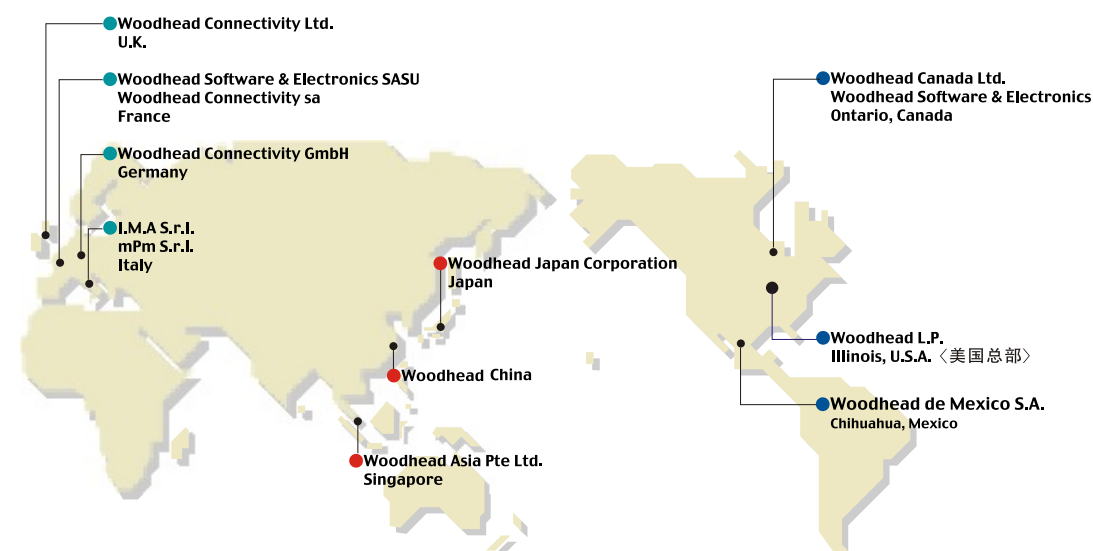




applicom® • Brad Harrison® • mPm® • RJ-Lnxx® • SST™
THE GLOBAL LEADER IN INDUSTRIAL COMMUNICATIONS AND CONNECTIVITY



UNITED STATES
Woodhead L.P.
3411 Woodhead Drive
Northbrook, Illinois 60062
Tel: +1 (847) 272-7900
Fax: +1 (847) 272-8133

SINGAPORE
Woodhead Asia Pte. Ltd.
4 Toh Yack Link, Level 3, Mazonine
Markono Logistics Building
Singapore 996225
Tel: +65 6261-8538
Fax: +65 6261-3508

中国
富德亚洲有限公司上海代表处
上海市浦东新区金桥路 600号
邮编: 201206
电话: +86 21-5032-8080
传真: +86 21-5031-8833

your local distributor
本地代理商

Brad Harrison and Micro-Change are registered trademarks of Woodhead Industries, Inc.

BRAD HARRISON®

Micro-change®(M12)

产品目录

MICRO-CHANGE®(M12) Cordsets and Multi-ports



applicom® • Brad Harrison® • mPm® • RJ-Lnxx® • SST™

Woodhead

INDEX 索引

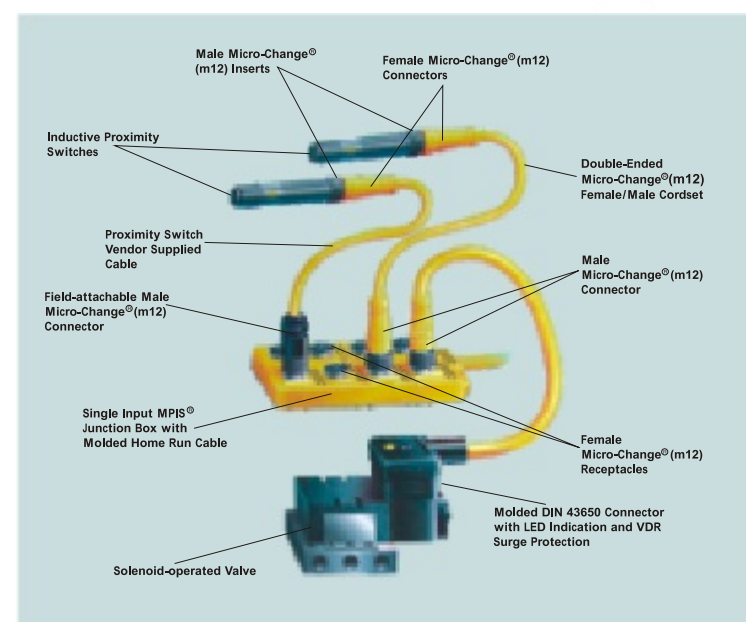
- 2 单端电缆接插件
Single-ended cordsets
- 3 双端电缆接插件
Double-ended cordsets
- 4 分线器
Splitter
- 5 插拔式接头
Attachable connector
- 6 多端口接线盒
Multi-port box
- 8 产品型号选型
Product Selection guide
- 9 其它产品
Other products

