

# WELDSAVER PASSPORT ETHERNET/IP PROFILES

# CONTENTS

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- A EtherNet/IP Device Profile - General ..... 1
- B EtherNet/IP Device Profile - Compact ..... 9
- C EtherNet/IP Device Profile - Compact Universal ..... 17
- D EtherNet/IP Device Profile - Legacy ..... 25

# A ETHERNET/IP DEVICE PROFILE - GENERAL

## General EtherNet/IP Information

### » Supported Services

SERVICE CODE	SERVICE NAME
01 (0x01)	Get_Attribute_All
05 (0x05)	Reset
14 (0x0E)	Get_Attribute_Single
16 (0x10)	Set_Attribute_Single
84 (0x54)	Forward_Open
78 (0x4E)	Forward_Close

### » Object Classes

CLASS CODE	OBJECT NAME
01 (0x01)	Identity
04 (0x04)	Assembly
245 (0xF5)	TCP/IP Interface
246 (0xF6)	Ethernet Link

### » Data Types

TYPE	DESCRIPTION	SIZE	RANGE
USINT	Unsigned short integer	1 byte	0 to 255
INT	Integer	2 bytes	-32768 to 32767 (little endian)
UINT	Unsigned integer	2 bytes	0 to 65535 (little endian)
UDINT	Unsigned double integer	4 bytes	0 to 2 <sup>32</sup> -1 (little endian)
WORD	Bit string	16 bits	
DWORD	Bit string	32 bits	
SHORT_STRING	Character string (1 byte per character, 1 byte length indicator)	variable	
STRING	Character string (1 byte per character)	variable	
EPATH	CIP path segments	variable	

## Identity Object, Class 0x01

### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	1	Revision of object
2	Get	Max Instance	UNIT	1	Maximum instance number

# A ETHERNET/IP DEVICE PROFILE - GENERAL

## Identity Object, Class 0x01 (Continued)

### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Vendor ID	UINT	414	Identification of each vendor by number
2	Get	Device Type	UNIT	43	Indication of general type of product
3	Get	Product Code	UINT	17	Identification of a particular product
4	Get	Revision	STRUCT of:		Revision of item Identity Object represents
		Major Revision	USINT	-	Firmware major revision
		Minor Revision	USINT	-	Firmware minor revision
5	Get	Status	WORD	-	Device status
6	Get	Serial Number	UDINT	-	Device serial number / MAC ID
7	Get	Product Name	SHORT_STRING	WSP-EIP	Product name

### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes
05 (0x05)	Reset	No	Yes

## Assembly Object, Class 0x04

### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	2	Revision of object
2	Get	Max Instance	UNIT	129	Maximum instance number

### » Instance 100 (Input) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get	Input Data	STRUCT of:		Data produced by the device
		Input States	WORD	-	Refer to Input States table on page 3.
		Supply Flow Rate	UINT	-	Supply flow rate in 1/100th LPM (or GPM)
		Return Flow Rate	UINT	-	Return flow rate in 1/100th LPM (or GPM)
		Inlet Temp*	INT	-	Inlet temperature in 1/100th °C (or °F)
		Outlet Temp*	INT	-	Outlet temperature in 1/100th °C (or °F)
		Reserved	INT	-	

\*Valid for products with temperature measurement capability only.

# A ETHERNET/IP DEVICE PROFILE - GENERAL

## Assembly Object, Class 0x04 (Continued)

### » Instance 101 (Output) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get / Set	Output Data	STRUCT of:		Data consumed by the device
		Output Controls	WORD	-	Refer to Output Controls table on page 4.

### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
16 (0x10)	Set_Attribute_Single	No	Yes

### » Input States

BIT	NAME	VALUE
0	Adequate Flow	0: Flow rate is below Flow Warning limit 1: Flow rate is above Flow Warning limit
1	Valve Closed	0: Coolant shutoff valve is open 1: Coolant shutoff valve is closed
2	Bypass Mode	0: Leak detection is enabled 1: Leak detection is disabled
3	Minimal Flow	0: Flow rate is below Flow Fault limit (Unsafe to weld) 1: Flow rate is above the Flow Fault limit (Safe to weld)
4	Cap Loss	0: Normal operation 1: Weld-cap loss or other break in coolant circuit detected
5	Valve Fault	0: Normal operation 1: Control valve failed to respond to shut-off command
6	Flow Sensor Fault	0: Normal operation 1: No frequency is detected from flow sensor(s)
7	Power OK	0: No auxiliary power to device 1: Normal operation
8	Units of Measure	0: Flow units = GPM / Temperature units = °F 1: Flow units = LPM / Temperature units = °C
9*	Outlet Temperature Fault	0: Outlet temperature is below Outlet Temperature Fault limit 1: Outlet temperature is above Outlet Temperature Fault limit
10*	Outlet Temperature Warning	0: Outlet temperature is below Outlet Temperature Warning limit 1: Outlet temperature is above Outlet Temperature Warning limit
11*	Inlet Temperature Fault	0: Inlet temperature is below Inlet Temperature Fault limit 1: Inlet temperature is above Inlet Temperature Fault limit
12*	Inlet Temperature Warning	0: Inlet temperature is below Inlet Temperature Warning limit 1: Inlet temperature is above Inlet Temperature Warning limit
13*	Temperature Sensor Fault	0: Normal operation 1: No output signal is detected from temperature sensor(s)
14	OK To Pull Cap	0: Cap change is not OK 1: Cap change is OK
15	Secondary Leak	0: Cap loss is detected by the primary algorithm 1: Cap loss is detected by the secondary algorithm

\*For products without temperature measurement capability, the value of this bit is always 0.

