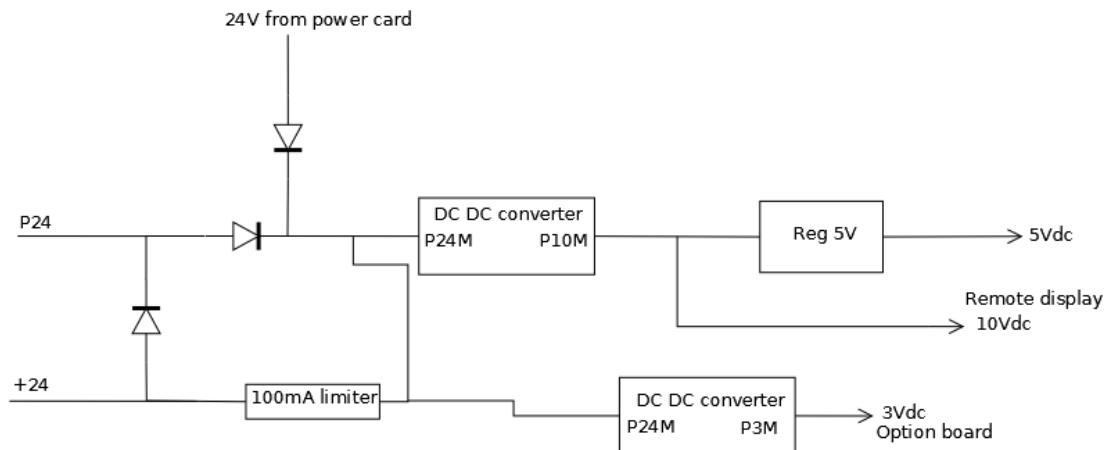
### +24Vdc terminal

The +24Vdc terminal is used to provide 24V to the drive logic input.

This is an Output. Through this +24Vdc the drive will provide 24Vdc supply. The external 24Vdc should not be connected here.



### Simplified schematic of internal 24Vdc



- **When No main supply is present on Drive**

External 24Vdc can be providing on P24 terminal. In this case the drive internal voltage (10V, 5V or 3V) will be base on this external supply.

- **When the drive main supply is connected**

- If there is no external 24vdc:

The drive provides supplied 24Vdc from power card. In this case the drive internal voltage (10V, 5V or 3V) will be base on this internal 24Vdc coming from power stage.

- If there is external 24Vdc connected on P24 terminal:

The voltage used for DC converter will depend of the level of internal 24Vdc (from power stage) and the level of external 24Vdc connected on P24.

The voltage used will be the highest. So to avoid potential issue with external 24Vdc with several drive connected in parallel, it's mandatory to used external 24Vdc higher that the internal 24Vdc.

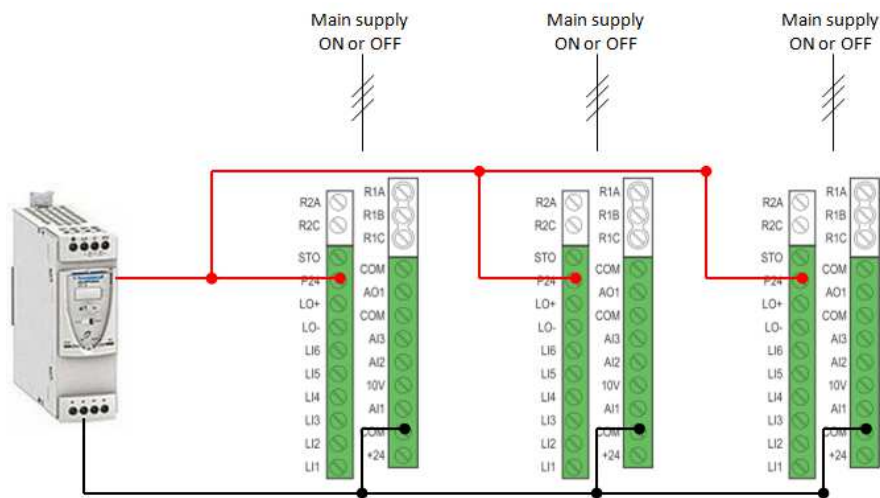
Note: the P24 voltage provide by power stage will be +24Vdc (-15% + 20%)

### Connection of external 24Vdc to have working communication cards

As soon as the external 24Vdc provide 24Vdc to the drive, the P24 become an input. This is right also if you have several drive connected to one external 24Vdc. The P24, does not provide supply if there is already an external supply connected. It's input or output.

The external 24Vdc have to be connected to the entire ATV32 / ATV320 P24 terminal.