从手工配线中解脱 Revolution in industrial control wiring

节约配线的解决办法 Solution for reduction of cable assembly

自1971年传感器用连接器初次介绍到FA市场以来，Woodhead Industries, Inc经常在变化的市场中推出新的想法和高品质的产品。各种传感器用的连接器、多端口接线盒（MPIS）和传感器、执行器、总线和系统一起，提供了开放式局域网系列产品的方案并为传感器和执行器的连接省去了很多配线。比起手工配线，总配线成本减少了。

Since the introduction of sensor connector to the Factory Automation market in 1971, Woodhead Industries, Inc has been providing new ideas and high quality products to the dynamic and ever-changing market place.



Different type of sensor connector, MPIS (Multi Port Interconnecting System) together with the sensor, actuator and fieldbus concept has been providing solution to the open network system. Such system has reduced the need of wiring connection in connectivity of sensor and actuator. Adopting the sensor connector and the MPIS solution has also reduced the total cost of wiring assembly, compared to the manual wiring connection.

节约配线 Economizing cable assembly

过去，成套设备内的传感器、执行器和控制器之间的配线都是通过中继端子箱，以手工配线为主要方式。但是，手工配线存在诸多问题。使用代替中继端子的输入/输出一体化模块（多端口接线盒）和配套的传感器执行器接头和电缆，配线得以节省并带来很多优点。

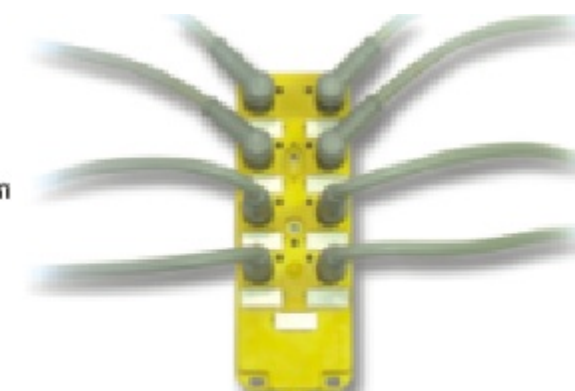
Traditionally, terminal box was used to manually connect the cable assembly from the sensor and actuator to the controller. By using the MPIS and the sensor connector cable assembly, it brings about saving of cabling and many other advantages.

Micro-Change® 连接器 (M12) Micro-Change® connector (M12)

- Micro-Change® 连接器的用户中，以M12居多，因此价格方面也较接近用户的采购价。
As M12 is popular among Micro-Change® connector users, the price is acceptable for most of the user.
- 有四芯、五芯和八芯三种规格。其中，四芯的价格最为便宜，一般以四芯代用。
There are three specification. 4pin, 5 pin and 8 pin. 4 pin is the cheapest and it is adopted at most time.
- 多端口接线盒可节省接线的成本。
MPIS can reduce the wiring cost.

手工配线的问题

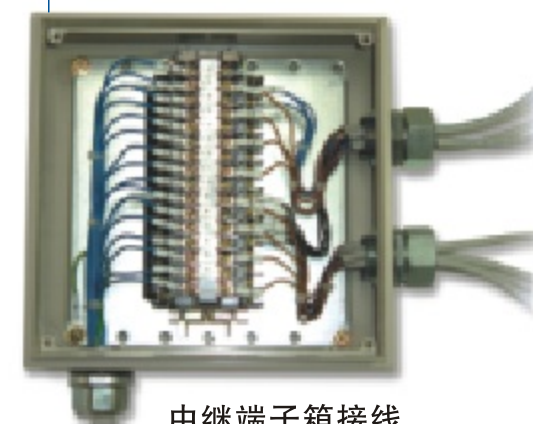
- 配线工作复杂
cable assembly complicated
- 可能配错线
possibility of wrong cable connection
- 配线时间长
assembly time longer
- 配线成本高
assembly cost higher
- 维护工作复杂
maintenance difficulty
- 产品数量多、库存管理成本高
high inventory cost due to many components
- 接线空间大
need bigger space for connection