# A ETHERNET/IP DEVICE PROFILE - GENERAL

## Assembly Object, Class 0x04 (Continued)

### » Output Controls

BIT	NAME	VALUE
0	Reset	Resets the WeldSaver to clear a fault condition and restore the coolant flow.
1	Close Valve	Closes the shutoff valve to stop the coolant flow.
2	Bypass Mode	Turns on Bypass Mode to disable the Leak Detection function.
3-15	Reserved	N/A

## TCP/IP Interface Object, Class 0xF5

### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object

### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Status	DWORD	1	Interface status
2	Get	Configuration Capability	DWORD	0x04	Refer to Configuration Capability table on page 5.
3	Get / Set	Configuration Control	DWORD	0x00 or 0x02	Refer to Configuration Control table on page 5.
4	Get	Phys. Link Object	STRUCT of:		Path to physical link object
		Path Size	UINT	2	No. of 16-bit words in Path
		Path	EPATH	0x20 (Log. Seg. Class) 0xF6 (Class number) 0x24 (Log. Seg. Instance) 0x01 (Instance number)	Restricted to one logical class segment and one logical instance segment (Maximum size is 12 bytes)
5	Get	Interface Config.	STRUCT of:		TCP/IP network interface config.
		IP Address	UDINT	172.24.1.1	Device IP address
		Network Mask	UDINT	255.255.0.0	Device network mask
		Gateway Address	UDINT	172.24.1.100	Gateway address
		Name Server	UDINT	172.24.1.100	Primary DNS
		Name Server 2	UDINT	172.24.1.100	Secondary DNS
		Domain Name	STRING	0	Default domain name
6	Get	Host Name	STRUCT of:		Host name
		Length	UINT	7	Host name length
		Name	STRING	WSP-EIP	Host name string
13	Get / Set	Encapsulation Inactivity Timeout	UINT	0	Number of seconds of inactivity before TCP connection is closed

# A ETHERNET/IP DEVICE PROFILE - GENERAL

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## TCP/IP Interface Object, Class 0xF5 (Continued)

### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes
16 (0x10)	Set_Attribute_Single	No	Yes

### » Configuration Capability

BIT	NAME	VALUE
0	BOOTP Client	1: The device is capable of obtaining its network configuration via BOOTP
1	DNS Client	1: The device is capable of resolving host names by querying a DNS server
2	DHCP Client	1: The device is capable of obtaining its network configuration via DHCP
3	Reserved	0
4	Configuration Settable	1: The Interface Configuration attribute is settable
5	Hardware Configurable	1: The IP Address member of the Interface Configuration attribute can be obtained from hardware settings (e.g., pushwheel, thumbwheel, etc.)
6	Interface Configuration Change Requires Reset	1: The device requires a restart in order for a change to the Interface Configuration attribute to take effect
7	AcdCapable	1: The device is ACD capable
8-31	Reserved	0

### » Configuration Control

BIT	NAME	VALUE
0-3	Configuration Method	0: The device shall use statically assigned IP configuration values 1: The device shall obtain its interface configuration values via BOOTP 2: The device shall obtain its interface configuration values via DHCP
4	DNS Enable	1: The device shall resolve host names by querying a DNS server
5-31	Reserved	0

# A ETHERNET/IP DEVICE PROFILE - GENERAL

## Ethernet Link Object, Class 0xF6

### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object
2	Get	Max Instance	UINT	2	Maximum instance number
3	Get	No. of Instances	UINT	2	Number of instances implemented

### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table on page 7.
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 8.
10	Get	Interface Label	SHORT_STRING	End port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 8.
		Speed/Duplex Array Count	USINT	-	Number of elements in speed/duplex array
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0: Half duplex 1: Full duplex



# A ETHERNET/IP DEVICE PROFILE - GENERAL

## Ethernet Link Object, Class 0xF6 (Continued)

### » Instance 2 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table below
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 8.
10	Get	Interface Label	SHORT_STRING	Switch port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 8.
		Speed/Duplex Array Count	USINT	-	Number of elements in speed/duplex array
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0: Half duplex 1: Full duplex

### » Common Services

CODE	CLASS	INSTANCE	SERVICE NAME
14 (0x0E)	Yes	Yes	Get_Attribute_Single
01 (0x01)	No	Yes	Get_Attribute_All

### » Interface Flags

BIT	NAME	VALUE
0	Link Status	0: Link is inactive 1: Link is active
1	Duplex	0: Half duplex 1: Full duplex
2-4	Negotiation Status	0: Auto-negotiation in progress 1: Auto-negotiation and speed detection failed 2: Auto-negotiation failed but detected speed 3: Successfully negotiated speed and duplex 4: Auto-negotiation not attempted (Forced speed and duplex)
5	Manual Setting Requires Reset	1: The device requires a reset in order for the changes to link parameters take effect
6	Local Hardware Fault	0: No hardware fault 1: A local hardware fault is detected
7-31	Reserved	0

# A ETHERNET/IP DEVICE PROFILE - GENERAL

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## Ethernet Link Object, Class 0xF6 (Continued)

