



- Operation of 16 Ethernet-APL or PROFIBUS PA field devices (PA proxy, only for 9740/12-16-40)
- All spurs intrinsically safe "ia" (2-WISE) with port profile A or A+B (only for 9740/12-16-00)
- Operation with 100BASE-TX (Zones 1, 2) and optionally 100BASE-FX (Zone 2)
- Redundant auxiliary power supply and extensive integrated diagnostics
- Installation in Zone 1

MY R. STAHL 9740B



The Series 9740 Ethernet-APL field switches are intended for the connection of intrinsically safe "2-WISE" field devices to higher-level 4-wire Ethernet networks, and supply the devices with intrinsically safe power. The field switches can be installed in Zone 1. The integrated diagnostics functions of the Ethernet-APL field switches make commissioning or troubleshooting far easier and faster.

Technical Data

Explosion Protection	
Application range (zones)	1, 2
Ex interface zone	0, 1, 2, 20, 21, 22
IECEX gas certificate	in preparation
IECEX gas explosion protection	Ex eb ia q [ia Ga] IIC T4 Gb
IECEX dust certificate	in preparation
IECEX dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	in preparation
ATEX gas explosion protection	II 2 (1) G Ex eb ia q [ia Ga] IIC T4 Gb
ATEX dust certificate	in preparation
ATEX dust explosion protection	II (1) D [Ex ia Da] IIIC
Certificates	ATEX (TUR), IECEX (TUR)
Notes	Certificates in preparation
Safety Data	
Max. voltage U_o	17.5 V
Max. current I_o (Ex ia)	380 mA
Max. power P_o (Ex ia)	1.67 W
Max. permissible external capacity C_o for IIC	0.25 μ F
Max. permissible external inductance L_o for IIC	0.15 mH
Internal capacitance C_i (coil)	negligible
Internal inductance L_i (coil)	negligible
Max. ext. capac. C_o (IIB/IIIC)	1.5 μ F
Max. ext. induc. L_o (IIB/IIIC)	0.5 mH
AC rated insulation voltage U_m	60 V
Intrinsic safety concept	2-WISE (CLC IEC/TS 60079-47) FISCO (EN 60079-11, -25)

Electrical Data

Interface 1 version	100BASE-TX
Transfer rate interface 1	10/100 MBit/s
Number of ports interface 1	3 (XT1, XT2, XT3)
Connection type interface 1	Plug-in spring clamp terminal 5-pole black Plug-in screw terminal 5-pole black
Cable shield earthing inter. 1	direct
Link network 1 LED	"XT1" LED, yellow
Link network 2 LED	"XT2" LED, yellow
Link network 3 LED	"XT3" LED, yellow

Auxiliary Power

Auxiliary power nominal voltage	24 V DC, 48 V DC
Auxiliary power voltage range	19.2 ... 57.6 V DC
Auxiliary power 1 LED	"PWR1" LED, green
Auxiliary power 2 LED	"PWR2" LED, green
Max. current consumpt. 24 V DC	0.95 A
Max. current consumpt. 48 V DC	0.5 A
Max. power consumption 24 V DC	22.8 W
Max. power consumption 48 V DC	22.8 W
Max. power dissipation at 24 V	13 W
Max. power dissipation 48 V	13 W
Auxiliary power connection	2 (PWR1, PWR2)
Auxil. power connection type	Plug. spr.-cl. term. 4-pin BK Plugg. screw terminal 4-pin BK
Con. cr.-sc. rgd min. aux. pwr	0.5 mm ²
Con. cr.-sc. rgd max. aux. pwr	2.5 mm ²
Con. cr.-sc. flx min. aux. pwr	0.5 mm ²
Con. cr.-sc. flx max. aux. pwr	2.5 mm ²

Galvanic Isolation

Test voltage for galvanic separation	Acc. to standard EN 60079-11
Auxiliary power/spurs	≥ 1500 V AC
Auxiliary power/100BASE-TX	≥ 1500 V AC
Spurs/100BASE-TX	≥ 1500 V AC
Between spurs	none

Field Device Interface

Spurs version	Ethernet-APL (10BASE-T1L) PROFIBUS PA
Number of ports spurs	16
Characteristic spurs	2-WISE power supply FISCO
Transfer rate spurs	10 MBit/s voll duplex 31,25 kBit/s
Link spurs LED	S01 ... S16 LED, yellow
Power Class	A
Max. number of spurs power class A	16
Max. number of spurs power class B	0
Max. no. spurs PROFIBUS PA	16

Field Device Interface

Open-circuit voltage pwr cl. A	13.65 V
Opn-circ. vltge PROFIBUS PA Ua	13 V
Output nom. cur. power class A	55.56 mA
Output nom. curr. PROFIBUS PA	40.00 mA
Output power power class A	0.54 W
Output power PROFIBUS PA	0.38 W
Cable shield earthing spurs	capacitive
Spurs connections	16
Spurs connection type	Plug. spr.-cl. term. 3-pin BU Plug. screw terminal 3-pin BU
Con. cr.-sec. flex. min. spurs	0.50 mm ²
Con. cr.-sec. flex. max. spurs	2.50 mm ²
Con. cross-sec. rgd min. spurs	0.50 mm ²
Con. cross-sec. rgd max. spurs	2.50 mm ²