多端口接线盒 (MPIS)

省配线的方法

- 配线作业简单
simplify cable assembly
- 配线工程时间缩短
less time taken to assemble
- 避免了配错线的可能
avoid the possibility of wrong cable connection
- 维护时间缩短
reduce maintenance time
- 总配线成本降低
reduce overall cost
- 产品数量减少、库存管理成本降低
less inventory cost due to lesser components
- 节省空间，简化设计
save space, simplify design



中继端子箱接线

Micro-Change® 单端电缆接插件

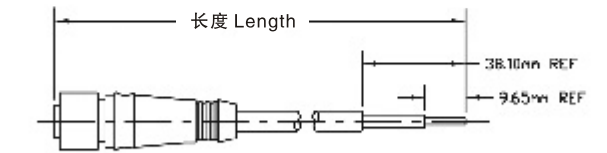
MICRO-CHANGE® (M12) Single-Ended Cordsets



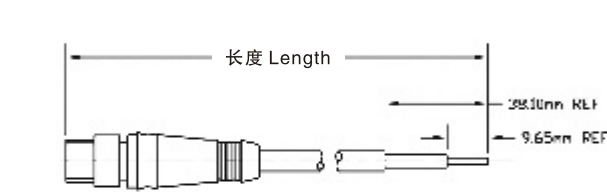
一般称为M12接插件。
Generally termed as M12 cordset.
可应用于输入传感器、接近开关和执行器。
Used for input sensor, limit switch and actuator.
配有直线、90度等规格，可根据安装空间进行选择。
Variation such as straight, 90 degree etc, and can be selected according to the installation space.
采用可移动的高标准电缆。
High standard flexible cable are used.

外形尺寸 Dimensions

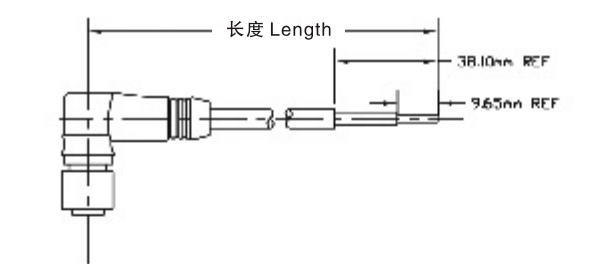
- 孔座直接 Female Straight



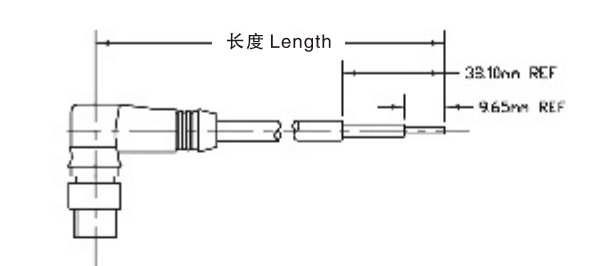
- 针座直接 Male Straight



- 孔座90° 弯头 Female 90°



- 针座90° 弯头 Male 90°



型号表 (具体型号含意参见8页) Selection Guide (Details in Page 8)

类型 Type	PVC	PUR
孔座直接 Female Straight	80400CW03M020W	804000P03M020W
针座直接 Male Straight	804006W03M020W	804006P03M020W
孔座90° 弯头 Female 90°	804001W03M020W	804001P03M020W
针座90° 弯头 Male 90°	804007W03M020W	804007P03M020W

※ M020表示2m,10m的表示为M100。0.5m,1m,2m,3m,5m,10m,20m,均可提供。

M020 means 2 meters, M100 means 10meters. 0.5m,1m,2m,3m,5m,10m,20m is selectable.