### » Interface State

VALUE	DESCRIPTION
0	Unknown interface state
1	The interface is enabled and is ready to send and receive data
2	The interface is disabled
3	The interface is testing
4-255	Reserved

### » Capability Bits

BIT	NAME	VALUE
0	Manual Setting Requires Reset	0: Manual setting via Ethernet Link Object is not supported and no reset is required
1	Auto-negotiate	0: The interface does not support link auto-negotiation 1: The interface supports link auto-negotiation
2	Auto-MDIX	0: The interface does not support auto-MDIX operation 1: The interface supports auto-MDIX operation
3	Manual Speed/Duplex	0: The interface does not support manual setting of speed/duplex 1: The interface supports manual setting of speed/duplex via the Interface Control attribute
4-31	Reserved	0

## B ETHERNET/IP DEVICE PROFILE - COMPACT

### General EtherNet/IP Information

#### » Supported Services

SERVICE CODE	SERVICE NAME
01 (0x01)	Get_Attribute_All
05 (0x05)	Reset
14 (0x0E)	Get_Attribute_Single
16 (0x10)	Set_Attribute_Single
84 (0x54)	Forward_Open
78 (0x4E)	Forward_Close

#### » Object Classes

CLASS CODE	OBJECT NAME
01 (0x01)	Identity
04 (0x04)	Assembly
245 (0xF5)	TCP/IP Interface
246 (0xF6)	Ethernet Link

#### » Data Types

TYPE	DESCRIPTION	SIZE	RANGE
USINT	Unsigned short integer	1 byte	0 to 255
INT	Integer	2 bytes	-32768 to 32767 (little endian)
UINT	Unsigned integer	2 bytes	0 to 65535 (little endian)
UDINT	Unsigned double integer	4 bytes	0 to 2 <sup>32</sup> -1 (little endian)
WORD	Bit string	16 bits	
DWORD	Bit string	32 bits	
SHORT_STRING	Character string (1 byte per character, 1 byte length indicator)	variable	
STRING	Character string (1 byte per character)	variable	
EPATH	CIP path segments	variable	

### Identity Object, Class 0x01

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	1	Revision of object
2	Get	Max Instance	UNIT	1	Maximum instance number

## B ETHERNET/IP DEVICE PROFILE - COMPACT

### Identity Object, Class 0x01 (Continued)

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Vendor ID	UINT	414	Identification of each vendor by number
2	Get	Device Type	UNIT	43	Indication of general type of product
3	Get	Product Code	UINT	17	Identification of a particular product
4	Get	Revision	STRUCT of:		Revision of item Identity Object represents
		Major Revision	USINT	-	Firmware major revision
		Minor Revision	USINT	-	Firmware minor revision
5	Get	Status	WORD	-	Device status
6	Get	Serial Number	UDINT	-	Device serial number / MAC ID
7	Get	Product Name	SHORT_STRING	WSP-EIP	Product name

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes
05 (0x05)	Reset	No	Yes

### Assembly Object, Class 0x04

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	2	Revision of object
2	Get	Max Instance	UNIT	129	Maximum instance number

#### » Instance 100 (Input) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get	Input Data	STRUCT of:		Data produced by the device
		Input States	BYTE	-	Refer to Input States table on page 11.
		Supply Flow Rate	BYTE	-	Supply flow rate in 1/10th GPM
		Return Flow Rate	BYTE	-	Return flow rate in 1/10th GPM

## B ETHERNET/IP DEVICE PROFILE - COMPACT

### Assembly Object, Class 0x04 (Continued)

#### » Instance 101 (Output) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get / Set	Output Data	STRUCT of:		Data consumed by the device
		Output Controls	BYTE	-	Refer to Output Controls table on page 12.

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
16 (0x10)	Set_Attribute_Single	No	Yes

#### » Input States

BIT	NAME	VALUE
0	Adequate Flow	0: Flow rate is below Flow Warning limit 1: Flow rate is above Flow Warning limit
1	Valve Closed	0: Coolant shutoff valve is open 1: Coolant shutoff valve is closed
2	Bypass Mode	0: Leak detection is enabled 1: Leak detection is disabled
3	Minimal Flow	0: Flow rate is below Flow Fault limit (Unsafe to weld) 1: Flow rate is above the Flow Fault limit (Safe to weld)
4	Cap Loss	0: Normal operation 1: Weld-cap loss or other break in coolant circuit detected
5	Valve Fault	0: Normal operation 1: Control valve failed to respond to shut-off command
6	Flow Sensor Fault	0: Normal operation 1: No frequency is detected from flow sensor(s)
7	Power OK	0: No auxiliary power to device 1: Normal operation

## B ETHERNET/IP DEVICE PROFILE - COMPACT

### Assembly Object, Class 0x04 (Continued)

#### » Output Controls

BIT	NAME	VALUE
0	Reset	Resets the WeldSaver to clear a fault condition and restore the coolant flow.
1	Close Valve	Closes the shutoff valve to stop the coolant flow.
2	Bypass Mode	Turns on Bypass Mode to disable the Leak Detection function.
3-7	Reserved	N/A

