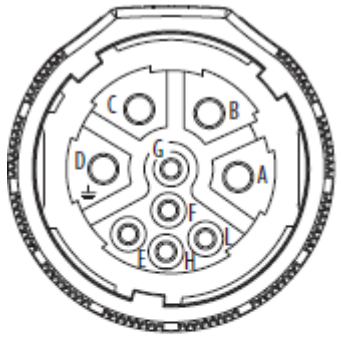
Servo Motor Communication Link Segment Introduction

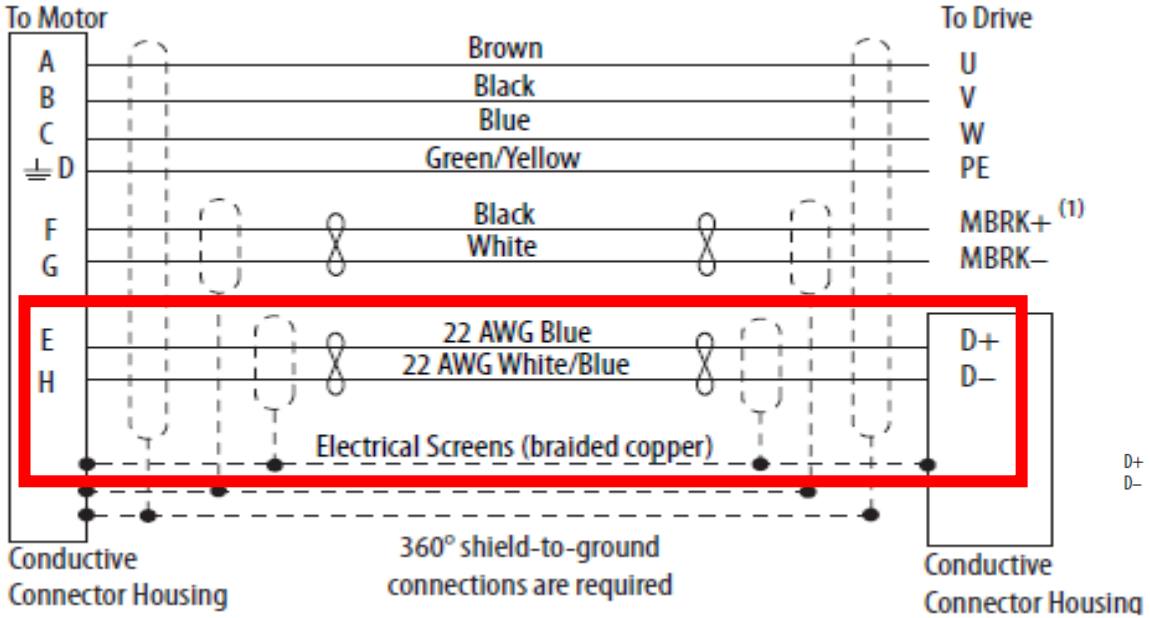
Dayin XU
Rockwell Automation

Link Segment for Servo Motor Communication

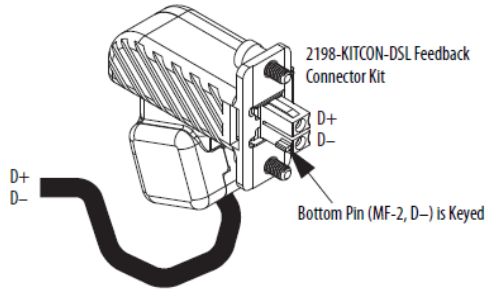
- AWG22 cable, up to 100m (90m cable + 10m extension)
- Only one inline connector w/ one extension cable
- Only single pair, no cross-talk
- 360° shield design, noise from power wires is shielded,