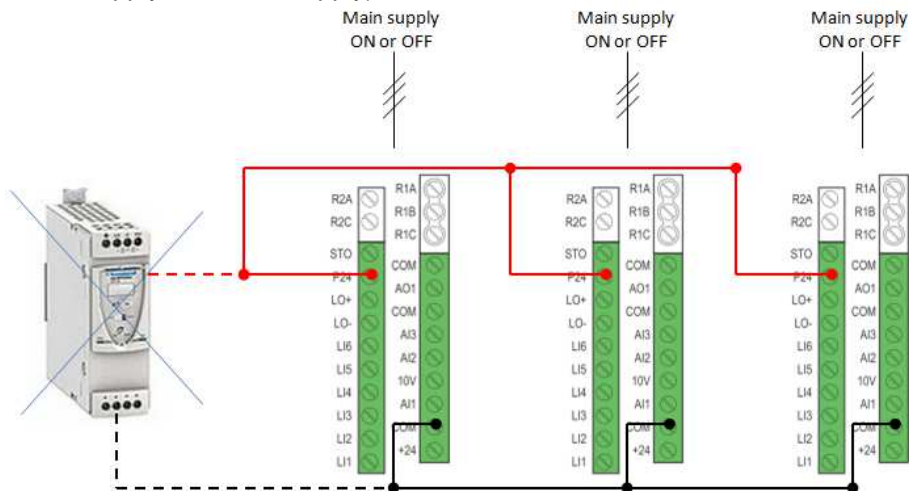
#### Schematic for external 24Vdc connection



As soon as external 24Vdc is ON, the Main supply can be OFF or ON on all the drive. But when the external 24Vdc is OFF, it's important to not have one drive or more main supply ON.

#### To avoid supplying drive main power and power OFF the external 24Vdc

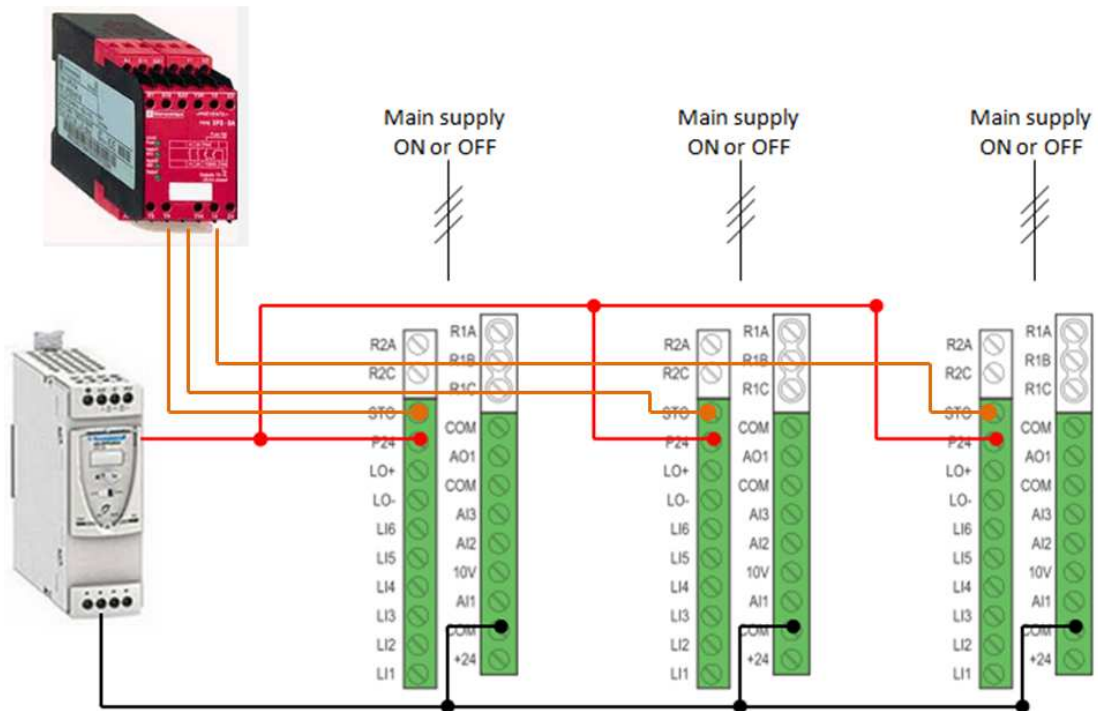
Like explain before, the P24 can be input or output. So if you connect several drives with P24 without external 24Vdc, you will have one drive trying to supply the control of another drive (When drive is supply with main supply).



With this type of schematic (external 24Vdc OFF), one drive will try to supply another drive. This could work but will be related to the consumption because P24 can provide 24Vdc up to 100mA. You could have too much consumption on the other drive; it will lead to shut down the drive internal 24vdc.

### With STO

With STO, there is no change on the 24Vdc connection.  
But one drive STO must be connected on one output of safety module.



### To resume on external 24Vdc connection

- External 24Vdc supply should be connected on the P24 drive terminal.
- The P24 is input/output, so take care to the voltage level of external 24Vdc. This voltage level must be higher than the drive internal 24Vdc.
- Do not power OFF the external 24Vdc when one/several Drives are power by the main voltage.
- One drive STO must be connected on one output of safety module.