### TCP/IP Interface Object, Class 0xF5

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Status	DWORD	1	Interface status
2	Get	Configuration Capability	DWORD	0x04	Refer to Configuration Capability table on page 13.
3	Get	Configuration Control	DWORD	0x00 or 0x02	Refer to Configuration Control table on page 13.
4	Get	Phys. Link Object	STRUCT of:		Path to physical link object
		Path Size	UINT	2	No. of 16-bit words in Path
		Path	EPATH	0x20 (Log. Seg. Class) 0xF6 (Class number) 0x24 (Log. Seg. Instance) 0x01 (Instance number)	Restricted to one logical class segment and one logical instance segment (Maximum size is 12 bytes)
5	Get	Interface Config.	STRUCT of:		TCP/IP network interface config.
		IP Address	UDINT	172.24.1.1	Device IP address
		Network Mask	UDINT	255.255.0.0	Device network mask
		Gateway Address	UDINT	172.24.1.100	Gateway address
		Name Server	UDINT	172.24.1.100	Primary DNS
		Name Server 2	UDINT	172.24.1.100	Secondary DNS
		Domain Name	STRING	0	Default domain name
6	Get	Host Name	STRUCT of:		Host name
		Length	UINT	7	Host name length
		Name	STRING	WSP-EIP	Host name string
13	Get / Set	Encapsulation Inactivity Timeout	UINT	0	0 = Disable 1-3600 = timeout in seconds Default = 120

## B ETHERNET/IP DEVICE PROFILE - COMPACT

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### TCP/IP Interface Object, Class 0xF5 (Continued)

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes

#### » Configuration Capability

BIT	NAME	VALUE
0	BOOTP Client	1: The device is capable of obtaining its network configuration via BOOTP
1	DNS Client	1: The device is capable of resolving host names by querying a DNS server
2	DHCP Client	1: The device is capable of obtaining its network configuration via DHCP
3	Reserved	0
4	Configuration Settable	1: The Interface Configuration attribute is settable
5	Hardware Configurable	1: The IP Address member of the Interface Configuration attribute can be obtained from hardware settings (e.g., pushwheel, thumbwheel, etc.)
6	Interface Configuration Change Requires Reset	1: The device requires a restart in order for a change to the Interface Configuration attribute to take effect
7	AcdCapable	1: The device is ACD capable
8-31	Reserved	0

#### » Configuration Control

BIT	NAME	VALUE
0-3	Configuration Method	0: The device shall use statically assigned IP configuration values 1: The device shall obtain its interface configuration values via BOOTP 2: The device shall obtain its interface configuration values via DHCP
4	DNS Enable	1: The device shall resolve host names by querying a DNS server
5-31	Reserved	0

## B ETHERNET/IP DEVICE PROFILE - COMPACT

### Ethernet Link Object, Class 0xF6

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object
2	Get	Max Instance	UINT	2	Maximum instance number
3	Get	No. of Instances	UINT	2	Number of instances implemented

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table on page 15.
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 16.
10	Get	Interface Label	SHORT_STRING	End port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 16.
		Speed/Duplex Array Count	USINT	-	1 (100 Mb Full Duplex) 4 (Auto negotiation)
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0=half duplex 1=full duplex 2-255=Reserved



## B ETHERNET/IP DEVICE PROFILE - COMPACT

### Ethernet Link Object, Class 0xF6 (Continued)

#### » Instance 2 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table below
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 16.
10	Get	Interface Label	SHORT_STRING	Switch port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 16.
		Speed/Duplex Array Count	USINT	-	1 (100 Mb Full Duplex) 4 (Auto negotiation)
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0=half duplex 1=full duplex 2-255=Reserved

#### » Common Services

CODE	CLASS	INSTANCE	SERVICE NAME
14 (0x0E)	Yes	Yes	Get_Attribute_Single
01 (0x01)	No	Yes	Get_Attribute_All

#### » Interface Flags

BIT	NAME	VALUE
0	Link Status	0: Link is inactive 1: Link is active
1	Duplex	0: Half duplex 1: Full duplex
2-4	Negotiation Status	0: Auto-negotiation in progress 1: Auto-negotiation and speed detection failed 2: Auto-negotiation failed but detected speed 3: Successfully negotiated speed and duplex 4: Auto-negotiation not attempted (Forced speed and duplex)
5	Manual Setting Requires Reset	1: The device requires a reset in order for the changes to link parameters take effect
6	Local Hardware Fault	0: No hardware fault 1: A local hardware fault is detected
7-31	Reserved	0

## B ETHERNET/IP DEVICE PROFILE - COMPACT

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### Ethernet Link Object, Class 0xF6 (Continued)

#### » Interface State

VALUE	DESCRIPTION
0	Unknown interface state
1	The interface is enabled and is ready to send and receive data
2	The interface is disabled
3	The interface is testing
4-255	Reserved

#### » Capability Bits

BIT	NAME	VALUE
0	Manual Setting Requires Reset	0: Manual setting via Ethernet Link Object is not supported and no reset is required
1	Auto-negotiate	0: The interface does not support link auto-negotiation 1: The interface supports link auto-negotiation
2	Auto-MDIX	0: The interface does not support auto-MDIX operation 1: The interface supports auto-MDIX operation
3	Manual Speed/Duplex	0: The interface does not support manual setting of speed/duplex
4-31	Reserved	0

## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

### General EtherNet/IP Information

#### » Supported Services

SERVICE CODE	SERVICE NAME
01 (0x01)	Get_Attribute_All
05 (0x05)	Reset
14 (0x0E)	Get_Attribute_Single
16 (0x10)	Set_Attribute_Single
84 (0x54)	Forward_Open
78 (0x4E)	Forward_Close

