

## GX20 MDR CONTROL CARD



### Key Features

- 24V High Current 2-Zone MDR Control Card.
- High Performance and reliable EtherCAT Connectivity.
- Built-in resettable fuse for overcurrent & short circuit protection.
- Built-in reverse polarity protection.
- Supports High Speed 1ms scan time/polling rate from Gateway/PLC.
- Compact Form-Factor that fits inside conveyor channel.
- Direction and Speed Control for MDR Rollers.
- Diagnostic data, e.g. individual motor current, peak current, input voltage, MDR run/stop cycle count.
- Free programming software for conveyor automation, e.g. accumulation, merge, cross-transfer etc.
- Free Software to plot current trend graph. Plot motor current trend to flag impending motor failures and take early action to avoid downtime.
- Free Software to log on/off cycle count and initiate workorder to perform preventive maintenance on MDR conveyor components like nylon rings and belts.

## Overview

The GX20 MDR Control Card is a device used in Conveyor systems for controlling and driving MDR rollers. Each GX20 card can control up to two motors. Compatible rollers include:

- Interroll EC310
- Interroll EC5000 24V AI (20W / 35W / 50W)
- Rulmeca BL3
- Itoh Denki PM500XK
- Itoh Denki PM500XC
- And more

The GX20 allows quick installation of the control system using M8 plugs motors and photoeyes, and Snap-On mounting hardware. The device uses vampire connectors for easy connection to the Power cables, which allows for significant reductions in installation costs as well as maintenance. A key feature of the GX20 is its use of EtherCAT for the data network, ensuring high-speed and efficient communication. The system also supports hot-swapping of these cards in case a unit needs to be replaced.

The GX20 MDR Control Card allows up to 8 Amp of total continuous current, 5Amp @ 24V for each motor and has a built-in resettable fuse for protection against short circuit and over-current condition. One motor can exceed 5Amp but the total current from the unit cannot be more than 8Amp. Continuous 8A or more load will cause the Resettable fuse to trip. The resettable fuse will automatically reset once the power is cycled and over-current error has been resolved.

The GX20 unit puts out 0-10V analog voltage to set the motor speed. This value is set by the EtherCAT Gateway e.g. [IntelleCAT Gateway/PLC](#). The motor speed, direction and on/off state are controlled from network polling data.

The GX20 also provides **Diagnostic data for Motor Voltage, individual Motor current as well as peak current**. This information is helpful to identify failing motor and quickly avoid downtime. The information is relayed back to the Gateway/PLC over EtherCAT and then to the PC/PLC/HMI app for monitoring.

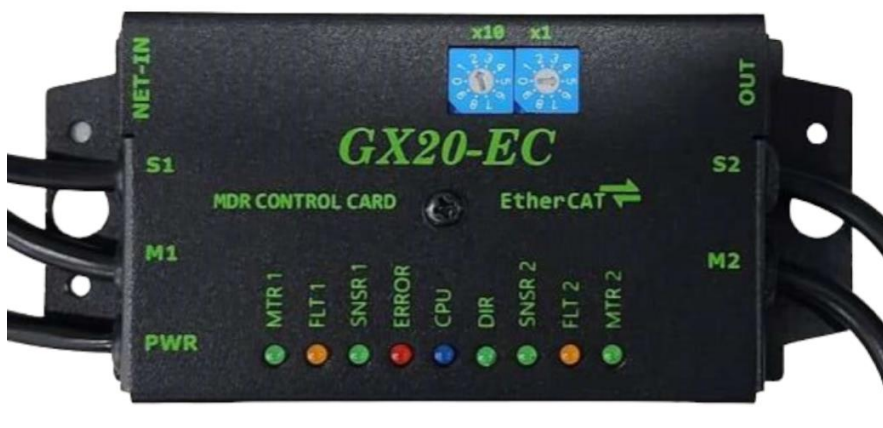
## Station ID

The station ID is configured by the rotary switches. The valid station ID range is 01 to 64.