Device Specific Data

Protocols 1	PROFINET
Characteristic protocol 1	Device, conformity class B
Availability protocol 1	System redundancy S2, MRP
Functions protocol 1	Dynamic reconfiguration Network load class I Pruning Rate limiter
Configuration protocol 1	GSDML
Protocols 2	EtherNet/IP
Characteristic protocol 2	Adaptor
Availability protocol 2	DLR
Functions protocol 2	in progress
Configuration protocol 2	EDS
User interface	Web server Display LEDs
Device integration	FDI OPC UA
Ethernet functions	SNMP DHCP
Security	HTTPS Password management Port lock
Real-time clock	Yes

Diagnostics

Physical layer 10BASE-T1L	SNR TDR Shield unbalance
Physical layer PROFIBUS PA	Noise Jitter
Communication	Lost packets LLDP

Diagnostics

Ambient condition	Temperature, humidity
Diagnostics connections	1 x Pt100, 2-wire (SPT)
Maintenance required LED	"M/S" LED, blue
Start-up process LED	"BOOT" LED, green
LED group error	"ERR" LED, red
Diagnostics connection type	Spring clamp terminal 2-pin BU
Con. cro.-sec. flex. min. dia.	0.25 mm ²
Con. cro.-sec. flex. max. dia.	1.5 mm ²
Cond. cro.-sec. rgd min. diag.	0.25 mm ²
Cond. cro.-sec. rgd max. diag.	1.5 mm ²

Display

Display resolution	256 x 64 pixels
Display	OLED WH/BK
Display size in inches	2.00
Display operation	4 operating keys, capacitive
Retrievable information	Device data Ethernet diagnostics Physical layer diagnostics
Device reset	Operating keys

Ambient Conditions

Ambient temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +80 °C
Max. operating altitude	< 2000 m
Max. relative humidity	95% (without condensation)
Degr. of pollution (IEC 60664)	1 2

Mechanical Data

Degree of protection (IP) (IEC 60529)	IP30
Fire resistance (UL 94)	V0
Pollutant class	corr. to G3 (ISA-71-04-2013)
Enclosure material	Aluminium, painted
Width	292 mm
Height	52.6 mm
Dimensions (L x W x H)	26,000 x 292,000 x 52,600 mm
Length	260 mm
Weight	5.8 kg
Weight	12.79 lb

Mounting / Installation

Mounting type	On mounting plate
Mounting orientation	Horizontal Vertical
Min. rigid conductor cross section	0.5 mm ²
Max. rigid conductor cross section	2.5 mm ²
Min. flex conductor cross section	0.5 mm ²
Max. flex conductor cross section	2.5 mm ²

Network technology

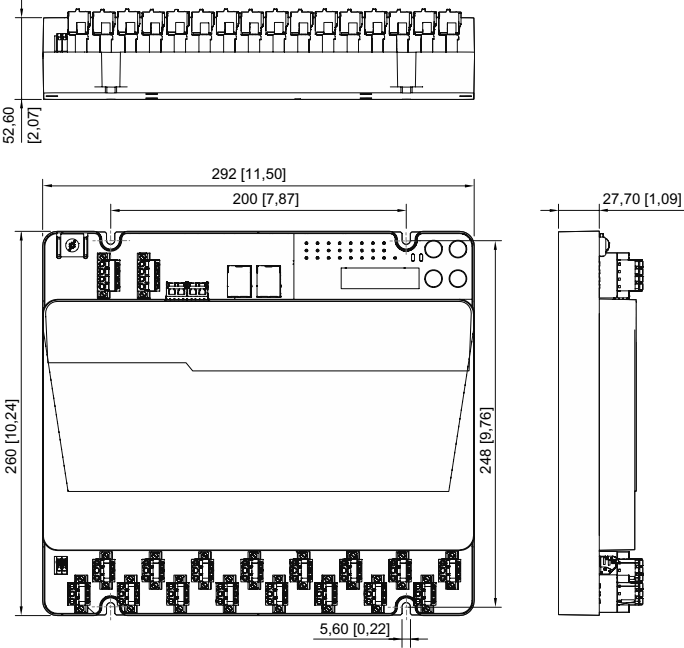
Ethernet-APL field switch Zone 1 installation

Trunk 3TX spurs 16 ia 16APA

9740/12-16-40 Art. No. 304746



Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



Accessories

Terminal set		Art. No.
	Terminal set for 9740/12 Version: Screw terminals Contents: 16 x 3-pole, blue; 2 x 4-pole, black; 3 x 5-pole, black	305678
	Terminal set for 9740/12 Version: Spring clamp terminals Contents: 16 x 3-pole, blue; 2 x 4-pole, black; 3 x 5-pole, black	305679

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.