#### » Object Classes

CLASS CODE	OBJECT NAME
01 (0x01)	Identity
04 (0x04)	Assembly
245 (0xF5)	TCP/IP Interface
246 (0xF6)	Ethernet Link

#### » Data Types

TYPE	DESCRIPTION	SIZE	RANGE
USINT	Unsigned short integer	1 byte	0 to 255
INT	Integer	2 bytes	-32768 to 32767 (little endian)
UINT	Unsigned integer	2 bytes	0 to 65535 (little endian)
UDINT	Unsigned double integer	4 bytes	0 to 2 <sup>32</sup> -1 (little endian)
WORD	Bit string	16 bits	
DWORD	Bit string	32 bits	
SHORT_STRING	Character string (1 byte per character, 1 byte length indicator)	variable	
STRING	Character string (1 byte per character)	variable	
EPATH	CIP path segments	variable	

### Identity Object, Class 0x01

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	1	Revision of object
2	Get	Max Instance	UNIT	1	Maximum instance number

## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

### Identity Object, Class 0x01 (Continued)

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Vendor ID	UINT	414	Identification of each vendor by number
2	Get	Device Type	UNIT	43	Indication of general type of product
3	Get	Product Code	UINT	17	Identification of a particular product
4	Get	Revision	STRUCT of:		Revision of item Identity Object represents
		Major Revision	USINT	-	Firmware major revision
		Minor Revision	USINT	-	Firmware minor revision
5	Get	Status	WORD	-	Device status
6	Get	Serial Number	UDINT	-	Device serial number / MAC ID
7	Get	Product Name	SHORT_STRING	WSP-EIP	Product name

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes
05 (0x05)	Reset	No	Yes

### Assembly Object, Class 0x04

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	2	Revision of object
2	Get	Max Instance	UNIT	129	Maximum instance number

#### » Instance 100 (Input) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get	Input Data	STRUCT of:		Data produced by the device
		Input States	WORD	-	Refer to Input States table on page 19.
		Main Flow Rate	BYTE	-	Main flow rate in 1/10th GPM
		Main Temp*	BYTE	-	Main temperature in °F

\*Valid for products with temperature measurement capability only.

## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

### Assembly Object, Class 0x04 (Continued)

#### » Instance 101 (Output) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get / Set	Output Data	STRUCT of:		Data consumed by the device
		Output Controls	WORD	-	Refer to Output Controls table on page 20.

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
16 (0x10)	Set_Attribute_Single	No	Yes

#### » Input States

BIT	NAME	VALUE
0	Adequate Flow	0: Flow rate is below Flow Warning limit 1: Flow rate is above Flow Warning limit
1	Valve Closed	0: Coolant shutoff valve is open 1: Coolant shutoff valve is closed
2	Bypass Mode	0: Leak detection is enabled 1: Leak detection is disabled
3	Minimal Flow	0: Flow rate is below Flow Fault limit (Unsafe to weld) 1: Flow rate is above the Flow Fault limit (Safe to weld)
4	Cap Loss	0: Normal operation 1: Weld-cap loss or other break in coolant circuit detected
5	Valve Fault	0: Normal operation 1: Control valve failed to respond to shut-off command
6	Flow Sensor Fault	0: Normal operation 1: No frequency is detected from flow sensor(s)
7	Power OK	0: No auxiliary power to device 1: Normal operation
8	Reserved	N/A
9*	Outlet Temperature Fault	0: Outlet temperature is below Outlet Temperature Fault limit 1: Outlet temperature is above Outlet Temperature Fault limit
10*	Outlet Temperature Warning	0: Outlet temperature is below Outlet Temperature Warning limit 1: Outlet temperature is above Outlet Temperature Warning limit
11*	Inlet Temperature Fault	0: Inlet temperature is below Inlet Temperature Fault limit 1: Inlet temperature is above Inlet Temperature Fault limit
12*	Inlet Temperature Warning	0: Inlet temperature is below Inlet Temperature Warning limit 1: Inlet temperature is above Inlet Temperature Warning limit
13*	Temperature Sensor Fault	0: Normal operation 1: No output signal is detected from temperature sensor(s)
14	OK To Pull Cap	0: Cap change is not OK 1: Cap change is OK
15	Secondary Leak	0: Cap loss is detected by the primary algorithm 1: Cap loss is detected by the secondary algorithm

\*For products without temperature measurement capability, the value of this bit is always 0.

## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

### Assembly Object, Class 0x04 (Continued)

#### » Output Controls

BIT	NAME	VALUE
0	Reset	Resets the WeldSaver to clear a fault condition and restore the coolant flow.
1	Close Valve	Closes the shutoff valve to stop the coolant flow.
2	Bypass Mode	Turns on Bypass Mode to disable the Leak Detection function.
3-15	Reserved	N/A