Micro-Change® 双端电缆接插件

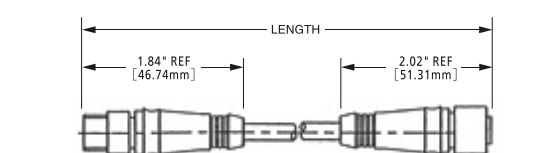
MICRO-CHANGE® (M12) Double-Ended Cordsets



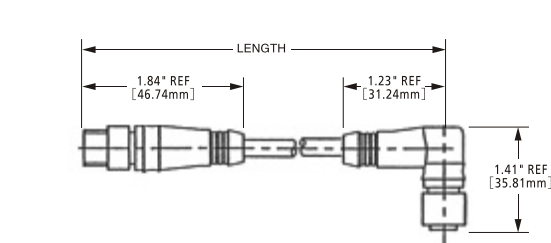
双端式M12接插件。
Double-ended M12 cordset.
可应用于输入传感器、接近开关和执行器的中继。
Used for the connection between input sensor, limit switch and actuator.
配有直线、90度等规格，可根据安装空间进行选择。
Variation such as straight, 90 degree etc., and can be selected according to the installation space.
采用可移动的高标准电缆。
High standard flexible cable are used.

外形尺寸 Dimensions

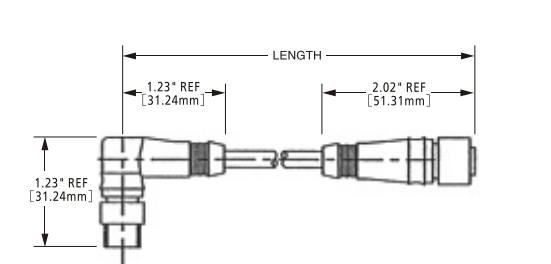
- 孔直-针直 Female Straight – Male Straight



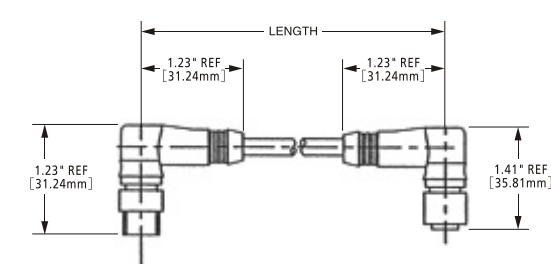
- 孔直-针弯90° Female Straight – Male 90°



- 孔弯90° – 针直 Female 90° – Male straight



- 孔弯90° – 针弯90° Female 90° – Male 90°



型号表 (具体型号含意参见8页) Selection Guide (Details in Page 8)

类型 Type	PVC	PUR
孔直-针直 Female Straight – Male Straight	884030W03M020W	884030P03M020W
孔直-针弯90° Female Straight – Male 90°	884032W03M020W	884032P03M020W
孔弯90° – 针直 Female 90° – Male straight	884031W03M020W	884031P03M020W
孔弯90° – 针弯90° Female 90° – Male 90°	884033W03M020W	884033P03M020W

※ M020表示2m,10m的表示为M100。0.5m,1m,2m,3m,5m,10m,20m,均可提供。

M020 means 2 meters, M100 means 10meters. 0.5m,1m,2m,3m,5m,10m,20m is selectable.

Micro-Change® 分线器

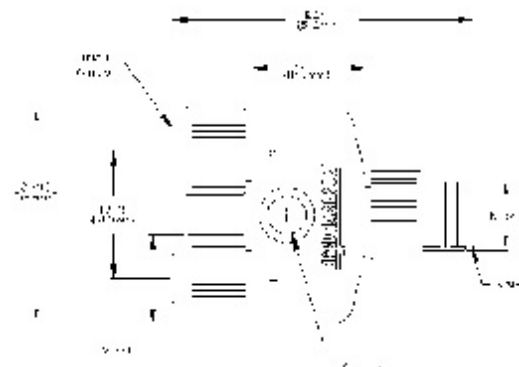
MICRO-CHANGE® cable splitter



Y型分支连接器。可对信号进行分路。可用于电感型光电式传感器和圆柱型接近开关。
因为有两种回路，须根据用途区别使用。
“Y” splitter can be used to distribute signal. It can be used for inductive photoelectric sensor and cylinder limit switch. Two kinds of circuits can be selected according to the applications.

