Resolver to Digital Converter PA0095

- **Emulates encoder from most resolvers**
- **Plug & Play Installation with JVL´s motor drivers/controllers**
- **A–B–Index and hall signal outputs.**

In many automation applications it is desirable to have both the ruggedness of the resolver and the digital simplicity of the incremental encoder. JVL´s PA0095 Resolver to Digital converter module is a convenient way to satisfy that need. It can be used with most types of resolvers, and therefore it can be used with almost any type of motor with resolver. The PA0095 module emulates an encoder, providing A-quad-B and index outputs. It also generates HALL signals, used for initialisation of AC-servo motors.

The compact, DIN rail mounted, module provides the reference signal for the resolver, and converts the resolver feedback to an A-quad-B output equivalent to a 1024-line encoder. The module only needs a 5V 100mA power supply, and therefore can be powered by the encoder power supply from the motor driver/controller. The PA0095 enables the JVL AC Servo Controllers, AMC1x and AMC2x, to drive a motor with resolver

Features
- Standard 1024 lines per revolution output (higher resolutions available on request)
- Excellent noise immunity
- Different resolver reference frequency.
- Selectable reference voltage output.

- DIN rail mounting
- Compact unit which is easily mounted
- LED indication for Power and A, B, Z – channel.
- Differential encoder output.
- Hall signals for 2-20 pole motors.
- CE approved
- Can be connected to JVL controllers DMC1x, AMC1x and AMC2x.
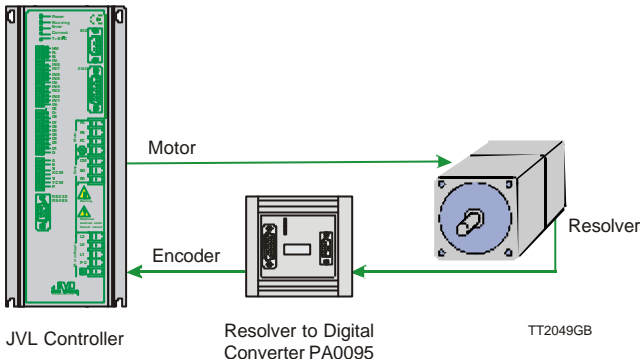
Typical Applications
- Factory automation & robotics
- Textile machines
- Steel & aluminium mills
- Packing machines
- Pulp & paper processing
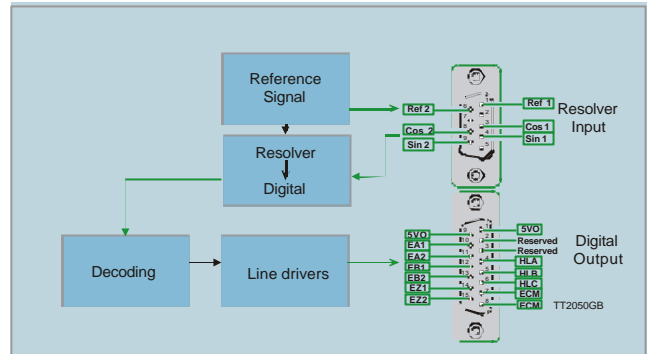- Glass, plastics & film manufacturing
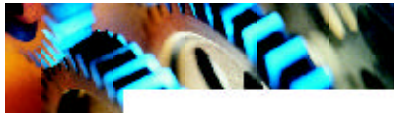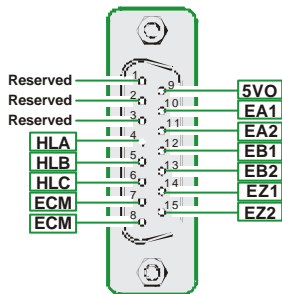
Resolver to Digital Converter PA0095

System set-up - Connections

Motor

Encoder

Resolver

JVL Controller

Resolver to Digital
Converter PA0095

TT2049GB

Block diagram

Reference
Signal

Resolver
↓
Digital

Decoding

Line drivers

Ref 2
Cos 2
Sin 2

Ref 1
Cos 1
Sin 1

Resolver
Input

5VO
EA1
EA2
EB1
EB2
EZ1
EZ2

5VO
Reserved
Reserved
HLA
HLB
HLC
ECM

Digital
Output

TT2050GB

Digital Output
D-Sub female

Reserved
Reserved
Reserved
HLA
HLB
HLC
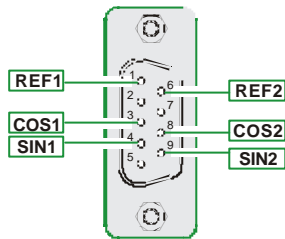ECM
ECM

5VO
EA1
EA2
EB1
EB2
EZ1
EZ2

Connection table
5VO. Supply input. Connect to a
5VDC/300mA supply source.
EA1, EA2. RS422 quadrature output.
EB1, EB2. RS422 quadrature output.
EZ1, EZ2. RS422 index pulse output.
HLA, HLB, HLC. TTL hall outputs.
ECM. Ground/common terminals.

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Resolver Input
D-Sub female

REF1
COS1
SIN1

REF2
COS2
SIN2

Connection table
SIN1, SIN2. Connect to the resolver
secondary winding typical called "SIN"
or "X" (manuf. Dependent).
COS1, COS2. Connect to the resolver
secondary winding typical called "SIN"
or "X" (manuf. dependent).
REF1, REF2. Connect to the resolver
primary winding (exciter winding).

Resolver requirements

Reference frequency: 5-10 kHz
Reference voltage: 4V RMS
Load resistance   >50Ω
Pole Pair   1
Transformation ratio   0.5

Specifications

Supply Voltage: 5VDC
Current Consumption: 100mA
Resolution: 12bit
Dimensions: HxBxD   74x72x27 mm
Weight: 145 gr.
Order number: PA0095

Accessories

AMC1x Encoder cable: WE00xx
AMC2x Encoder cable: WE21xx

Dipswitch settings

The dipswitch on the front plate can be set as follows:

6	5	4	3	2	1	Poles
0	0	0	0	0	0	8
0	0	0	0	0	1	20
0	0	0	0	1	0	2
0	0	0	0	1	1	4
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
1	1	1	1	1	1	Reserved

On = 1   Off = 0

Connection to motors

SBC and Stritorque motors are connected as indicated below.
Use twisted pair cable with pairs: Pin 1/6, Pin 3/8, Pin 4/9.

D-Sub 9 PA0095	SBC-motor	Stritorque motor
Pin1	Pin2	Pin1
Pin3	Pin6	Pin4
Pin4	Pin4	Pin7
Pin6	Pin1	Pin2
Pin8	Pin5	Pin5
Pin9	Pin3	Pin6