### TCP/IP Interface Object, Class 0xF5

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Status	DWORD	1	Interface status
2	Get	Configuration Capability	DWORD	0x04	Refer to Configuration Capability table on page 21.
3	Get	Configuration Control	DWORD	0x00 or 0x02	Refer to Configuration Control table on page 21.
4	Get	Phys. Link Object	STRUCT of:		Path to physical link object
		Path Size	UINT	2	No. of 16-bit words in Path
		Path	EPATH	0x20 (Log. Seg. Class) 0xF6 (Class number) 0x24 (Log. Seg. Instance) 0x01 (Instance number)	Restricted to one logical class segment and one logical instance segment (Maximum size is 12 bytes)
5	Get	Interface Config.	STRUCT of:		TCP/IP network interface config.
		IP Address	UDINT	172.24.1.1	Device IP address
		Network Mask	UDINT	255.255.0.0	Device network mask
		Gateway Address	UDINT	172.24.1.100	Gateway address
		Name Server	UDINT	172.24.1.100	Primary DNS
		Name Server 2	UDINT	172.24.1.100	Secondary DNS
		Domain Name	STRING	0	Default domain name
6	Get	Host Name	STRUCT of:		Host name
		Length	UINT	7	Host name length
		Name	STRING	WSP-EIP	Host name string
13	Get / Set	Encapsulation Inactivity Timeout	UINT	0	0 = Disable 1-3600 = timeout in seconds Default = 120

## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

### TCP/IP Interface Object, Class 0xF5 (Continued)

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes

#### » Configuration Capability

BIT	NAME	VALUE
0	BOOTP Client	1: The device is capable of obtaining its network configuration via BOOTP
1	DNS Client	1: The device is capable of resolving host names by querying a DNS server
2	DHCP Client	1: The device is capable of obtaining its network configuration via DHCP
3	Reserved	0
4	Configuration Settable	1: The Interface Configuration attribute is settable
5	Hardware Configurable	1: The IP Address member of the Interface Configuration attribute can be obtained from hardware settings (e.g., pushwheel, thumbwheel, etc.)
6	Interface Configuration Change Requires Reset	1: The device requires a restart in order for a change to the Interface Configuration attribute to take effect
7	AcdCapable	1: The device is ACD capable
8-31	Reserved	0

#### » Configuration Control

BIT	NAME	VALUE
0-3	Configuration Method	0: The device shall use statically assigned IP configuration values 1: The device shall obtain its interface configuration values via BOOTP 2: The device shall obtain its interface configuration values via DHCP
4	DNS Enable	1: The device shall resolve host names by querying a DNS server
5-31	Reserved	0

## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

### Ethernet Link Object, Class 0xF6

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object
2	Get	Max Instance	UINT	2	Maximum instance number
3	Get	No. of Instances	UINT	2	Number of instances implemented

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table on page 23.
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 24.
10	Get	Interface Label	SHORT_STRING	End port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 24.
		Speed/Duplex Array Count	USINT	-	1 (100 Mb Full Duplex) 4 (Auto negotiation)
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0=half duplex 1=full duplex 2-255=Reserved



## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

### Ethernet Link Object, Class 0xF6 (Continued)

#### » Instance 2 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table below
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 24.
10	Get	Interface Label	SHORT_STRING	Switch port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 24.
		Speed/Duplex Array Count	USINT	-	1 (100 Mb Full Duplex) 4 (Auto negotiation)
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0=half duplex 1=full duplex 2-255=Reserved

#### » Common Services

CODE	CLASS	INSTANCE	SERVICE NAME
14 (0x0E)	Yes	Yes	Get_Attribute_Single
01 (0x01)	No	Yes	Get_Attribute_All

#### » Interface Flags

BIT	NAME	VALUE
0	Link Status	0: Link is inactive 1: Link is active
1	Duplex	0: Half duplex 1: Full duplex
2-4	Negotiation Status	0: Auto-negotiation in progress 1: Auto-negotiation and speed detection failed 2: Auto-negotiation failed but detected speed 3: Successfully negotiated speed and duplex 4: Auto-negotiation not attempted (Forced speed and duplex)
5	Manual Setting Requires Reset	1: The device requires a reset in order for the changes to link parameters take effect
6	Local Hardware Fault	0: No hardware fault 1: A local hardware fault is detected
7-31	Reserved	0

## C ETHERNET/IP DEVICE PROFILE - COMPACT UNIVERSAL

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### Ethernet Link Object, Class 0xF6 (Continued)

#### » Interface State

VALUE	DESCRIPTION
0	Unknown interface state
1	The interface is enabled and is ready to send and receive data
2	The interface is disabled
3	The interface is testing
4-255	Reserved

#### » Capability Bits

BIT	NAME	VALUE
0	Manual Setting Requires Reset	0: Manual setting via Ethernet Link Object is not supported and no reset is required
1	Auto-negotiate	0: The interface does not support link auto-negotiation 1: The interface supports link auto-negotiation
2	Auto-MDIX	0: The interface does not support auto-MDIX operation 1: The interface supports auto-MDIX operation
3	Manual Speed/Duplex	0: The interface does not support manual setting of speed/duplex 1: The interface supports manual setting of speed/duplex via the Interface Control attribute
4-31	Reserved	0

## D ETHERNET/IP DEVICE PROFILE - LEGACY

### General EtherNet/IP Information

#### » Supported Services

SERVICE CODE	SERVICE NAME
01 (0x01)	Get_Attribute_All
05 (0x05)	Reset
14 (0x0E)	Get_Attribute_Single
16 (0x10)	Set_Attribute_Single
84 (0x54)	Forward_Open
78 (0x4E)	Forward_Close

#### » Object Classes

CLASS CODE	OBJECT NAME
01 (0x01)	Identity
04 (0x04)	Assembly
245 (0xF5)	TCP/IP Interface
246 (0xF6)	Ethernet Link