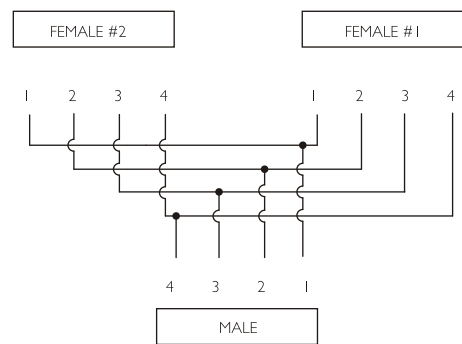
外形尺寸 Dimensions

- 本体 Body

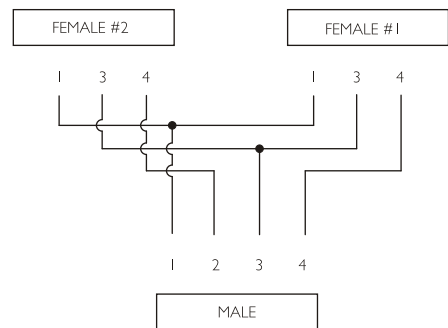


电路图 Diagram

- 电路 Circuit A 型号 Model : DW81589



- 电路 Circuit B 型号 Model : DW81590

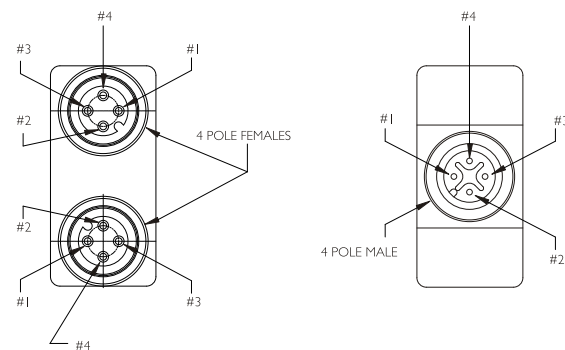


型号表 Selection Guide

电路 Circuit	型号 Model
A	DW81589
B	DW81590

俯视图 Face Views

- 孔座 Female
- 针座 Male



机械特性 Mechanical

接插头Connector	NYLON6/6
本体Molded Body	PVC(DW81589→Black, DW81590→Gray)
O型环 O Ring	NBR (腈橡胶)
连接螺母 Coupling Nut	黑色深层锌合金 Zinc Diecast with Black Epoxy Coated

电气特性 Electrical

额定电压 Voltage Rating	300V AC / 250DC
额定电流 Amperage	4P-4A Total

环境参数 Environmental

防护等级 Protection	IP68
使用环境温度 Operation Temp	-20℃ ~ +105℃

Micro-Change® 插拔式接头

MICRO-CHANGE® (M12) attachable Connectors



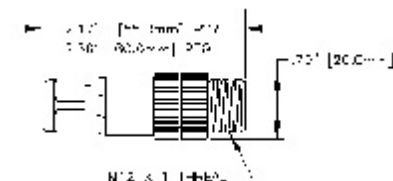
M12尺寸的组合式接插件。
M12 dimension attachable connector
专为传感器线缆配套。
Specialized for sensor cable
无论公母接头，都配有直线或90度的产品，导线用螺母固定。
All male or female attachable can be selected either straight or 90 degree. Cable fixed on cable gland.

外形尺寸 Dimensions

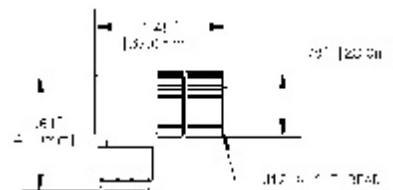
- 孔座直接 Female Straight



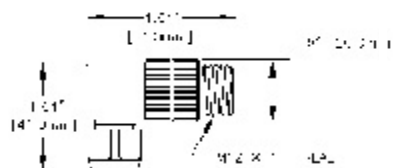
- 针座直接 Male Straight



- 孔座90° 弯头 Female 90°

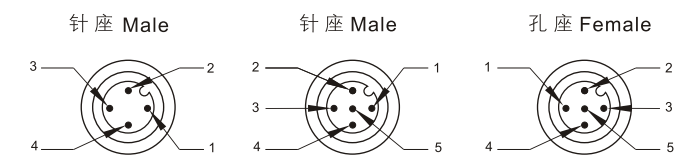


- 针座90° 弯头 Male 90°



俯视图 Face Views

- 4芯 (4 pin)
- 5芯 (5 pin)
- 5芯 (5 pin)



机械特性 Mechanical

接插头 Connector	NYLON6/6
触点 Contact	黄铜涂银 Gold plated copper alloy
本体 Molded Body	PBT
连接螺母 Coupling Nut	黄铜带镍铬涂层(nickel plated brass)
接插件材质 Connector Material	NBR (腈橡胶)
合适电缆外径 Cable OD	PG7→3-6.6 mm PG9→4.1-8.1 mm

