It has the ability to transmit/receive data at 250kbps(bus rate)

29-bit can extension and redefine them to get the ID's of different parameters sent every 50ms

11-bit identifier and 18-bit identifier extension, these are further divided into

1) First 8 bits(LSB) tell us about the source address
2) Next 8 bits tell us about the protocol data unit specific
3) Next 8 bits tell us about the protocol data unit format
4) 1 bit data page
5) 1 bit reservation
6) 3 bit priority

The protocol distribution unit specific (PS) depends on PF.

a) If the decimal equivalent of PF is between 0-239 then PS is for destination address
b) If the decimal equivalent of PF is between 240-255 then PS is Group extension value(GE)

An easier way to understand the can ID's are dividing the ID in groups of 2(hexadecimal format)

a) First pair→ Has the priority
b) Second pair→ PDU Format (message type)
c) Third pair→ PDU Specific (either the destination address/extended message ID's)
d) Last pair → Controller's Can ID

The 29-bit can ID is sent with an 8 byte of payload(MOST IMPORTANT)

The 8 byte of data received(hexa format) gives us idea about different important parameters which again is divided into groups of two(the hex has to be converted to decimal for easier understanding)

a) First pair → Motor RPM(RPM, (or) ((MSB*256) + LSB), 1rpm/bit)
b) Next pair → Motor current(A, (or) ((MSB*256) + LSB)/ 10, 0.1A/bit)
c) Next pair → Motor Voltage(in V, (or) ((MSB*256) + LSB)/ 10, 0.1A/bit)
d) Last pair → Error(if any)

To Understand the Errors,

Position of Error code	Name	Description
ERR0	Identification error	The operation of Identification Angle failed.Please try to do it again according to the instruction of how to use Identification function from our website.It can be downloaded by free.
ERR1	Over voltage	1. Battery voltage is too high for the controller.Check battery volts and configuration.
ERR2	Low voltage	1. Check battery volts and configuration. 2. Battery voltage is too low for the controller.Battery voltage is lower than the Under voltage setting. 3. Charge the battery if necessary.
ERR3	reserved	
ERR4	stall	The motor still can't provide speed feedback after controller outputs command for 2 seconds.It could be related with the problem of speed sensors or phase wires.
ERR5	Internal volts fault	1. Measure that B+ & PWR are correct when measured to B- or RTN. 2. There may be excessive load on the +5V supply caused by too low a value of Regen or throttle potentiometers or incorrect wiring. 3. Controller is damaged. Contact Kelly for warranty repairing.
ERR6	Over temperature	1. The controller temperature has exceeded 100℃. The controller will be stopped but will restart when temperature falls below 80℃.
ERR7	Throttle error at power-up	1. This error code will be trigger when there is a valid throttle signal above TPS Low setting after Power up.In other words,the initial output of throttle pot or hall throttle is above throttle Effective starting position setting in the user program or Android App.TPS Low is the same as Throttle effective starting position setting.Please try to configure the throttle effective starting Position or disable foot switch again in user program or Android App. 1. Throttle signal is higher than the preset 'dead zone' at Power On. Fault clears when throttle is released. 2. Please use Kelly's user program to set up the right pedal type if you use "hall"pedal.
ERR8	Reserved	
ERR9	Internal reset	1. May be caused by some transient fault condition like a temporary over-current, momentarily high or low battery voltage. This can happen during normal operation.
ERR10	Hall throttle is open or short-circuit	1. Please check if the throttle pedal has a short-circuit or open circuit. 2. When the throttle is repaired, a restart will clear the fault.
ERR11	Angle sensor error	1.Speed sensor type error，customers may set the correct sensor type through user program or App. Please download how to use Identification function instruction from our website. 2.Incorrect wiring. 3.Speed sensor is damaged or defective.Or feedback signal is erratic.
ERR12	Reserved	
ERR13	Reserved	
ERR14	Motor over-temperature	1. Motor temperature has exceeded the configured maximum,the controller will shut down until the motor temperature cools down. 2. Can change motor max temperature through user program.
ERR15	Hall Galvanometer sensor error	1. Hall galvanometer device is damaged inside the controller. 2. This error code is only valid for KLS-8080I controller.