#### » Data Types

TYPE	DESCRIPTION	SIZE	RANGE
USINT	Unsigned short integer	1 byte	0 to 255
INT	Integer	2 bytes	-32768 to 32767 (little endian)
UINT	Unsigned integer	2 bytes	0 to 65535 (little endian)
UDINT	Unsigned double integer	4 bytes	0 to 2 <sup>32</sup> -1 (little endian)
WORD	Bit string	16 bits	
DWORD	Bit string	32 bits	
SHORT_STRING	Character string (1 byte per character, 1 byte length indicator)	variable	
STRING	Character string (1 byte per character)	variable	
EPATH	CIP path segments	variable	

### Identity Object, Class 0x01

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	1	Revision of object
2	Get	Max Instance	UNIT	1	Maximum instance number

## D ETHERNET/IP DEVICE PROFILE - LEGACY

### Identity Object, Class 0x01 (Continued)

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Vendor ID	UINT	414	Identification of each vendor by number
2	Get	Device Type	UNIT	43	Indication of general type of product
3	Get	Product Code	UINT	17	Identification of a particular product
4	Get	Revision	STRUCT of:		Revision of item Identity Object represents
		Major Revision	USINT	-	Firmware major revision
		Minor Revision	USINT	-	Firmware minor revision
5	Get	Status	WORD	-	Device status
6	Get	Serial Number	UDINT	-	Device serial number / MAC ID
7	Get	Product Name	SHORT_STRING	WSP-EIP	Product name

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes
05 (0x05)	Reset	No	Yes

### Assembly Object, Class 0x04

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	2	Revision of object
2	Get	Max Instance	UNIT	129	Maximum instance number

#### » Instance 100 (Input) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get	Input Data	STRUCT of:		Data produced by the device
		Input States	WORD	-	Refer to Input States table on page 27.
		Supply Flow Rate	UINT	-	Supply flow rate in 1/100th LPM (or GPM)
		Return Flow Rate	UINT	-	Return flow rate in 1/100th LPM (or GPM)

## D ETHERNET/IP DEVICE PROFILE - LEGACY

### Assembly Object, Class 0x04 (Continued)

#### » Instance 101 (Output) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
3	Get / Set	Output Data	STRUCT of:		Data consumed by the device
		Output Controls	WORD	-	Refer to Output Controls table on page 28.

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
16 (0x10)	Set_Attribute_Single	No	Yes

#### » Input States

BIT	NAME	VALUE
0	Adequate Flow	0: Flow rate is below Flow Warning limit 1: Flow rate is above Flow Warning limit
1	Valve Closed	0: Coolant shutoff valve is open 1: Coolant shutoff valve is closed
2	Bypass Mode	0: Leak detection is enabled 1: Leak detection is disabled
3	Minimal Flow	0: Flow rate is below Flow Fault limit (Unsafe to weld) 1: Flow rate is above the Flow Fault limit (Safe to weld)
4	Cap Loss	0: Normal operation 1: Weld-cap loss or other break in coolant circuit detected
5	Valve Fault	0: Normal operation 1: Control valve failed to respond to shut-off command
6	Flow Sensor Fault	0: Normal operation 1: No frequency is detected from flow sensor(s)
7	Power OK	0: No auxiliary power to device 1: Normal operation
8	Units of Measure	0: Flow units = GPM / Temperature units = °F 1: Flow units = LPM / Temperature units = °C
9	Reserved	N/A
10	Reserved	N/A
11	Reserved	N/A
12	Reserved	N/A
13	Reserved	N/A
14	OK To Pull Cap	0: Cap change is not OK 1: Cap change is OK
15	Secondary Leak	0: Cap loss is detected by the primary algorithm 1: Cap loss is detected by the secondary algorithm

## D ETHERNET/IP DEVICE PROFILE - LEGACY

### Assembly Object, Class 0x04 (Continued)

#### » Output Controls

BIT	NAME	VALUE
0	Reset	Resets the WeldSaver to clear a fault condition and restore the coolant flow.
1	Close Valve	Closes the shutoff valve to stop the coolant flow.
2	Bypass Mode	Turns on Bypass Mode to disable the Leak Detection function.
3-15	Reserved	N/A

### TCP/IP Interface Object, Class 0xF5

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Status	DWORD	1	Interface status
2	Get	Configuration Capability	DWORD	0x04	Refer to Configuration Capability table on page 29.
3	Get / Set	Configuration Control	DWORD	0x00 or 0x02	Refer to Configuration Control table on page 29.
4	Get	Phys. Link Object	STRUCT of:		Path to physical link object
		Path Size	UINT	2	No. of 16-bit words in Path
		Path	EPATH	0x20 (Log. Seg. Class) 0xF6 (Class number) 0x24 (Log. Seg. Instance) 0x01 (Instance number)	Restricted to one logical class segment and one logical instance segment (Maximum size is 12 bytes)
5	Get	Interface Config.	STRUCT of:		TCP/IP network interface config.
		IP Address	UDINT	172.24.1.1	Device IP address
		Network Mask	UDINT	255.255.0.0	Device network mask
		Gateway Address	UDINT	172.24.1.100	Gateway address
		Name Server	UDINT	172.24.1.100	Primary DNS
		Name Server 2	UDINT	172.24.1.100	Secondary DNS
		Domain Name	STRING	0	Default domain name
6	Get	Host Name	STRUCT of:		Host name
		Length	UINT	7	Host name length
		Name	STRING	WSP-EIP	Host name string
13	Get / Set	Encapsulation Inactivity Timeout	UINT	0	Number of seconds of inactivity before TCP connection is closed