## Case

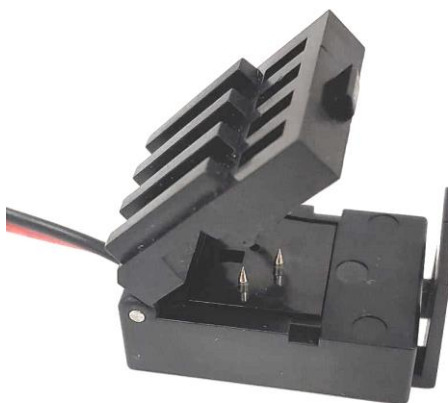
The iron product case is a durable solution for protecting PCBs, featuring solid iron construction for strength and impact resistance. It blocks dusts and provide protection against static discharge.



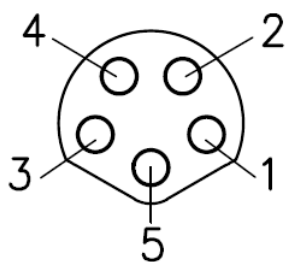
### Status LEDs

<b>CPU</b>	Status of CPU
<b>FLT 1/2</b>	Motor Fault States
<b>MTR 1/2</b>	On/Off State of connected motor
<b>SNSR 1/2</b>	On/Off State of connected sensor
<b>ERROR</b>	Device fault-state Indicator
<b>DIR</b>	Commanded Motor Direction

### Motor Power Wiretap Connector

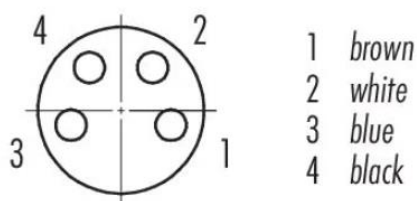


## Motor Output Plugs MOT1 and MOT2 – M8 5-Pin Female Connectors



PIN	Description	
Pin1	+24V	Brown
Pin2	Direction	White
Pin3	GND	Blue
Pin4	Fault	Black
Pin5	Speed	Gray

## Sensor Input Plugs IN1 and IN2 - M8 4-Pin Female Connectors



PIN	Description
Pin1	+24V
Pin2	Unused
Pin3	GND
Pin4	Signal (PNP)

## Technical Data

Electrical specifications	
<b>Motor Power</b>	24 VDC ( $\pm 4$ Volts)
Inputs	
<b>Number/Type</b>	2 Inputs for Sensors (IN1, IN2) Above 12V triggers the input.
Outputs	
<b>Number/Type</b>	2 outputs for DC roller motors (MOT1, MOT2)
<b>Current</b>	8Amp continuous total card current, Max per motor 5 Amps
<b>Overload Protection</b>	Resettable Fuse, > 8 Amps for 3 to 5 seconds. Auto recovers on power cycle.
<b>Roller Speed Signal</b>	0 ... 10 V
<b>Roller Direction Signal</b>	OFF: Open Circuit. ON: 24V, Max 2mA
<b>Motor Fault</b>	Digital input (NPN Open-Drain): <ul style="list-style-type: none"> <li>Input tied to 0V (Grounded): NO Fault</li> <li>Input Unconnected or Open Circuit: Error, Fault state</li> </ul>
Ambient Conditions	
<b>Ambient Temperature</b>	-25 ... 65 °C
<b>Storage Temperature</b>	-25 ... 85 °C
Mechanical Specifications	
<b>Degree of Protection</b>	IP60
<b>Connection</b>	EtherCAT: RJ45 Both In and Out Power: Insulation piercing technology Inputs/outputs: M8 round plug connector in accordance with EN 61076-2-104 Inputs: LF004-GS1-A (4-pin, bushing contacts, screw lock, A-coded) Matching connector: LM004-Gx1-A or similar Outputs: NF005-SS1-B (5-pin, bushing contacts, snap lock, B-coded). Matching connector: NM005-Sx1-B or similar
<b>Mass</b>	400 grams (~0.9 lb)
<b>Mounting</b>	2 clips with $\varnothing$ 9 mm drill hole
<b>Cable Length</b>	30 inches

## Dimension Data

All Dimensions are in inches(gray) and millimeters(black).