电气特性 Electrical

额定电压 Voltage Rating	4Pin-250V AC / 300V DC 5Pin-30V AC / 36V DC
额定电流 Amperage	4A
最大导体尺寸Max Size	AWG# 8

环境参数 Environmental

防护等级 Protection	IP68
使用环境温度 Operation Temp	-25℃ ~ +90℃

型号表 (具体型号含意参见8页) Selection Guide (Details in Page 8)

类型 Model	4Pin	5Pin
孔座直接 Female Straight	8A4000-31(PG7), 8A4000-32(P39)	8A5000-31(PG7), 8A5000-32(PG9)
针座直接 Male Straight	8A4006-31(PG7), 8A4006-32(P39)	8A5006-31(PG7), 8A5006-32(PG9)
孔座90° 弯头 Female 90°	8A4001-31(PG7)	8A5001-31(PG7)
针座90° 弯头 Male 90°	8A4007-31(PG7)	8A5007-31(PG7)

Micro-Change® 多端口接线盒

MICRO-CHANGE® MPIS(Multi-Port Interconnection System)



M12接口连接用的多端口输入/输出接线盒。
代替传统的中间端子，有四口、六口和八口三种型号。线缆长度有5米、10米和15米。
It has 4port, 6port and 8port which replace traditional termination. The cable length is 5, 10 and 15 meters.

机械特性 Mechanical

I/O接口 I/O Connector	M12
端口数 Port	4,6,8
触点材料 Contact Material	黄铜涂金 (gold plated copper alloy)
内部材料 Insert Material	PBT(Polyester)
O型环材料 O ring Material	Viton
铸件材料 Molded Body Material	PBT(Polyester)
接插件材料 Connector Material	黄铜带镍铬涂层(nickel plated brass)
插拔次数 Usage	250次(250)

电气特性 Electrical

额定电压 Voltage Rating	2A/端口 (Total 12A)
额定电流 Amperage	10-30V DC
绝缘阻抗 Isolation Resistance	> 1000MΩ

电缆特性 Cable

材质 Material	PUR (Black)
绝缘体材质 Isolation Material	PVC
导体 Cross Section	4/6/8 × 0.34mm ² 3 × 0.75mm ²
直径 Dimension	9.5mm ± 0.15mm (6/8 Port) 8.4mm ± 0.15mm (4 Port)
电缆长度公差 Cable Length Tolerance	+5cm - 0cm

环境参数 Environmental

防护等级 Protection	IP68
使用环境温度 Operation Temp	-5°C ~ +90°C
安装尺寸 Installation Dimensions	33 × 107
LED表示 LED Indication	电源-绿 信号-琥珀色, Power-green Signal-amber
外形尺寸 Dimensions	详情请参见右图(details refer to the right diagram)

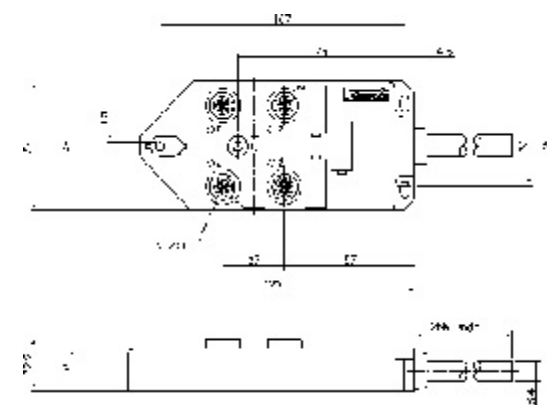
型号表 (具体型号含意参见8页) Selection Guide (Details in Page 8)

LED电路类型 LED Circuit type	端口数 Port	型号
NPN	4	BTY400N-FBP-05 W
	6	BTY600N-FBP-05 W
	8	BTY800N-FBP-05 W
PNP	4	BTY400P-FBP-05 W
	6	BTY600P-FBP-05 W
	8	BTY800P-FBP-05 W

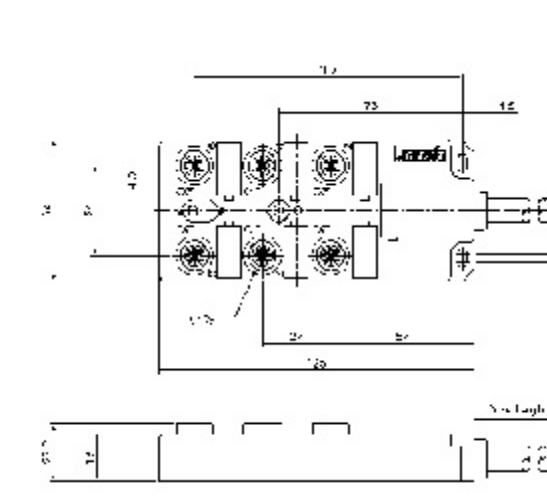
※ 电缆长度用末尾的05表示5m,10m即10米。可选择标准5m,10m,20m。
05 in the end of the cable length means 5 meters, 10m means 10 meters. 5m,10m,20m is selectable.