## D ETHERNET/IP DEVICE PROFILE - LEGACY

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### TCP/IP Interface Object, Class 0xF5 (Continued)

#### » Common Services

CODE	SERVICE NAME	CLASS	INSTANCE
14 (0x0E)	Get_Attribute_Single	Yes	Yes
01 (0x01)	Get_Attribute_All	No	Yes
16 (0x10)	Set_Attribute_Single	No	Yes

#### » Configuration Capability

BIT	NAME	VALUE
0	BOOTP Client	1: The device is capable of obtaining its network configuration via BOOTP
1	DNS Client	1: The device is capable of resolving host names by querying a DNS server
2	DHCP Client	1: The device is capable of obtaining its network configuration via DHCP
3	Reserved	0
4	Configuration Settable	1: The Interface Configuration attribute is settable
5	Hardware Configurable	1: The IP Address member of the Interface Configuration attribute can be obtained from hardware settings (e.g., pushwheel, thumbwheel, etc.)
6	Interface Configuration Change Requires Reset	1: The device requires a restart in order for a change to the Interface Configuration attribute to take effect
7	AcdCapable	1: The device is ACD capable
8-31	Reserved	0

#### » Configuration Control

BIT	NAME	VALUE
0-3	Configuration Method	0: The device shall use statically assigned IP configuration values 1: The device shall obtain its interface configuration values via BOOTP 2: The device shall obtain its interface configuration values via DHCP
4	DNS Enable	1: The device shall resolve host names by querying a DNS server
5-31	Reserved	0

## D ETHERNET/IP DEVICE PROFILE - LEGACY

### Ethernet Link Object, Class 0xF6

#### » Class (Instance 0) Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Revision	UINT	4	Revision of object
2	Get	Max Instance	UINT	2	Maximum instance number
3	Get	No. of Instances	UINT	2	Number of instances implemented

#### » Instance 1 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table on page 31.
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 32.
10	Get	Interface Label	SHORT_STRING	End port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 32.
		Speed/Duplex Array Count	USINT	-	Number of elements in speed/duplex array
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0: Half duplex 1: Full duplex



## D ETHERNET/IP DEVICE PROFILE - LEGACY

### Ethernet Link Object, Class 0xF6 (Continued)

#### » Instance 2 Attributes

NO.	ACCESS	NAME	TYPE	VALUE	DESCRIPTION
1	Get	Interface Speed	UDINT	0, 10, 100	Actual interface speed (in Mbps)
2	Get	Interface Flags	DWORD	-	Refer to Interface Flags table below
3	Get	Physical Address	Array of 6 USINTs	(MAC ID)	WeldSaver MAC address
7	Get	Interface Type	USINT	2	Type of interface (2 = twisted pair)
8	Get	Interface State	USINT	-	Refer to Interface State table on page 32.
10	Get	Interface Label	SHORT_STRING	Switch port	Human readable identification
11	Get	Interface Capabil.	STRUCT of:		Indication of the capabilities of the interface
		Capability Bits	DWORD	-	Refer to Capability Bits table on page 32.
		Speed/Duplex Array Count	USINT	-	Number of elements in speed/duplex array
		Speed/Duplex Array	ARRAY of STRUCT of:		Speed/duplex array structure
		Interface Speed	UINT	-	10: 10 Mbps 100: 100 Mbps
		Interface Duplex Mode	USINT	-	0: Half duplex 1: Full duplex

#### » Common Services

CODE	CLASS	INSTANCE	SERVICE NAME
14 (0x0E)	Yes	Yes	Get_Attribute_Single
01 (0x01)	No	Yes	Get_Attribute_All

#### » Interface Flags

BIT	NAME	VALUE
0	Link Status	0: Link is inactive 1: Link is active
1	Duplex	0: Half duplex 1: Full duplex
2-4	Negotiation Status	0: Auto-negotiation in progress 1: Auto-negotiation and speed detection failed 2: Auto-negotiation failed but detected speed 3: Successfully negotiated speed and duplex 4: Auto-negotiation not attempted (Forced speed and duplex)
5	Manual Setting Requires Reset	1: The device requires a reset in order for the changes to link parameters take effect
6	Local Hardware Fault	0: No hardware fault 1: A local hardware fault is detected
7-31	Reserved	0

## D ETHERNET/IP DEVICE PROFILE - LEGACY

### Ethernet Link Object, Class 0xF6 (Continued)

#### » Interface State

VALUE	DESCRIPTION
0	Unknown interface state
1	The interface is enabled and is ready to send and receive data
2	The interface is disabled
3	The interface is testing
4-255	Reserved

#### » Capability Bits

BIT	NAME	VALUE
0	Manual Setting Requires Reset	0: Manual setting via Ethernet Link Object is not supported and no reset is required
1	Auto-negotiate	0: The interface does not support link auto-negotiation 1: The interface supports link auto-negotiation
2	Auto-MDIX	0: The interface does not support auto-MDIX operation 1: The interface supports auto-MDIX operation
3	Manual Speed/Duplex	0: The interface does not support manual setting of speed/duplex 1: The interface supports manual setting of speed/duplex via the Interface Control attribute
4-31	Reserved	0



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