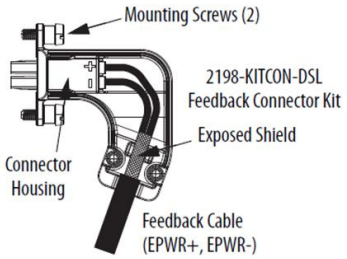
Extension cable





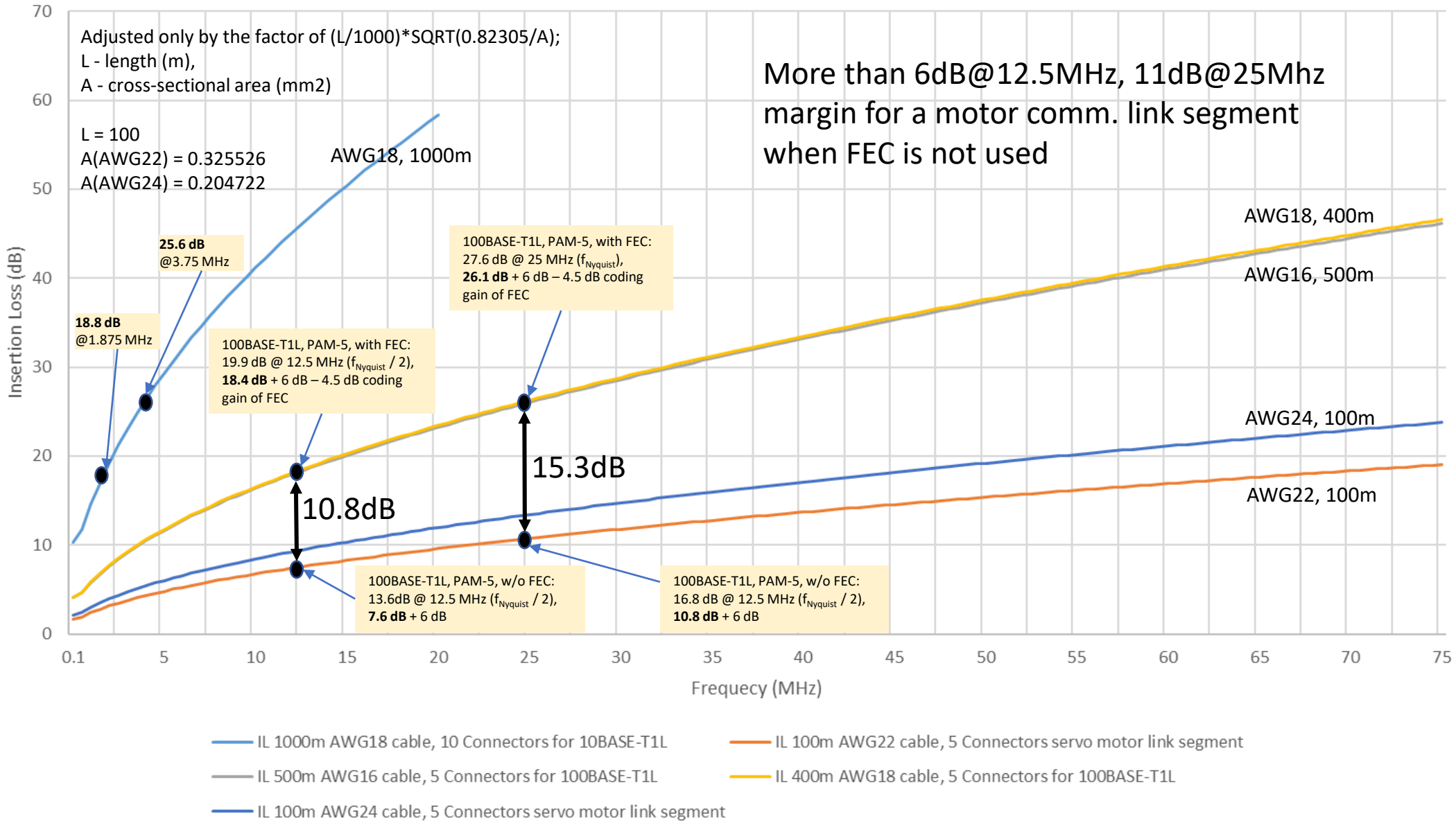
- Wire Connection
- Shield
- Twisted Wire Pair





Insertion Loss Analysis

Refer to S. Graber's presentation: [100BASE-T1L Reach and Connectors]



Latency Objective Discussion

Option1: Define a latency objective

- This will ensure the PHY can be used for low latency use cases

Option2: Work on the lower latency operation mode without a latency objective

- This might create the risk that the lower latency feature is dropped during the project execution

Latency Objective Discussion

If the group decides to specify a low latency objective

Propose to use

“Support a lower latency operation mode for the PHY with the latency <=1.5usec for a link segment up to at least 100m length”

Instead of

“Define an optional link segment up to at least 100m length for operation with latency </= 1.5usec”

To

Clearly express that we want single PHY with an optional lower latency mode and we don’t want to define a second link segment for a 2nd PHY

Thank You