外形尺寸 Dimensions

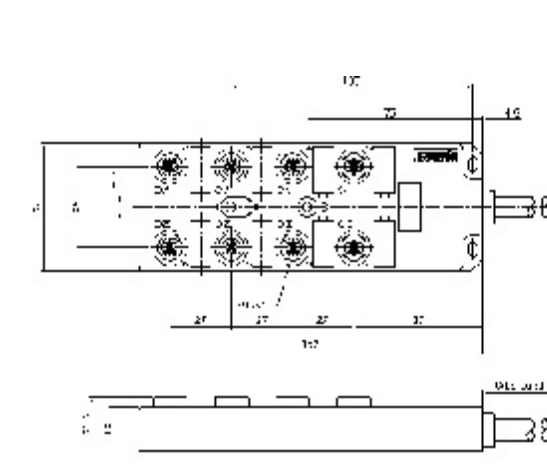
●4 Port



●6 Port

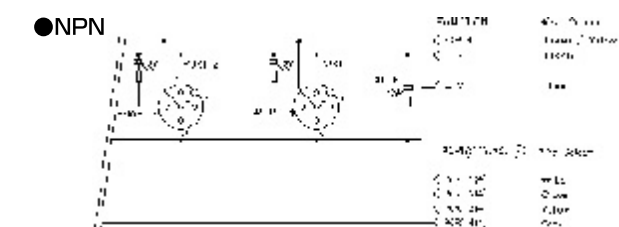


●8 Port

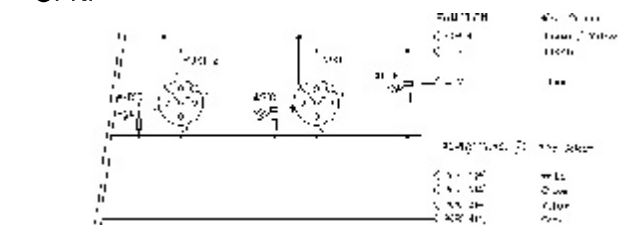


电路图 Circuit

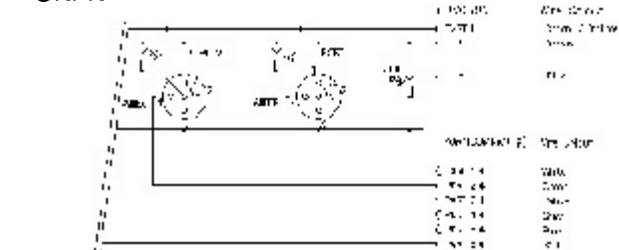
●NPN



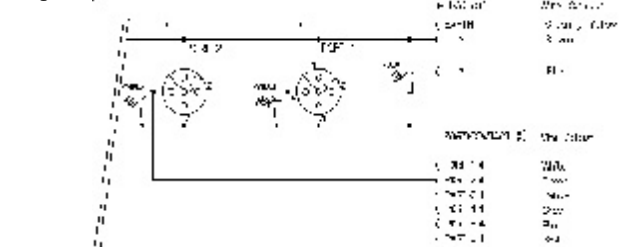
●PNP



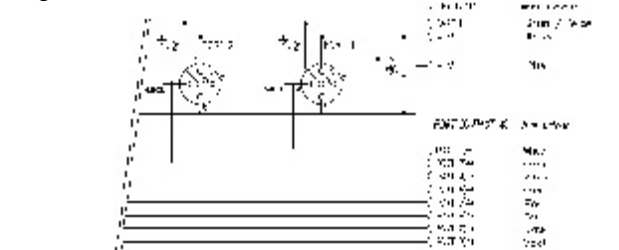
●NPN



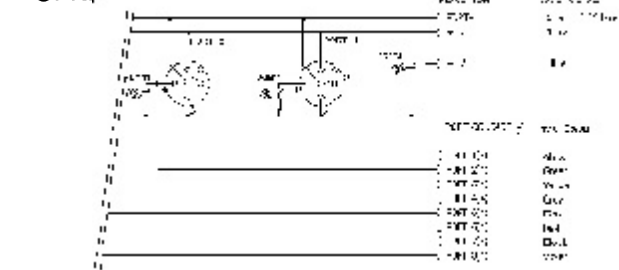
●PNP



●NPN



●PNP



型号表

Selection Guide

接插件 (Cordset)

884030W03M050W

类型 Type	管脚数 Pin	连接类型 Connection Type	电缆种类 Cable Type	电缆长度 Cable Length
88 双端Double ended	4 4 Pin	000 孔座直接 Female Straight	W03 PVC	00 1×0.1m
80 单端Single ended	5 5 Pin	001 孔座90°弯头 Female 90°	P03 PUR	0 10×1m
		006 针座直接 Male Straight		1 100×10m
		007 针弯90° Male 90°		
		030 孔直-针直 Female Straight - Male Straight		
		031 孔弯90° - 针直 Female 90° - Male straight		
		032 孔直-针弯90° Female Straight - Male 90°		
		033 孔弯90° - 针弯90° Female 90° - Male 90°		

可插拔接插件 (Attachable)

8A4006-32

管脚数 Pin	连接类型 Connection Type	适合电缆参数 Cable OD
4 4 Pin	C00 孔直 Female Straight	31 PG7 (3.3-6.8mm)
5 5 Pin	C01 孔座90°弯头 Female 90°	32 PG9 (4.1-8.1mm)
	C06 针座直接 Male Straight	
	C07 针弯90° Male 90°	

多端口接线盒 (MPIS)

BTY800N-FBP-10W

端口数 Port	LED类型 LED Type	电缆长度 Cable Length
800 8 Port	N NPN	05 5m
600 6 Port	P PNP	10 10m
400 4 Port		15 15m

其它产品

Other products

Micro-Change®连接器 (M8)
Micro-Change® connector (M8)



M8比M12小一圈。M8 is smaller than M12.
配有如下的接插线缆和多端口接线盒。 Provide with cables and MPIS.
节省配线、节省空间。 Reduced wiring & space.

- M8的普及程度比M12低，适用于小型机械的接插。 M8 is less popular than M12 , and suitable for small machine.
- 有四芯、五芯和八芯三种规格。 Three specifications, 4pin, 5pin and 8pin.
- 提供M8尺寸的多端口接线盒。 Provide MPIS of M8 dimension.
- 预埋式接插件适用于传感器的连接。 Suitable for the connection of sensor.

Mini-Change®连接器
Mini-Change® connector



尺寸比M12 (Mini-Change连接器) 大一圈。 The dimension is bigger than M12.
主要针对北美市场 Targeted in the North American market.
提供接插线缆、MPIS、可插拔接头等广泛的产品。 Providing comprehensive products such as cable, MPIS and connector.

- 以北美使用居多。 Popular in the North American market.
- 从两芯到十芯、十二芯、十九芯都有。 Connector pole varies from 2pin to 10pin, 12pin and 19pin.
- 用于电源线和信号线的接插。 Used for the connection of power and signal.

DeviceNet 连接器
DeviceNet connector



DeviceNet是现场总线的一种，在北美、日本市场很流行，相关的产品有各种尺寸的连接
器线缆、分支器、I/O模块等丰富的产品。
DeviceNet is one type of fieldbus and is popular in the North American and Japan
market. It has many products such as connector, cable, splitter, I/O module of various
dimensions.

- 从北美进口的设备上广泛使用的开放式现场网络。
Network is widely used in the equipments imported from North American.
- 传统的控制和信号线通过网络实现，节省了布线的成本。
Traditional control and signal wire can be realized by network. It can reduce the cost of cable design.
- 提供M12接头及Mini-Change接头为主的组合式接头、T型分支和终端电阻。
Providing modular connector, "T" splitter and terminator for M12 and Mini-Change connector.

Profibus 连接器
Profibus connector



Profibus是在欧洲广为流行的现场总线，在中国的应用也非常多。Woodhead提供相关的
产品。
Profibus is a fieldbus which is popular in Europe and also has many applications in
China. Woodhead can provide relevant product.

- 针对欧洲出口的机械大量采用了Profibus
Profibus is widely used in many machines exported to Europe.
- 传统的控制和信号线通过网络实现，节省了布线的成本。
Traditional control and signal wire can be realized by network. It can save the cost of cable design.